

VOLVO GROUP  
ANNUAL AND SUSTAINABILITY REPORT  
2019

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# PERFORM AND TRANSFORM





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# DRIVING PROSPERITY

Every company exists for a reason – it has a purpose. Our solutions to global challenges are driven by our mission to drive prosperity through transport solutions and our vision to be the most desired and successful transport solution provider in the world. We continuously develop our products and services to create value for our customers and to support sustainable societies and the well-being and safety of people.

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## OUR CUSTOMERS MAKE SOCIETIES WORK

The Volvo Group's products and services contribute to much of what we all expect of a well-functioning society. Our trucks, buses, engines, construction equipment and financial services are involved in many of the functions that most of us rely on every day. The majority of the Volvo Group's customers are companies within the transportation or infrastructure industries. The reliability and productivity of the products are important and in many cases crucial to our customers' success and profitability.



**ON THE ROAD**

Our products help ensure that people have food on the table, can travel to their destination and have roads to drive on. We calculate that 15% of all food in Europe is delivered by a truck from the Volvo Group. Our products also deliver goods to keep production plants running.

**OFF ROAD**

Engines, machines and vehicles from the Volvo Group can be found at construction sites, in mines and in the middle of forests. They are used to mine iron ore, transport lumber or haul stone and rock. Our industrial engines power vital irrigation installations at agricultural sites all over the world, so that farmers can grow their crops.

**IN THE CITY**

Our products are part of daily life. They take people to work, collect rubbish and keep lights shining. Our buses and public transport solutions help people get to work or to school. Our construction equipment is used to build housing as well as industrial and sports facilities.

**AT SEA**

Our products and services are there, regardless of whether someone is at work on a ship, traveling to work on a ferry, on holiday in a pleasure boat or need urgent help from the sea rescue services. The Volvo Group has marine engines for a broad range of applications.

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# A GLOBAL GROUP

The Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment as well as marine and industrial engines. The Group also provides complete solutions for financing and service. With its headquarters in Gothenburg, Sweden, the Group employs 100,000 people, has production facilities in 18 countries and sells its products in more than 190 markets.

## Competitive products

The Volvo Group's products have been developed to contribute to efficient transport and infrastructure solutions and to provide our customers with uptime. We drive the development of electrified vehicles and machines as well as automated solutions for the benefit of customers, society and the environment. Sales of new vehicles, machines and engines as well as used vehicles and machines, superstructures and special vehicles accounted for 77% of the Group's net sales in 2019. Sales of vehicles and machines build a population of products that drives spare parts sales and service revenue.

## World-class services

In addition to vehicles and machines, the offering includes various types of services such as insurance, rental services, spare parts, repairs, preventive maintenance, service agreements and assistance services. The range and flexibility of the offering means that the solutions can be tailor made for each customer to maximize uptime and productivity. The service business contributes to balancing the fluctuations in the sales of new products and is an area of priority. Sales of services accounted for 20% of net sales in 2019. The Group also offers financing for customers and dealers. Financial Services provided financing for 25% of the products sold by the Group in 2019, measured in the markets where financing is offered.

## Strong positions globally

Thanks to competitive product programs, strong dealers with extensive service networks and increasingly more complete offerings, the Volvo Group has established leading positions on a global market. The Group is one of the world's largest manufacturers of heavy-duty trucks, construction equipment, buses and heavy-duty diesel engines as well as a leading supplier of marine and industrial engines. These positions provide for economies of scale in product development, production, purchasing and financial services.

## Strong brands

The Volvo Group's brand portfolio consists of Volvo, Volvo Penta, UD Trucks, Terex Trucks, Renault Trucks, Prevost, Nova Bus, Mack and Arquus. We partner in alliances and joint ventures with the SDLG, Eicher and Dongfeng brands. By offering products and services under different brands, the Group addresses many different customer and market segments in both mature markets and growth markets.



**VOLVO  
PENTA**



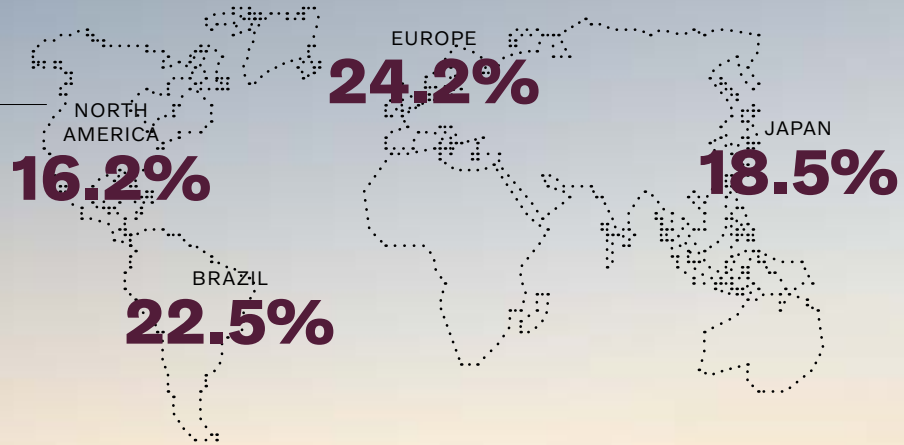
**TEREX TRUCKS**



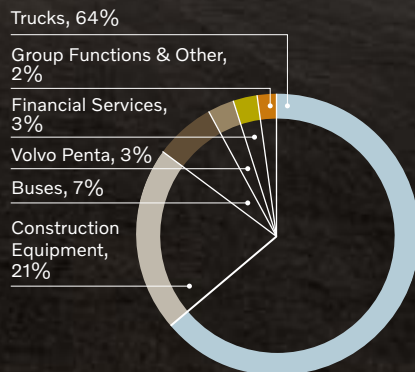
**PREVOST**



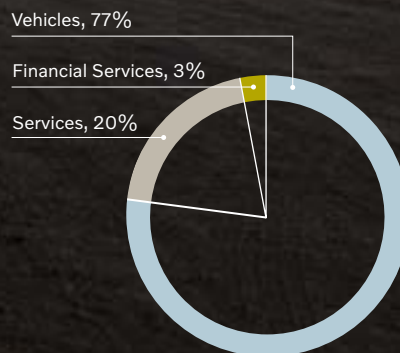
# VOLVO GROUP MARKET SHARES IN HEAVY-DUTY TRUCKS



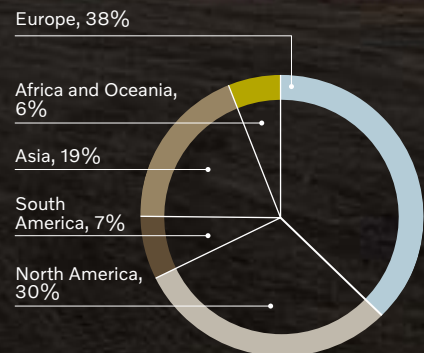
## SHARE OF NET SALES BY SEGMENT



## SHARE OF NET SALES BY REVENUE TYPE



## SHARE OF NET SALES BY MARKET



NOVABUS





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## A GLOBAL GROUP

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The Volvo Group's formal financial reports are presented on pages 70–187, 206–208 and 212–214 and have been audited by the company's auditors. For information on which pages constitute the Volvo Group's Sustainability Report, please see page 110.



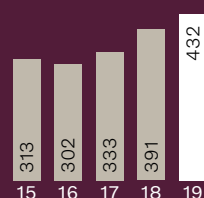
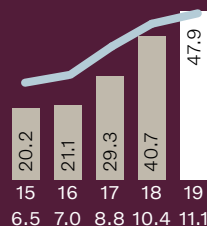
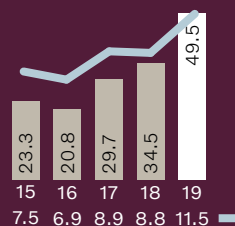
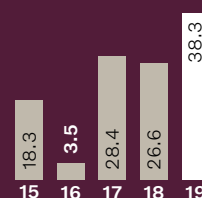
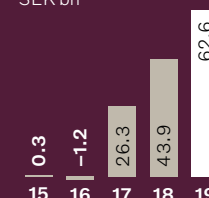
## 2019 IN BRIEF

# INCREASED SALES AND IMPROVED PROFITABILITY

- Higher vehicle and service sales contributed to net sales increasing by 11% to SEK 432 billion (391). Currency-adjusted net sales grew by 5%.
- Adjusted operating income improved to SEK 47,910 M (40,660), corresponding to an adjusted operating margin of 11.1% (10.4).
- Operating cash flow of SEK 38.3 billion (26.6) in the Industrial Operations.
- Strong financial position with net financial assets of SEK 62.6 billion in the Industrial Operations, excluding provisions for post-employment benefits and lease liabilities.
- The Board of Directors proposes an ordinary dividend of SEK 5.50 per share (5.00) and an extra dividend of SEK 7.50 per share (5.00).
- Volvo Group and Isuzu Motors intend to form strategic alliance.

KEY RATIOS	2019	2018	KEY RATIOS	2019	2018
Net sales, SEK M	<b>431,980</b>	390,834	Net financial position excl. provisions for post-employment benefits and lease liabilities, Industrial Operations, SEK bn	<b>62.6</b>	43.9
Adjusted operating income <sup>1</sup> , SEK M	<b>47,910</b>	40,660	Return on shareholders' equity, %	<b>27.0</b>	21.3
Adjusted operating margin, %	<b>11.1</b>	10.4	Total number of employees	<b>103,985</b>	105,175
Operating income, SEK M	<b>49,531</b>	34,478	Share of women, %	<b>19</b>	19
Operating margin, %	<b>11.5</b>	8.8	Share of women, presidents and other senior executives, %	<b>26</b>	25
Income after financial items, SEK M	<b>46,832</b>	32,148	Energy consumption, MWh/SEK M	<b>5.1</b>	5.8
Income for the period, SEK M	<b>36,495</b>	25,363	Total CO <sub>2</sub> emissions, tons/SEK M (GHG scope 1 & 2)	<b>0.8</b>	1.1
Diluted earnings per share, SEK	<b>17.64</b>	12.24	Share of direct material purchasing spend from suppliers having made a CSR self-assessment, %	<b>92</b>	91
Dividend per share, SEK	<b>13.00<sup>2</sup></b>	10.00			
Operating cash flow, Industrial Operations, SEK bn	<b>38.3</b>	26.6			

Net sales, SEK bn

Adjusted operating income<sup>1</sup>, SEK bn  
Adjusted operating margin, %Operating income, SEK bn  
Operating margin, %Operating cash flow  
Industrial Operations, SEK bnNet financial position  
excl. post-employment  
benefits and lease liabilities  
Industrial Operations, SEK bn

1 For more information on adjusted operating income, please see Key Ratios on page 212.

2 Proposed by the Board of Directors. SEK 5.50 per share in ordinary dividend and SEK 7.50 per share in extra dividend.



## CEO COMMENTS

## A YEAR OF STRONG PROFITABILITY AND ONE IN WHICH WE TOOK SEVERAL KEY STEPS TO SECURE OUR FUTURE COMPETITIVENESS

2019 was a strong year for the Volvo Group. We grew our net sales by 11% to SEK 432 billion and improved the operating income to almost SEK 50 billion. This was the result of hard work throughout the Group and I want to extend my warmest thanks to all colleagues for their contributions. It was also a year that really put into focus the importance of *both* delivering good profitability, while at the same time investing for the future and in the technologies that are transforming our industry.

**P**opulation growth, urbanization, digitalization and a continuously expanding middle class are trends leading to increased transport needs and we must meet these increased needs sustainably. Efficiency improvements through new technologies will be necessary in helping us to resolve this, and our industry is undergoing what is perhaps its greatest transformation ever. We are driving rapid technology development in such areas as connected, electrified and autonomous vehicles. This development is also accompanied by new business models, which give us completely new opportunities to generate value for our customers and for society through transport solutions that are more efficient, safer and more sustainable. To meet the climate challenge, new and stricter legislation on carbon emissions from our products is also introduced. This contributes to driving the shift toward a more sustainable transport industry.

On this transformation journey, it is crucial to have good profitability and a strong financial position so that we can invest in our future competitiveness and, at the same time, provide a good return for our shareholders. We can't focus solely on either today's or tomorrow's business – we must do both. We need to manage the ups and downs of demand, while changing our offering over time – all the time with a focus on our customers' efficiency and profitability.

### A year of record profits

During the year, all major truck markets continued to grow. After several good years of high activity among many of our truck customers, it is apparent, however, that they are now making purchases to maintain their fleets rather than to expand their operations. This was reflected in reduced order intake, which led to us adapting our production and our activities to the lower level of demand, initially in Europe after the summer, and we also started reductions in North America toward the end of the year. I am grateful for the open dialogue that we have with the trade unions and that we are able to



work together to use the flexibility in our production system as far as possible to manage the fluctuations in demand. Unfortunately, the lower order intake meant that we had to reduce the number of employees in some markets.

In total, net sales in our truck operations increased by 11% to SEK 277 billion and the adjusted operating margin to 11.4%. Price realization, a positive mix and a good development in the service business contributed to this improvement.

For Construction Equipment the market grew in total terms in 2019, but apart from the Chinese market, we also saw a gradual slowdown in this area during the year. However, there is an underlying demand which comes from the fact that infrastructure in many parts of the world needs to be renewed and – wherever there is population growth – expanded. Construction Equipment had yet another good year. Net sales rose by 5% to SEK 89 billion and the adjusted operating margin amounted to 13.4%.

Volvo Buses continues to invest in electrification and launched several new products during the year, including a fully electric articulated bus for city operation and hybrid buses that can be driven on electricity over longer distances. Our bus organization also continued its internal improvement work with a reorganization in line with the Group's approach of decentralization and decision-making as close to customers as possible. Increased deliveries contributed to Volvo Buses' net sales rising by 20% to SEK 31 billion and to the adjusted operating margin improving to 4.3%.

Volvo Penta stands strong in its industry and has a long tradition of innovation. During the year, new concepts were presented on the marine side, comprising, for example, electric drivelines for ferries, and on the industrial engine side, a driveline for an electrical terminal tractor. Net sales were on par with the preceding year, but the operating margin declined to 14.1% as a consequence of, among other factors, increased investments in product development.

Our important customer financing operation in Volvo Financial Services continued to perform well, with low credit losses and a return on equity of 15.0%. The financing volume increased and at the end of the year, the credit portfolio amounted to SEK 170 billion.

To summarize, with a reported operating income of almost SEK 50 billion and operating cash flow of SEK 38 billion, the Group is in a position of strength. At the end of the year, our Industrial Operations had a net cash position of SEK 63 billion, excluding pension and lease liabilities. Our increased profitability and strong financial position allow us to invest in our future as well as return cash to our shareholders. The Board of Directors proposes an increase in the ordinary dividend to SEK 5.50 per share and an extra dividend of SEK 7.50 per share.

### Striving to take the lead in the transition

In parallel with adapting our activity level to the market situation, during the year we intensified our work to adapt the company for the future. Our mission is to drive prosperity through transport solutions. Looking ahead, this means that we should offer leading, fossil-free alternatives in our core segments. We are also convinced that, by offering total solutions aimed at a larger portion of the transport chain, we will be able to contribute to considerably higher productivity in our customers' logistics systems. And in this transition, which is enabled through connectivity, electrification, automation and digitalization, we will also be able to increase safety on our roads and for our customers' drivers and operators.

In terms of sustainability and corporate responsibility, we are now increasing the pace in our work in line with the principles of the UN Global Compact. In addition, the global Sustainable Development Goals adopted by all UN member states, clearly point out the direction ahead. The Volvo Group can make a major difference by working on improvements throughout our own value chain. But it is by constantly improving our offering with more efficient, more sustainable and safe products and services that we can provide the really large gains for our customers and society at large.

### More collaboration

To be able to offer our customers the best solutions in this changing landscape, it will be decisive to work together with partners. We

have therefore initiated collaboration with Samsung SDI on batteries and battery technology, and with NVIDIA on systems for autonomous transport solutions.

During the year, we achieved a milestone in the form of more than one million connected vehicles and machines in operation at our customers. This gives us great opportunities to work with preventive maintenance and to help our customers optimize the use of their assets. The year also saw the start of commercial sales of fully electric distribution trucks from Volvo Trucks and Renault Trucks. All of our business areas have electric drivelines in their offerings or are in the process of adding them. Although the volumes will be small initially, it is a great feeling that we are driving the development of electrified transports together with our customers. It is now important that various societal stakeholders support this development, for example, by an expansion of the charging infrastructure. In this transformation, we take a broad-based approach to explore new technologies to power our products, such as batteries and fuel cells as well as various alternative fuels.

In pace with technology development, a gradual shift is also taking place from the customer buying a product to us providing a complete transport solution or a transport service in which we also manage the operation. With the creation of the new Volvo Autonomous Solutions business area, we are taking the next step in this development. Autonomous transport solutions are built on technology that is enabled by connected and self-driving vehicles and machines. The solutions create value for our customers by contributing to improved flexibility, delivery precision and productivity. They will first be introduced in restricted areas such as mine operations, ports and terminals, and they are also well-suited to the transportation of large volumes of goods in repetitive flows on predefined routes.

We work continuously to develop the Group's structure and to seek collaboration where needed. A part of this is our intent to form a strategic alliance with Isuzu Motors. We complement one another very well, both in market presence and in our different strengths in terms of products and services. Together, we will establish a partnership in both well-known and new technologies. We also intend to create a stronger truck business overall for UD Trucks and Isuzu by transferring ownership of UD Trucks to Isuzu Motors.

In many respects, these are exciting times for our industry. New technologies and new business models will enable us to create even more value for our customers and for society at large. We will continue to work hard to improve our performance through the business cycle and at the same time strive to take the leadership in these new technologies that are transforming our industry. Our focus on continuous improvement, maintaining a good profitability and a strong financial position make us well positioned to take advantage of the opportunities in this transformation.



Martin Lundstedt  
President and CEO



# CONTRIBUTING TO A BETTER WORLD

The world is changing. In many aspects the world is becoming a better place. Opportunities arise from global decrease in poverty, increase in life expectancy and declining cost for renewable energy. But there are also challenges and the need of driving development – and to grow within the planetary boundaries – is greater than ever. As a global transport solution company we need to understand the world around us in order to stay ahead and to stay competitive.

## GLOBAL PERSPECTIVE

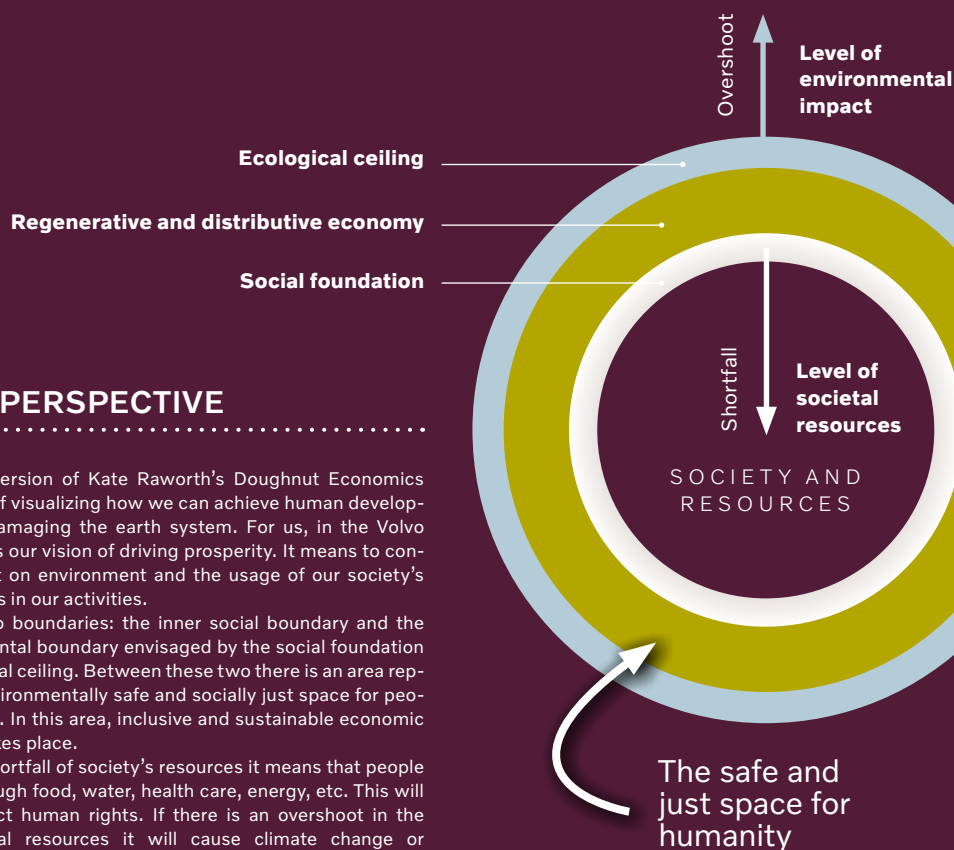
The simplified version of Kate Raworth's Doughnut Economics model is a way of visualizing how we can achieve human development without damaging the earth system. For us, in the Volvo Group, it reflects our vision of driving prosperity. It means to consider the impact on environment and the usage of our society's limited resources in our activities.

There are two boundaries: the inner social boundary and the outer environmental boundary envisaged by the social foundation and the ecological ceiling. Between these two there is an area representing an environmentally safe and socially just space for people to prosper in. In this area, inclusive and sustainable economic development takes place.

If there is a shortfall of society's resources it means that people do not have enough food, water, health care, energy, etc. This will negatively impact human rights. If there is an overshoot in the usage of natural resources it will cause climate change or biodiversity loss.

These boundaries have increasingly gained attention also for the private sector in recent years in an effort to manage this balance in concrete and pragmatic ways. On the one hand, the UN Guiding Principles for Business and Human Rights is focusing on the social foundation, and on the other hand initiatives such as the Paris Climate Agreement set the direction to avoid an overshoot.

Through the conclusions of this model together with the Volvo Group's PESTEL scenario analysis (Political, Economic, Social, Technological, Environmental and Legal) a number of key trends for our industry have been identified. These are described on the next page.



## INDUSTRY PERSPECTIVE

Increased insights and awareness of the impacts of greenhouse gases and other emissions drive changes in climate and energy policies. This speeds up the progress of new mobility solutions powered by low carbon energy and fuels. The development across markets, regions and cities varies in speed and direction, depending on the availability of natural resources and fuels, infrastructure, political will and incentives. Other consequences of this development include extreme weather events or resource constraints, which could in turn lead to higher operating costs.

The industry develops transport solutions and production systems that better manage resource scarcity and with less emissions to air and water. In addition to more energy and carbon efficient solutions, the Volvo Group works to better utilize transports, recycle, remanufacture, and refurbish products and components.

The United Nations Population Fund expects that there will be over nine billion people in 2050. Half of the world's population already lives in cities. In the next decade, we will see a much greater shift from rural to urban areas in Asia and Africa in particular. As urban populations grow, so do mobility demands. Cities face increasing social as well as environmental challenges, including congestion, pollution, noise, and traffic accidents.

The transport and infrastructure industry must continue to provide safer, cleaner, and more efficient solutions for all types of urban development, whether small, medium sized cities or mega cities.



We live in a hyper connected world with multiple technologies, the internet of things (IoT) and the cloud. In 1995 about 1% of the world's population had an internet connection – today over half the population is connected and the number of IoT connected devices will continue to increase at a high pace during the next few years.

Digitization sparks transformation across industries and it impacts all aspects within our industry – from how we create customer value to how we develop, produce, work and interact. The Volvo Group has over 1,000,000 connected running vehicles and machines. Based on data insights we are providing new services for our customers as part of our total offer. We see potential for increased customer value connected to digitization. At the same time, we must secure data integrity to avoid disruption in manufacturing and in our value chain and comply with evolving data protection legislation.

Transport and infrastructure solutions are demanded in diverse markets across the globe. When the world is becoming more fragmented and geopolitically unstable it is manifested by divergent trade rules, transport regulations, customer requirements and competitive dynamics, both between markets and within markets.

Our industry is striving to meet shifting economic, protectionist and regulatory conditions and to improve sustainability, effectiveness, safety and security in the value chain.

Every year there are approximately 1.35 million fatalities and 50 million people injured in traffic accidents around the world. There is a need to improve traffic safety and transport efficiency.

Greater traffic safety education and better planning of roadways are parts of the solution together with active safety features and technology (vehicle stability, emergency braking and visibility support) as well as passive safety components (airbags and body protection in the cab). Progress is also made in terms of automation for commercial vehicles and other machinery. We expect the development to intensify, also for automation within manufacturing. The use of self-driving vehicles is expected to allow the industry to provide greater safety, fuel savings, and transport efficiency.

Read more about how the Volvo Group is working to meet the global challenges in the Value Chain section starting on page 38.

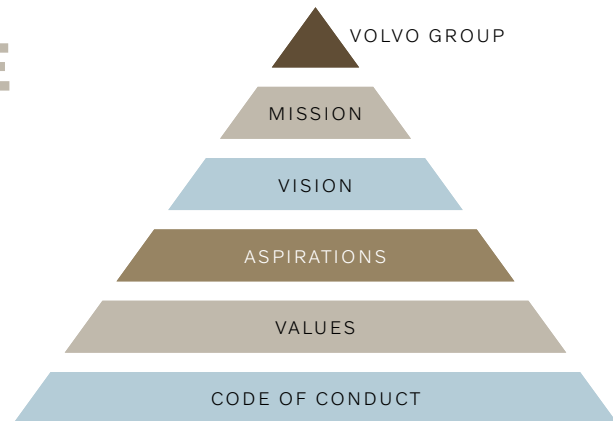


# BRINGING OUR STRATEGY TO LIFE



Our mission is to drive prosperity through transport solutions and our vision is to be the most desired and successful transport solution provider in the world. These are bold ambitions but considering the challenges in front of us we need to be bold. We have great people in the

Volvo Group, great assets to leverage and a clear strategic direction. Now we will bring all parts of our strategic pyramid into life.



## MISSION

### Driving prosperity through transport solutions

The Volvo Group's mission statement expresses a broad ambition – to drive prosperity through transport solutions. Our customers provide modern logistics as the base for our economic welfare. Transport supports growth, provides access for people and goods and modern transport solutions facilitate the increasing urbanization in a sustainable way. Transport is not an end in itself, but rather a means allowing people to access what they need, economically and socially.

## VISION

### Be the most desired and successful transport solution provider in the world

Our vision is to be the most desired and successful transport provider in the world. We are in a people business. Even though we operate in a business-to-business market, people make the decisions. Trust and relations are as important as the total offer. We have competitive products and services and it is with these and our people that we build lasting relations with our customers. In the end, by bringing together the best of everything from the offer to the relationship, we will become the customers' preferred choice.

## ASPIRATIONS

### Guiding us on our journey

Working towards our aspirations ensures that we are on the right track.

- **Have leading customer satisfaction for all brands in their segments:** The only true measure of success is customer satisfaction.

- **Be the most admired employer in our industry:** By being the most admired employer we attract and retain the best people.
- **Have industry leading profitability:** Through strong performance we are able to invest in products, services and people – and thereby own our own destiny.

## VALUES

### Building a performance culture

Our values drive decisions on all levels of the organization. **Customer success** – We truly understand our customers' business. We listen to and talk with our customers about their needs, desires and challenges. We focus on transport solutions that make customers successful and create value for society. **Trust** – We are transparent and have respect for the individual. We trust other teams to do their best and we respect the decisions made. **Passion** – We are proud of the work and business we do. We are engaged and committed to meet our goals. **Change** – We are curious about the world around us. We are innovative and find ways to create new solutions and business. **Performance** – We expect a lot from ourselves and others, and walk the extra mile to do a great job. We see the big picture and know when to let go of an idea, a project or a plan.

## CODE OF CONDUCT

### Building trust with customers and society

Our Code of Conduct outlines how we do business in the Volvo Group; ethically and in compliance with the law. Doing business in line with the Code of Conduct builds trust with our customers as well as with society in general, which contributes to our commercial success. The Code of Conduct has been developed to be a practical tool which shall be used by everyone within the Group, see page 40.

This is an abbreviated version. The full version is available under About us at [www.volvogroup.com](http://www.volvogroup.com)

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*Our company culture is about how we interact with each other, our customers and society as a whole. It helps us achieve our business objectives. It is firmly rooted in our history and is critical to our company's long-term success. It is the foundation on which everything is built.*





# THE JOURNEY CONTINUES

## 1999–2011

### ACQUISITION-DRIVEN GROWTH

Scale, synergies and geographical expansion.

#### MAJOR ACQUISITIONS

##### 2001

Renault Trucks and Mack Trucks

##### 2007

Nissan Diesel (now UD Trucks)

##### 2007

70% of Lingong (SDLG)

##### 2007

Ingersoll Rand Road Development

##### 2008

VECV (joint venture with Eicher)

## 2012–2015

### TRANSFORMATION TO CLOSE THE GAP

Product renewal, restructuring and cost efficiency.



## 2016–

### IMPROVED PERFORMANCE

Customer focus, simplicity, speed, continuous improvements and organic growth.



**D**uring 1999 to 2011 the Volvo Group's strategy was primarily targeted at growth, not least through acquisitions, while at the same time focusing the business on commercial vehicles.

On the truck side, acquisitions included Renault Trucks, Mack Trucks and Nissan Diesel (now UD Trucks), the joint venture with Eicher Motors in India (VECV) and in 2015 the strategic alliance with Dongfeng Commercial Vehicles (DFCV) in China. Volvo Construction Equipment (Volvo CE) bought Samsung's excavator business, a 70% ownership in the Chinese wheel loader manufacturer Lingong (SDLG), Ingersoll Rand Road Development and in 2014 the hauler business from Terex.

The streamlining to commercial vehicles has also involved divestment of non-core businesses such as Volvo Aero, Volvo Rents, real estate and the external IT business.

During 2012 to 2015 the Volvo Group underwent a transformation program aimed at reorganizing the company to take out overlaps, reduce structural costs and increase efficiency and profitability after the period of acquisition-driven growth.

The period between 2016 and 2018 was characterized by reinforcement of the performance culture evidenced by a more decentralized organization and a regionalized value-chain approach.

During 2019 important strategic steps were taken with the partnerships with NVIDIA on decision-making systems for autonomous vehicles and with Samsung SDI on battery packs for trucks. We also announced our intent to form a strategic alliance with Isuzu Motors. Furthermore, a lot of focus was put on future challenges and opportunities. In combination with the trends described on page 9 we have backtracked future scenarios to understand the necessary steps forward. We are also assessing scenarios to build an understanding of what is needed to align our business operations to the Paris Agreement. Our conclusion is that the transport industry is facing a significant transformation and to succeed, our strategy is more relevant than ever.

We see the improved performance and further customer focus developing into our current focus – Perform and Transform. We need to drive both improved performance in our current business at the same time as we prepare for the future to create even greater value for our customers.

Perform and Transform are not sequential events, they need to be run in parallel. To stay relevant and profitable, driving both current business performance and the transformation to meet future demands is our key focus going forward.

**PERFORM**



**AND**

**TRANSFORM**





# PERFORM

## EXCEL ON THE BASICS AND BUILD RESILIENCE

**D**uring the last couple of years the performance of the Volvo Group has improved substantially. Our focus has been on a gradual and consistent earnings improvement, reduced volatility in earnings and cash flow as well as allocating capital in a disciplined way. We have great assets in our people, products and services as well as production sites and well-established dealer networks. We are in a good position to support our customers. But there is more to do. To keep this position and to be able to invest further in new technologies, our focus is on excelling on the basics as well as building resilience.

Our current business will be the base for the Volvo Group in many years to come. The attention is on being agile and flexible in terms of

production volumes, to use our common architecture and shared technology (CAST) wherever it is possible and to have continuous introductions instead of major launch projects. Our quality work is crucial to achieve customer satisfaction and the work of regionalizing our value chain is necessary to give our people the right prerequisites to serve our customers.

Building resilience is key to our long-term profitability. There are more than 2.8 million trucks, buses and machines, produced by the Volvo Group, operating on or off-road. Of those, 1 million are connected. With this as a base we can extend our service offer and capture market share. Our focus is to increase uptime for our customers, but a larger service business also improves our resilience across the business cycle.

### SEVEN STRATEGIC PRIORITIES

There are many paths to pursue to take on opportunities and challenges. Our seven strategic priorities consist of areas with large benefits for both our customers and us in the Volvo Group. They guide our decision making and result in actions but should not be seen as detailed action plans fixed to a specific time frame.

During 2019, the work within each area continued. Our customer offering was strengthened with new products and our regional advantages were further utilized through strong collaboration and by the offer of tailor-made solutions to our customers. The work to drive con-

tinuous improvement in product development, production, sales and administration together with an expanded brand responsibility sets the right focus. By leveraging Group assets for trucks and other business areas, we generate additional profits through synergies. By utilizing the Group's centers of excellence in new technology we strive to reach technology leadership.

To succeed in this work we need a strong, value-based culture that supports engaged employees and subsequently improved business performance.

# 1.

**REINFORCE VOLVO**  
as a global premium heavy-duty truck brand and regain position and market shares of Renault Trucks, Mack and UD as regional high-end brands.



# 2.

**CAPTURE GROWTH IN ASIA** through having the joint ventures DFCV in China and VECV in India as well as the Group's value truck range in a separate value chain – and leveraging it in other emerging markets.

# 3.

**CREATE THE MOST DESIRABLE HEAVY-DUTY PRODUCT AND SERVICE** portfolio tailored to selected premium, high-end and value segments.



# 4.

**SECURE ROBUST PROFITABILITY** through leading R&D, quality, purchasing and manufacturing operations using Volvo Production System.

*Building resilience is key to our long-term profitability.*



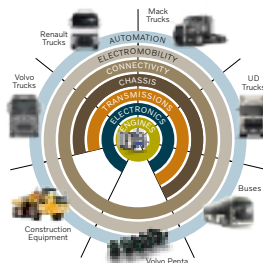
5.

**HAVE BRAND SPECIFIC SALES OPERATIONS** with focus on retail excellence and a growing service business.



6.

**LEVERAGE GROUP ASSETS** in our non-truck Business Areas, creating additional profits, synergies and technology leadership. See page 49.



7.

**REVITALIZE THE VOLVO GROUP CULTURE** with a focus on Customer Success, Trust, Passion, Change and Performance.





# TRANSFORM PROVIDE EVEN GREATER VALUE TO OUR CUSTOMERS

**T**ransformation is not a means in itself. We transform our business to provide even greater value to our customers and respond to future needs and requirements from our employees and partners. The drivers of transformation within our industry are clear. Today's trucks are not used to their full capacity due to congestion, resting time regulations, non-optimized service intervals and low fill rates. A fully-loaded truck operating on diesel is one of the most energy-efficient vehicles transporting goods on our roads with current infrastructure. There is no doubt, however, that alternative fuels and electromobility will play a more important part going forward, as a response to increased CO<sub>2</sub> regulations as well as to our customers' and their customers' demands for more sustainable transport solutions. When it comes to safety aspects, it is a fact that people die in traffic and human error is by far the main reason. It is also a fact that people and goods spend too much time in congestion. Our daily life pattern and non-optimized infrastructure and logistics models result both in temporary congestions and at other times heavily unutilized road networks.

The above describes both customer and society needs in terms of safety, sustainability and productivity. The last couple of years we have continuously invested in new business models and new technologies to be able to offer safer, more sustainable and more productive solutions to our customers. It has resulted in a number of pilots (ElectricSite and Vera, see page 26–27) but also in commercial offers (Volvo FL and FE Electric, Renault Trucks D Wide Z.E. and Mack LR Electric, see page 22–23, and Brønnøy, see page 27).

The Volvo Group has great assets within automation, electromobility and connectivity and we will continue to invest. When it comes to new business models (see the illustration on the next page) there will be different needs for different customers, segments and geographical areas.

There are huge opportunities for us and to get real traction and impact, the focus is on accelerating the execution of new technology and business models to move from pilots to commercialization. This is when the real change happens.



An autonomous truck in operation at the Brønnøy limestone mine in Norway. See page 27.



## SUPPORTING CUSTOMERS WITH DIFFERENT NEEDS



There are different business models for different customers. The range goes from selling a vehicle or machine and get paid by unit, to solving the customer's problem and get paid by result. We will have different offerings along the entire range for different customers depending on preferences, segments and geographies.

Cities around the world are working to solve the major challenges of urbanization: air quality, noise and congestion. At Volvo, we believe we can make a difference with sustainable transport solutions. We want to help cities in their transformation towards zero cities, with zero emissions, zero noise, zero congestion and zero accidents. How? With a complete e-mobility solution, efficient electric buses and our experience of implementation as well as future-proof technologies.

## FINANCIAL TARGETS

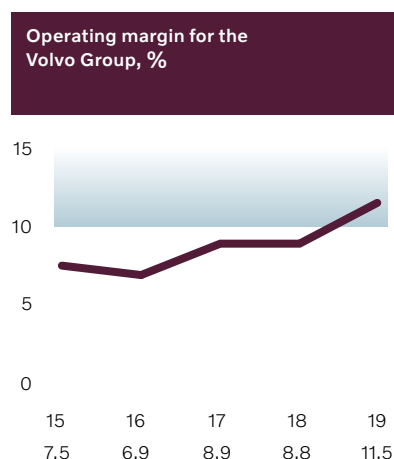
# STRENGTHENED PROFITABILITY AND FINANCIAL POSITION

**T**he Volvo Group has in recent years gone through a substantial restructuring process in order to reduce structural costs and increase efficiency and is currently in a phase where focus is on organic growth and improved profitability through continuous improvement and innovation.

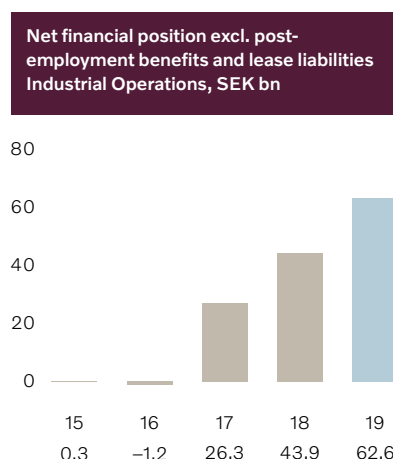
A clear and straightforward operating margin target supports the efforts to drive performance across the Group through the business

cycle. The target also aligns with the way the Group and its business areas are challenged and measured internally. The Board's target is for the Group's operating margin to exceed 10% measured over a business cycle.

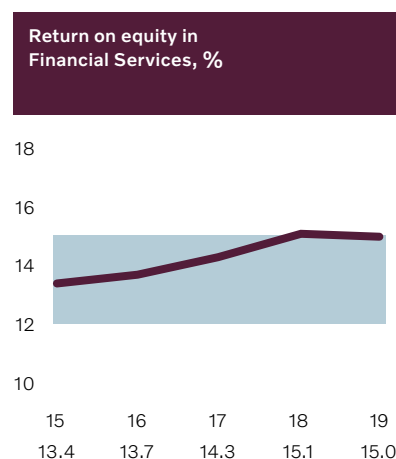
A debt-free industrial balance sheet, excluding pension and lease liabilities, enables the Volvo Group to better manage cyclicalities in a capital-intensive industry and to secure competitive cost of funds for the Financial Services' operation.



The Volvo Group's operating margin shall exceed 10% measured over a business cycle. In 2019, the operating margin amounted to 11.5%. The adjusted operating margin amounted to 11.1% (10.4). For more information on adjusted operating margin, please see Key Ratios on page 212.



The Industrial Operations shall under normal conditions have no net financial indebtedness excluding provisions for post-employment benefits and lease liabilities. At the end of 2019, the Industrial Operations had a net cash position of SEK 62.6 billion.



Financial Services' target is a return on equity of 12–15% at an equity ratio above 8%. In 2019, return on equity amounted to 15.0% at an equity ratio of 8.0%.

• • •

*Our strong financial position gives us the ability to continue to invest in our future in order to secure an even more competitive customer offering.*





ELECTRIFICATION

# Sustainable transport solutions with electromobility

Electromobility is changing the automotive world and it will also change how we plan our cities and infrastructure in the near future. Imagine indoor bus stops and night-time deliveries being made possible by silent distribution trucks.

.....  
**LOWER CO<sub>2</sub> EMISSIONS**  
.....

**REDUCED NOISE LEVEL**  
.....

**INCREASED ENERGY EFFICIENCY**  
.....



**T**he Volvo Group is taking the knowledge from building vehicles and automotive systems, and creating new technology that will not only make our cities less noisy and polluted, but also change the world of construction forever.

With better air quality and less noise in the city, it is possible to plan for housing and infrastructure more freely. An electric truck without any exhaust emissions can be used in indoor terminals and environmental zones. Their low noise level creates opportunities for doing more transport work at night, thus reducing the burden on the roads during the day. There is considerable market interest in electric trucks. Many potential customers are interested in the opportunities generated by the new technology and how it can impact their operations.

#### Modular system approach

Backing the Volvo Group's offer is an accumulated expertise in electrified transport solutions. Volvo Buses has been spearheading the drive towards electrified solutions, having sold more than 4,400 electrified buses under the Volvo brand since 2010. The buses are based on the Volvo Group's modular electric architecture, which is also used as the base for the electrification of trucks, construction equipment and other industrial and marine applications.

This is made possible by applying CAST (Common Architecture and Shared Technology), see page 49. Volvo Group develops complete driveline solutions, systems and components for the business areas and adapts them to their market and application needs.

By utilizing CAST we, as a Group, can secure higher volumes and reduce the time to market. This means that Volvo Group companies do not need to start from scratch. They can combine known technologies into a new solution and work more with system integration than component development. As a result, we are seeing new products reach the market much sooner.

#### Broad expertise

We are convinced that electromobility will be a cornerstone in the urban traffic structure of the future. That is why our offer is extended to include more than just vehicles. Customers want complete system solutions: high-quality vehicles, relevant services and an open interface infrastructure. In these areas, we are at the forefront in research and development, manufacturing and project management.

"Our strength lies in the breadth of our expertise and our experience. We are one of the world's largest manufacturers of commercial vehicles. By further developing the advanced technology from Volvo's electric buses and adapting it to suit different types of vehicles and to meet our customers' needs, we have put ourselves in a strong position in the field of electric mobility. We are now pushing ahead with our work on electric vehicles at a fast pace," says Lars Stenqvist, Chief Technology Officer, Volvo Group.

#### Volvo Trucks starts selling electric trucks in Europe

In November, Volvo Trucks announced the start of sales of its Volvo FL and Volvo FE electric trucks in selected markets in Europe, meeting the increasing demand for sustainable transport solutions in city environments.

The absence of exhaust emissions and with reduced noise levels, electric trucks offer huge potential in urban areas. The reduced noise makes it possible to carry out deliveries and refuse collection in early mornings, late evenings or even at night, helping to improve transport logistics and reduce congestion during peak hours. With better air quality and less noise, electric trucks create new opportunities for city planning and road infrastructure. An electric truck can, for example, be used in indoor loading areas and environmental zones.

The Volvo FL Electric has capacity for a GVW (gross vehicle weight) of 16 tons, while the GVW of the Volvo FE Electric is 27 tons. The start of serial production is planned for March 2020.





## ELECTRIC FUTURE

## ELECTRIC COMPACT EXCAVATOR AND WHEEL LOADER

Volvo Construction Equipment's (Volvo CE) commitment to an electric future is clear and tangible. By mid-2020 Volvo CE will begin to launch a range of electric compact excavators (EC15 to EC27) and electric wheel loaders (L20 to L28), stopping new diesel engine-based development of these models. In parallel, Volvo CE will keep working to find additional opportunities for electromobility across all product ranges and applications. Volvo CE wants to be able to offer its customers clean, efficient solutions that deliver on performance and productivity.



## BATTERY PACKS FOR TRUCKS

## STRATEGIC ALLIANCE WITH SAMSUNG SDI

In 2019, Volvo Group and Samsung SDI entered into a strategic alliance to develop battery packs for Volvo Group's electric trucks. Working together with Samsung SDI, Volvo Group aims to accelerate the speed of development and strengthen the long-term capabilities and assets within electromobility, to the benefit of customers in different truck segments and markets. Samsung SDI intends to provide battery cells and modules to meet the demand for the Volvo Group's electric trucks. The intention is that Volvo Group will utilize Samsung SDI's battery pack technology for assembly in Volvo Group's manufacturing operations.

## NEW LAUNCH FROM VOLVO BUSES

## VOLVO 7900 ELECTRIC ARTICULATED BUS

In October, Volvo Buses launched a new electrically-powered articulated bus that can carry up to 150 passengers and with 80% lower energy consumption compared to a corresponding diesel bus. With the Volvo 7900 Electric Articulated, Volvo Buses is making it attractive to electrify even high-frequency bus routes with large numbers of passengers.

In November, Volvo Buses received, at the time, the largest single order for electric buses in Europe. Volvo Buses will deliver 157 electric articulated buses to Transdev, Sweden starting in 2020. The buses will operate on a number of routes in Gothenburg. With their introduction, emissions and noise will be significantly reduced, and the electric buses will be able to operate in sensitive areas or zones with special restrictions.

Volvo's hybrid buses have also been upgraded. They can now drive silently and emission-free on electricity at higher speeds and cover longer distances than before. This creates new possibilities for operators to use hybrid buses even in zero-emission zones in city centers and other sensitive areas. The upgrade is available for Volvo Buses' full range of new Euro 6 hybrid buses.



## REFUSE TRUCK TO NEW YORK CITY

## MACK LR ELECTRIC

In May, Mack Trucks unveiled its highly anticipated Mack LR battery electric vehicle. Combining the refuse industry-leading design of the Mack LR model with a fully electric Mack drivetrain, the demonstration model will begin real-world testing in 2020 in the demanding operations of the New York City Department of Sanitation.



## NORTH AMERICA

## Volvo VNR Electric shown to customers

In September, Volvo Trucks North America, for the first time, showed the Volvo VNR Electric truck for customers and media. Limited commercial production will start in 2020 – with the first deliveries being part of the partnership known as LIGHTS (Low Impact Green Heavy Transport Solutions) between the Volvo Group, California's South Coast Air Quality Management District and industry leaders in transportation and electrical charging infrastructure.





## ELECTRIC TRUCKS

# Volvo Trucks presents heavy-duty electric concept trucks

Volvo Trucks, having started sales of electric trucks for urban transport in 2019, believes that electrification can become a competitive alternative also for heavier trucks. To explore and demonstrate the possibilities, Volvo Trucks in December announced that it has developed electric concept trucks for construction operations and regional distribution.



## 100% ELECTRIC

## RENAULT TRUCKS DELIVERS ELECTRIC TRUCK TO LYON METROPOLE

In June, Renault Trucks President Bruno Blin handed the keys to a 100% electric refuse collection vehicle to Thierry Philip, Lyon Metropole Vice President and Head of environment, health and well-being in the city. The pre-production D Wide Z.E, the first of the second generation of Renault Trucks electric trucks, was made in the manufacturer's Blainville-Sur-Orne plant in Normandy. For Renault Trucks, electric mobility is the answer to the problematic issue of air quality and noise pollution in urban areas and one of the answers to global CO<sub>2</sub> emissions. Serial production of the truck is scheduled for March 2020, initially in limited volumes.



## ELECTRIFICATION JOURNEY

## VOLVO PENTA TAKING STEPS FORWARD

During 2019, important steps were taken in the journey to offer electrified power solutions to both industrial and marine segments. Volvo Penta signed an agreement to design and deliver an electric driveline for leading fire service vehicle manufacturer Rosenbauer, scheduled for production in 2021. The company announced the aim to provide the propulsion system for an electric ferry service to be introduced in Gothenburg, Sweden. An electric terminal tractor proof-of-concept was also revealed.

Additionally, Volvo Penta started a feasibility study with ABB in Sweden and Chalmers University of Technology in Gothenburg to evaluate concepts for fast charging of electric vessels. The target for completion is 2020. At the Cannes Yachting Festival, Volvo Penta revealed an electric saildrive proof-of-concept onboard a Fountaine-Pajot sailing catamaran.



## AUTOMATION

# Creating real-life benefits



## NEW BUSINESS AREA FOR AUTONOMOUS TRANSPORT SOLUTIONS

We have created a new business area, Volvo Autonomous Solutions, which will accelerate the development, commercialization and sales of autonomous transport solutions.

This is expected to enable the Volvo Group to meet a growing demand and to offer the best possible solutions to customers in such segments as mining, ports and transport between logistics centers, as a complement to today's products and services.

With global developments that are characterized by higher demand for transportation, increasingly congested roads and major environmental challenges, the industry needs to provide transport solutions that are safer, have a lower environmental impact and are more efficient.

Autonomous transport solutions, based on self-driving and connectivity technologies, are well-suited for applications where there is a need to move large volumes of goods and material on pre-defined routes, in repetitive flows. In such situations, autonomous transport solutions can create value for customers by contributing to improved flexibility, delivery precision and productivity.

"We have experienced a significant increase in inquiries from customers. With the Volvo Group's wide range of offerings and broad experience of different applications, we have a unique opportunity to offer

solutions that meet their specific needs. It is a logical next step for us to gather expertise and resources in a new business area with profit and loss responsibility to take autonomous transport solutions to the next level," says Martin Lundstedt, President and CEO.

### Different autonomous transport solutions

The Volvo Group has already demonstrated a number of different autonomous transport solutions. In the Electric Site project, material handling in a quarry was automated and electrified. The result was a safer working environment and a reduction of operator costs by 40% and of CO<sub>2</sub> emissions by 98%.

At the Brønnøy Kalk mine in Norway, autonomous Volvo FH trucks will be used in commercial operation to transport limestone along a five-kilometer stretch. Another pioneering initiative is the self-driving, connected and electric vehicle Vera.

Volvo Autonomous Solutions is a new business area as of January 1, 2020. Its financial results will be reported as part of the Truck segment. In December, Nils Jaeger, President Region EMEA, Volvo Financial Services, was appointed President of the new business area.



We at the Volvo Group believe that automation will redefine the commercial transport solutions that most of us rely on every day. Automation will create real-life benefits for both our customers and the society in terms of productivity and safety as well as energy and fuel efficiency.

.....  
**OPTIMIZATION OF TRAFFIC FLOW**  
.....

**REDUCTION OF FUEL CONSUMPTION**  
.....

**INCREASED SAFETY**  
.....



## DECISION-MAKING SYSTEM

# Volvo Group partners with NVIDIA

In June 2019, the Volvo Group signed an agreement with NVIDIA to jointly develop the decision-making system of autonomous commercial vehicles and machines. Utilizing NVIDIA's end-to-end artificial intelligence platform for training, simulation and in-vehicle computing, the resulting system is designed to safely handle fully autonomous driving on public roads and highways.

The solution will be built on NVIDIA's full software stack for sensor processing, perception, map localization and path planning, enabling a wide range of possible autonomous driving applications, such as freight transport, refuse and recycling collection, public transport, construction, mining, forestry and more.

The partnership with NVIDIA will focus on the development of a flexible, scalable Autonomous Driving System, which is planned

to be used first in commercial pilots and later in commercial offerings from the Volvo Group. The agreement signed between the Volvo Group and NVIDIA is a long-term partnership spanning several years.

NVIDIA is a NASDAQ-listed company whose invention of the graphics processing unit (GPU) in 1999 sparked the growth of the PC gaming market, redefined modern computer graphics and revolutionized parallel computing. More recently, GPU deep learning ignited modern AI — the next era of computing — with the GPU acting as the brain of computers, robots and self-driving cars that can perceive and understand the world.



## AUTONOMOUS ELECTRIC VEHICLE

# Vera's first assignment

In June, Volvo Trucks announced that autonomous electric vehicles, called Vera, will form part of an integrated solution to transport goods from a logistics center to a port terminal in Gothenburg, Sweden. The assignment is the result of a collaboration between Volvo Trucks and ferry and logistics company DFDS.

The purpose of the collaboration is to implement Vera in a real application, enabling a connected system and continuous flow of goods from a DFDS logistics center to an APM Terminals port

facility. Several Vera vehicles will form part of the connected system and will be monitored from a control tower. The aim is to establish a seamless flow of goods responsive to demands for greater efficiency and flexibility.

The autonomous transport solution will be further developed in terms of technology, operations management and infrastructure adaptations, before it can be fully operational. Moreover, necessary safety precautions will be taken to meet societal requirements.



## THIS IS VERA

- Vera is an autonomous, electric vehicle that can operate with significantly less exhaust emissions and low noise levels.
- The system is controlled and monitored via a control center and has the potential to make transportation safer, cleaner and more efficient.
- Vera is suited for short distances, transporting goods with high precision.
- The solution is suited for repetitive flows with a maximum speed of 40 km/h.

## COMMERCIAL SOLUTION

**AUTONOMOUS TRUCKS  
AT BRØNNØY IN NORWAY**

Volvo Trucks' first commercial autonomous transport solution is with Brønnøy Kalk AS in Norway. This service offered by Volvo Trucks consists of limestone being transported by seven autonomous Volvo FH trucks on a five kilometer stretch through tunnels between the mine itself and the crusher. The autonomous vehicles are managed by the operator of a wheel loader.

The commercial solution represents an exciting first for Volvo Trucks – rather than purchasing trucks, Brønnøy Kalk is buying a transport solution. When it comes to the agreement, the customer pays per tons delivered.



## ADVANCED AUTONOMOUS DRIVING

**JAPAN'S FIRST AUTONOMOUS  
DRIVING TEST WITH HEAVY-  
DUTY TRUCKS**

In October 2019, UD Trucks, logistics firm Nippon Express and Hokkaido agriculture cooperative Hokuren demonstrated the use of advanced autonomous driving technology in the handling of farm produce at one of Hokkaido's leading agriculture processing facilities. The demonstration showed an autonomous vehicle (Level 4) from UD Trucks transporting sugar beets through the facility, and as a first for heavy-duty trucks in Japan, autonomous driving on a public road.



## ELECTRIC SITE

**Next steps for  
Electric Site**

In October 2019, Volvo Construction Equipment (Volvo CE) signed a contract for the first commercial pilot of its autonomous battery-electric load-carrier together with customer Harsco Environmental in Sweden – the next step towards an industrialized solution.

In the autumn of 2018, Volvo CE and its customer Skanska performed a research project to create the world's first 'emission-free' quarry. Drawing on the electromobility and automation expertise of the Volvo Group, the project, dubbed Electric Site, aimed to electrify each transport stage in a quarry – from excavation to primary crushing, and transport to secondary crushing – although a negligible amount of diesel power was still used. The viability of Electric Site was tested over 10 weeks at Skanska's Vikan Kross quarry, in Gothenburg, Sweden. The results were even better than expected. The tests showed a 98% reduction in CO<sub>2</sub> emissions, a 70% reduction in energy cost and a 40% reduction in operator cost.

Eight prototype HX2 autonomous, battery-electric load-carriers, a cable-connected EX1 excavator prototype and LX1, Volvo CE's prototype electric hybrid wheel loader were the concept machines used.





CONNECTIVITY

# Increased uptime with connectivity

The Volvo Group has delivered more than 1 million connected customer assets, in terms of trucks, buses and construction equipment. The large amount of data collected is used to improve productivity by increasing vehicle and machine uptime, reducing emissions and noise, as well as improving traffic and site safety.

.....  
**INCREASED EFFICIENCY**  
.....

.....  
**LOWER ENVIRONMENTAL IMPACT**  
.....

.....  
**INCREASED SAFETY**  
.....





“**T**he connected solutions bring increased vehicle and construction equipment uptime for our customers, better safety for drivers, operators and other road users – and of course – less emissions of carbon dioxide. The first million connected assets is only the start, we are committed to remain a leader in this field”, says Martin Lundstedt, President and CEO of the Volvo Group.

#### **Danish customer took delivery of number 1 million**

At a handover ceremony of four excavators to the Danish customer GSV Materieludlejning in October 2019, the critical number of 1 million connected customer assets was exceeded.

“This is a significant moment for the Volvo Group and we are happy to deliver machines that are not only robust and up for the job, but also come with connected solutions to make the customer’s everyday work easier”, said Jens Ejning, Managing Director of Volvo Construction Equipment Denmark as he handed over the keys to Dan O. Vorsholt, CEO of GSV Materieludlejning.

The four excavators are fitted with Volvo’s smart connectivity system CareTrack. It works by capturing thousands of machine data points, which are monitored remotely in a Volvo Uptime Center by dedicated experts. These experts use state-of-the-art diagnostic software to process huge amounts of real-time data and filter back only the most essential information to the customer and dealer.





### Solutions with real value for customers

As more and more people move into cities, the needs for better infrastructure as well as transportation of both people and goods are growing.

“The Volvo Group is a pioneer in connected vehicles and we use the knowledge and insights we get from connectivity in strategic alliances with customers and other partners to speed up the innovation cycle,” says Lars Stenqvist, Chief Technology Officer at the Volvo Group.

Connectivity is one of the key technology areas for Volvo Group. Leveraging vehicle data, our solutions enable our customers to lower their costs and to increase their efficiency. Connectivity is also an enabler for Automation and Electromobility – both when it comes to technology and when it comes to services and solutions for these applications. Our solutions will increase transport and resource-efficiency through optimized traffic flows and a higher utilization of existing infrastructure.

For example, connected Volvo buses use *Zone Management* to let the vehicle itself use downloaded data to comply with local traffic restrictions such as emission zones, noise zones and areas with speed limits. Read more about how Connectivity is changing bus operations on the next page.

For owners of construction equipment, trucks and buses uptime is vital. Thanks to the collected data, wear on crucial parts can be predicted, services planned and spare parts ordered in advance – all improving uptime for the owner, thus leading to increased productivity. For example, this is what Renault Trucks offers with its new *Excellence Predict* offer.

The *Volvo Connect* system combines all digital and connected services for Volvo’s truck customers into one single interface, making the everyday trucking operations run smoothly.

In construction equipment, the fleet management system *Care-Track* allows customers and dealers to monitor productivity data as described on the previous page.

Finally, for Swedish customer NCC, a weight control solution has been developed, allowing the construction equipment operator and the truck driver to monitor the load capacity in real time. The result is a transport solution with higher productivity and lower environmental impact.

“Connectivity is transforming the transportation industry. Insights from gathered data can be turned into value for our customers and society as a whole and make transportation more productive, more sustainable and safer,” says Anna Westerberg, Senior Vice President at Volvo Group Connected Solutions.

## ENHANCEMENTS TO VOLVO PENTA’S EASY CONNECT



Boats are becoming smarter and more connected. The latest updates to Volvo Penta’s Easy Connect application have been inspired by feedback from boaters to improve the connected experience, wherever they are.

Volvo Penta Easy Connect provides users with data related to the engine, boat, and routes taken – directly to their smartphone or tablet – which can be viewed again when back on land. Since its launch in 2018, there have been several updates; all of which have expanded the benefits to a broader audience.

With updates launched in 2019, the app offers even more. A connection to the Cloud, enables user access to boat data across multiple devices, creating a seamless experience, and making it easier than ever to share trips and information with the whole family. With the new update, Easy Connect is available in 11 languages. Boaters now also have easy access to the Volvo Penta owner’s manuals through Easy Connect. Another news is that owners get notifications to keep them informed about new features and system updates. They can also share information through the mobile dashboard that allows them to provide data quickly and accurately to authorized Volvo Penta service dealers, lowering maintenance time and improving precision.



## CONNECTED SERVICES

# Connectivity is changing bus operations

**As the number of connected buses continues to rapidly increase, huge potential to transform the whole industry is being unlocked.**

Volvo Buses has 12,000 connected buses subscribing to services such as *I-Coaching*, *Zone Management* and *Vehicle Monitoring*.

We have come a long way in terms of being able to use data to help our customers save fuel, improve safety, and increase uptime. For example, we can understand how a vehicle is being driven, how it is being used, what is consuming excessive fuel and then we can advise the driver and operator on how to be more efficient. We are also using connectivity for preventive maintenance, improved safety and increasing customer uptime.

As the number of connected vehicles continues to increase, vast amounts of data is being generated, and Volvo Buses is continuously working to use it to its full potential. The possibilities are seemingly endless, with huge gains set to be made in terms of safety, productivity, uptime and efficiency. Connectivity will enable buses to not only connect with each other but with other transport modes and infrastructure, and create smoother, seamless public transport systems.

Bus operators will be able to better track their fleets and adapt capacity according to demand. As predictive maintenance continues to improve, bus owners can have greater confidence in the reliability of their fleets while minimizing replacement costs and workshop visits.

## SOME OF THE CONNECTED SERVICES OFFERED BY VOLVO BUSES

**Zone management** enables operators to enforce speed zones in certain locations, or in the case of hybrid vehicles, enforce the use of electric drivelines in areas sensitive to noise or emissions.

**I-coaching** is a system for monitoring driving behavior and identifying areas for improvement such as excessive idling, curving, harsh braking, quick acceleration and speeding. Instant feedback is sent to drivers while operators can access aggregate analyses of their entire fleets.

**Vehicle monitoring** is a service that assists customers to keep their vehicles on the road and support their operations. Information transmitted from the bus is analyzed and provide a decision on the actions to be performed.

**Fleet management** – a real-time data-based service that provides detailed information on entire fleets including fuel consumption, emissions and positioning.





# PERFORM AND TRANSFORM FOR SUSTAINABILITY

Sustainability is embedded in everything we do. The Volvo Group has identified a number of areas of importance for us to run our business in a sustainable way for our customers, employees, shareholders and all other stakeholders, who have invested in us for the long run.

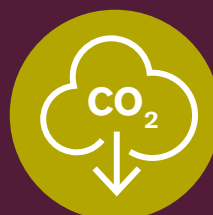
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In 2015, all United Nations' member states adopted one common agenda for 2030. These are called the Sustainable Development Goals (SDGs). There are 17 goals and 169 targets calling for action now to build a common future. We are committed to be part of this work, which means we must perform for our customers today and transform to keep delivering value tomorrow.

There are three main perspectives cutting through the SDGs where we can make a significant impact: climate, resources and people.

- 1** Greenhouse gases are emitted when our products are used and from the energy usage in our manufacturing processes.
- 2** Natural resources are needed to make and drive these products.
- 3** Respect, safety and motivation are key. It is the people in our operations, in our supply chain and at our customers, who make everything come together.

.....



CLIMATE



RESOURCES



PEOPLE

## Integrated sustainability report

Environmental, social and financial sustainability aspects, as well as ethical business conduct, are integrated in the Volvo Group's overall strategy and business model. Therefore, we have chosen an integrated reporting approach where non-financial reporting

requirements are included as an integral part of our financial and operational statements. In addition to this integrated Annual and Sustainability Report, the Volvo Group will provide a separate GRI Report on [volvogroup.com](http://volvogroup.com).

**The perspectives of people, climate and resources** are addressed throughout this Annual and Sustainability Report. When we prioritize our efforts, we focus on where we can make the most impact with our business as the main driver to shape the world we want to live in.

**The United Nations Sustainable Development Goals (SDGs) outlines the world's common agenda for 2030**

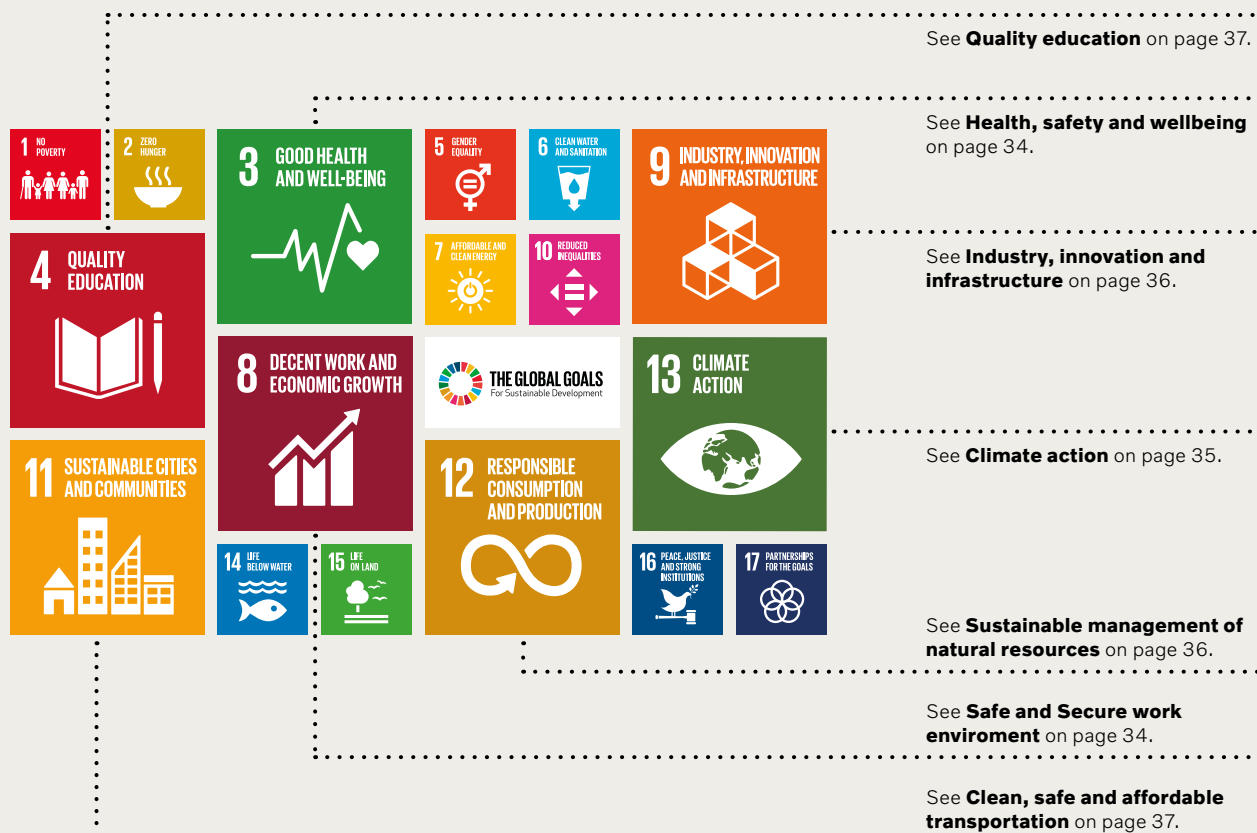
We are committed to all 17 goals, as they all have some connection to our business. Several topics, such as gender equality and fighting corruption are universal for all enterprises. Beyond these universal responsibilities, we focus on the goals where our business activities can have the biggest impact.

Within the frame of the UN Global Compact we have worked in collaboration with a range of associations over the years to drive change. Collaboration is key to gain knowledge, build capacity and broadened understanding for the implementation of sustainable business. Launched in 2015, the SDGs provide a clear direction.

Initiatives such as the SDGs contribute to knowledge creation, advancing regulation and technological development, which ultimately lead to changed market demands. One such example is the new EU emissions regulation for heavy-duty vehicles, which came in effect in 2019, please refer to page 52–53.

Over the next pages we will look closer at how we are developing our business and operations to make an impact.

## THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS



The Volvo Group has been participating in and endorsing the United Nations Global Compact since 2001 and we have reported our progress on environmental, human right, labor standards and anti-corruption since then.

In addition, we base our work on international conventions and standards such as the OECD Guidelines for Multinational Enterprises, the International Bill of Human Rights and the International Labour Organisation's (ILO) Fundamental Principles and Rights at Work.



## HEALTH, SAFETY AND WELLBEING

**Our work on health, safety and wellbeing is directly impacting Goal 3**, and especially *target 3.6* – Halving the number of global deaths and injuries from road traffic accidents. With just one year left to meet this 2020 target, it is evident that this milestone objective on global fatalities due to road accidents will not be met. This will put additional pressure to progress on this target for 2030.

Volvo Group supports this work with products, training and complete transport solutions. 2019 marked the 50th anniversary from when Volvo Trucks' Accident Research Team (ART) began to systematically gather, analyze and act upon in-depth information about real-life traffic accidents. The knowledge gained provides unique value in the development of safety systems and future vehicle designs, with the objective of making trucks and transport safer.

The safety work includes all road users, both inside and outside our vehicles. The ART's work focuses on improving both active and passive safety for Volvo Group's trucks. Research into passive safety is designed to minimize the consequences of any accident, and active safety means avoiding accidents. Read more about safety in Product development on page 51.



## SAFE AND SECURE WORK ENVIRONMENTS

**Safety and health at work begins in our own operations with direct impact on Goal 8**, and especially *target 8.8* – to promote safe and secure work environments. The vision is zero accidents.

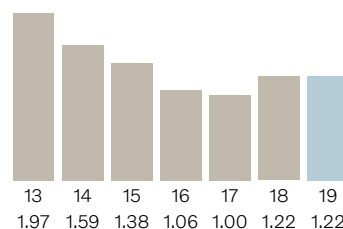
### 150 ideas to improve safety

During three weeks in October 2019, the Volvo Service Market Logistics organization in Asia Pacific set up a Gemba Safety Race. The mission was to identify safety gray zones through Gemba walks, find solutions to solve the problems and implement the ideas. Around 100 employees came up with over 150 ideas to improve safety. The Gemba is central to the production system – it is the actual place where the value is created. One of the strengths of using the production system in this way is that all observations are reviewed and escalated, and actions are deployed when needed. Many of the ideas were implemented immediately.

Read more about health and safety on page 66.



**Health & Safety<sup>1</sup>**  
Lost Time Accident Rate<sup>2</sup>



<sup>1</sup> The scope of employees included in the numbers have increased substantially over the past five years and since 2018 it covers 100%.

<sup>2</sup> Number of recordable accidents with lost time × 200,000 hours/total number of worked hours for all employees and consultants.





## CLIMATE ACTION

**Climate impact cuts through most of the SDGs**, from energy and resource efficiency, to sustainable transport systems and reducing ocean acidification by avoiding greenhouse gas emissions. *Target 13.3* sums it up concretely – Increasing awareness and capacity on climate change mitigation, adaptation and impact reduction.

**Our work is focused on fuel and energy efficiency, as well as alternative fuels, and can be found throughout this report:**

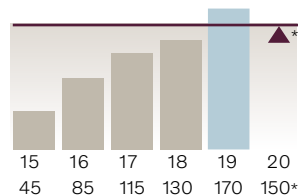
- Electrification, page 20–23
- Fuel efficiency with I-Save for Trucks, page 45
- Alternative fuels and drivelines, page 49
- Lowering energy usage, emissions and other environmental impact from operations, pages 57–58



### The Volvo Group's main commitments and targets for climate and energy efficiency through the WWF Climate Savers program:

#### Production

**Target:** Implement energy saving activities resulting in an annual saving of 150 GWh/year by 2020.

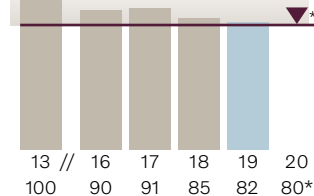


**Attained:** Activities saving 170 GWh had been implemented by 2019.

\*Target

#### Transports

**Target:** Reduce CO<sub>2</sub> emissions per produced unit from freight transport by 20%.

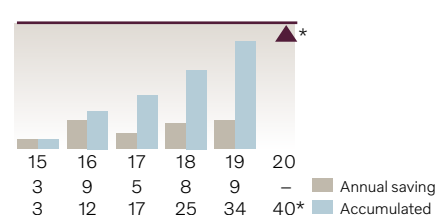


**Attained:** Emissions per produced unit were 18% lower 2019 compared to baseline 2013. \* Target

\* Target

#### Products

**Target:** Reduce total lifetime CO<sub>2</sub> emissions from products, by a cumulative saving of at least 40 million tons.



**Attained:** 34 million tons of CO<sub>2</sub> emissions have been saved 2015 to 2019.

\* Target

**We also magnify our commitment** by acting as advocates and drivers of climate positive solutions in our industry and throughout the value chain. From co-chairing the UN Advisory Group on Sustainable Transports, to increase renewing energy in production, enabling electrified city transports and construction, and reducing fuel consumption in specific product ranges. Read more on [volvogroup.com/climate](http://volvogroup.com/climate)

Climate Savers is WWF's leadership program with the objective to recognize corporate leadership on climate solutions: develop low, zero or carbon positive business models and demonstrate that reductions in greenhouse gas emissions can go hand-in-hand with economic growth. Volvo Group has been part of the program since 2010, and was the first automotive company to join. Read more on [www.climatesavers.org](http://www.climatesavers.org)





## INDUSTRY, INNOVATION AND INFRASTRUCTURE

**Our industry is driven by innovation and infrastructure development** and *target 9.4* – Upgrading infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and focusing on cutting CO<sub>2</sub> per value added, is especially relevant for the Volvo Group.

### Cutting emissions from the quarry

We are at a very early stage of commercializing our Electric Site concept for quarries. In Sweden, Volvo CE signed a contract for the first commercial pilot of its autonomous battery-electric load-carrier, read more on page 27.

In addition, we have also invested in a customer demo area for electric and autonomous construction machines in Eskilstuna, Sweden.

### Recover heat from industrial operations

Volvo Construction Equipment also invested in its own operations to recover heat energy from the workshop in Eskilstuna, read more about this and more about resource efficiency on page 63.

### Other examples

- Autonomous transport solutions, page 24–25
- Investments in innovative technologies: automation, electrification and connectivity for infrastructure and transport, pages 49–51



## SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

**Management and efficient use of natural resources are included in UN Goals 7 and 12**, where fuel efficiency is an important factor of *target 7.3* – Doubling the rate of energy efficiency.

Volvo Penta has made an extended commitment with the WWF Climate Savers to increase fuel efficiency within existing engine ranges. The Stage V engine for off-road applications can improve fuel efficiency by up to 5%.

*Target 12.2* highlights sustainable management and efficient use of natural resources. The Volvo Group seeks to increase resource efficiency and circularity through more remanufacturing, higher material efficiency over the life-cycle and overall better utilization of the vehicles during the customers' use phase. Read more on page 62–63.

### The Clean Seas campaign

Volvo Penta focuses on drivelines on land and at sea. Beyond product focus, in 2019 Volvo Penta collaborated with customers within the Clean Seas campaign initiated by UN Environment. The initiative gathers companies in the marine industry to collectively address challenges of marine environments, read more on [volvopenta.com](http://volvopenta.com).







## QUALITY EDUCATION

**Education and development empowers us to drive prosperity** and our impact is especially strong for *target 4.3* – Equal access to affordable technical vocational and higher education.

### Access to competency development

We work across the value chain to build capacity for the future. The Volvo Group stimulates individual development and training for our employees. Please read more on page 65–66.

**Vocational training stimulates employment** and creates significant value for our customers. We support vocational training programs in different ways depending on local needs and prerequisites. In Europe and North America, this is usually in the form of supporting technical high schools. In some emerging markets prerequisites are different. The Volvo Group works with national and international aid agencies to develop local schools. We support in project management, training of trainers, and in-kind giving of vehicles or components to learn and work with.

One example is the Iron Women – a commercial driving academy especially targeting women – with the aim of enhancing the capacity of professional drivers and improving road safety. In October 2019, the South African Iron Women academy celebrated a class of 40 women who were previously unemployed and are now trained professional drivers.

Another example is the vocational training schools we support for training skilled mechanics. In Zambia we inaugurated phase two of the Nortec school in Zambia's copper belt, read more on page 46.



## CLEAN, SAFE AND AFFORDABLE TRANSPORTATION

**The goal of sustainable cities and communities** is a significant business driver for the industry and especially *target 11.2* – Providing access to safe, affordable, accessible and sustainable transport systems by 2030, notably by expanding public transport. In this work, the Volvo Group contributes by developing and expanding safe and sustainable transport solutions.

### Euro VI in emerging markets

Mexico City invests in more sustainable public transport. In 2019, we received an order for 129 Euro VI buses. Euro VI is the latest European emissions standard with significantly lower emissions of nitrogen oxides and particulate matter.

### Electrified transportation is one of the solutions

In November 2019, we announced Europe's biggest deal to date on fully electric articulated buses. 157 buses will operate in the public transportation system in Gothenburg, Sweden.

During the year, Volvo Group and Samsung SDI together communicated a joint effort to develop battery packs specifically for the Group's truck applications.

### Other examples

- Electrification of transportation systems, pages 20–23
- Zone management for buses, page 31
- More examples from Volvo Buses, page 91–92





# DRIVING PERFORMANCE TO CREATE VALUE

The Volvo Group is generating long-term competitiveness by maximizing value creation in every part of our value chain through increased efficiency, quality and performance and by acting responsibly towards business partners, employees and the world around us.



## VALUE CREATION

## TO CUSTOMERS

## UPTIME AND PROFITABILITY

Almost 2.1 million trucks and 100,000 buses, which the Group manufactured in the past 10 years, drive on roads

worldwide. Our construction machines operate at construction sites all around the world, us having delivered about 600,000 machines in the last 10 years. In the US over 70% of all freight tonnage is moved by trucks. In the EU roughly 50%.

## TO SOCIETY

## DRIVING PROSPERITY

Our products and services make societies function. Our customers operate bus lines so that people can get to work, they transport food and industrial goods and they build infrastructure such as roads and hospitals. Road freight transport directly creates 6.5 million

jobs in the EU and nearly 9 million jobs in the US. We also contribute to the local economy by being a major employer in many communities, providing both direct and indirect employment. In 2019 the Group paid SEK 10,560 M (9,681) in social costs, SEK 5,031 M (4,335) in pension costs and SEK 9,401 M (6,838) in income taxes. We also pay customs duties as well as property and energy taxes.

## TO CREDITORS

**SEK  
1.1  
BILLION**

A long-term competitive business requires access to capital to be able to invest.

The Volvo Group strives to ensure that the capital is used in the best possible way and to assure debt providers with the financial strength to secure proceeds and repayment. In 2019 the Volvo Group paid its creditors SEK 1,104 M (1,307) in interest.

## TO EMPLOYEES

**SEK  
48.6  
BILLION**

The Group's 104,000 employees are our most important asset. Employee commitment and a performance culture based on cus-

tomers success, trust and passion are critical for the Group to fulfill its mission of driving prosperity through transport solutions. The Group strives to offer competitive employment terms and benefits as well as a stimulating, safe and healthy work environment. In 2019 we paid SEK 48,600 M (45,983) in salaries and remuneration.

## TO SUPPLIERS

**SEK  
299.6  
BILLION**

A solid supplier base and professional partnerships are essential for customer success. The Volvo Group places high demands in terms of a responsible and

sustainable behavior on its suppliers globally. The Volvo Group provides both income and employment for a large number of companies and in many societies around the world. Purchased goods and services is the Volvo Group's single largest expense and in 2019 we bought goods and services for SEK 299,595 M (270,269).

## TO SHAREHOLDERS

**SEK  
26.4  
BILLION**

The Volvo Group strives to generate increased value for its shareholders. This is achieved through a positive share price development and payout of dividends. From 2014–2019 the price for the

Volvo B share increased by 86%. Shareholders normally receive a certain portion of the retained earnings in the form of a dividend, after consideration has been given to the Group's need for capital for continued development according to its strategies. For 2019 the Board of Directors proposes an ordinary dividend of SEK 5.50 (5.00) per share and an extra dividend of SEK 7.50 (5.00) per share, in total SEK 26,435 M (20,335).

## ETHICAL AND COMPLIANT BUSINESS

**B**ehaving ethically and conducting business with integrity and in compliance with the law is a prerequisite for being a responsible company and building trust with our customers, business partners and society. Trust is one of the Volvo Group's most important values; therefore our Code of Conduct sets the framework for everything we do.

### Code of Conduct

The Volvo Group Code of Conduct is a mandatory Group-wide policy that sets the requirements on how to conduct business – ethically and in compliance with the law. The Code of Conduct states our minimum requirements on how we do business within the Volvo Group everywhere we operate and it focuses on the requirements for all employees.

The Code of Conduct is complemented by other policies that describe in more detail how we address its minimum standards and an e-learning is launched on an annual basis to support employees in understanding the expectations for how we do business and how to put the Code of Conduct to work. The Code of Conduct is available in 15 languages. Close to 50,000 employees with access to computer workstations completed the mandatory training before the closing of the still running campaign. In addition, more than 2,800 managers further provided face-to-face training sessions for employees in the production environment or without access to computers. In 2020, a new e-learning will be launched and further training efforts will take place to promote the Code of Conduct, its values and key principles. The Code of Conduct is publicly available on [volvogroup.com](http://volvogroup.com).

### Complying with legal regulations

Legal compliance forms the basis for everything we do in the Volvo Group. It covers many different areas and is guided by people of expertise and knowledge across the Group, such as our work related to complying with emissions regulations, see pages 52–53. Other examples from the Code of Conduct are our commitments to comply with antitrust (competition) and anti-corruption laws in all jurisdictions where we conduct business. Our Code of Conduct states that we shall compete in a fair manner on the merits of our products and services and not participate in or endorse any corrupt practices. These principles of compliance are implemented through the Volvo Group Compliance Policy and dedicated compliance programs.

Across the Group we have programs consisting of a number of elements, including policies and guidelines, a comprehensive range of e-learning and tailored face-to-face training, counselling and support, as well as auditing and review. The Volvo Group whistle-blower procedures also apply to our compliance programs. The process for anti-corruption due diligence assessments of business partners aims to prevent bribery by third parties carrying out business on behalf of the Volvo Group. The system includes the use of external tools, and applies to existing and new business partners.

### Responsible tax practices

Given the role of taxes as a way to fund public welfare, we regard corporate tax compliance as a matter of responsible business behavior.

The Volvo Group shall comply with the tax laws and regulations of each country where we operate. We do not engage in any aggressive tax planning activities through structures in tax havens or otherwise. Where tax laws do not give clear guidance, prudence and transparency shall be the guiding principles. A fundamental objective of our tax policy is to ensure compliance with these principles throughout the Group, and at the same time ensure tax efficiency through tax-conscious management of our operations. The average corporate tax rate of the Volvo Group for the last five years is 24%.

### Monitoring adherence

Adherence to the Code of Conduct is monitored through management control systems and internal controls. A whistle-blower policy encourages all employees to report suspected violations to their managers or other management representatives. If reporting to superiors is not feasible or possible, or is not taken seriously, employees have the possibility of escalating suspected violations to Corporate Audit and the opportunity to remain anonymous where permitted by law. The Volvo Group does not tolerate retaliation against a person for making complaints in good faith of violations or suspected violations against the Code of Conduct.

In total, 133 reports were escalated to Corporate Audit in 2019, which exceeds the number of reports in 2018 (102). This is due to the availability of the Volvo Group Whistle, our online platform for submitting whistle-blowing reports, and the reinforcement of the Code of Conduct. All reports have been addressed and investigated. None of the reports in 2019 were considered to have a critical impact on the Volvo Group. There are periodic reports on the whistle-blower and fraud investigation activities provided to the Audit Committee and the AB Volvo Board of Directors. The most commonly reported categories were workplace management (69) and business ethics and financial practices (42). Read more about Corporate Audit on page 198.

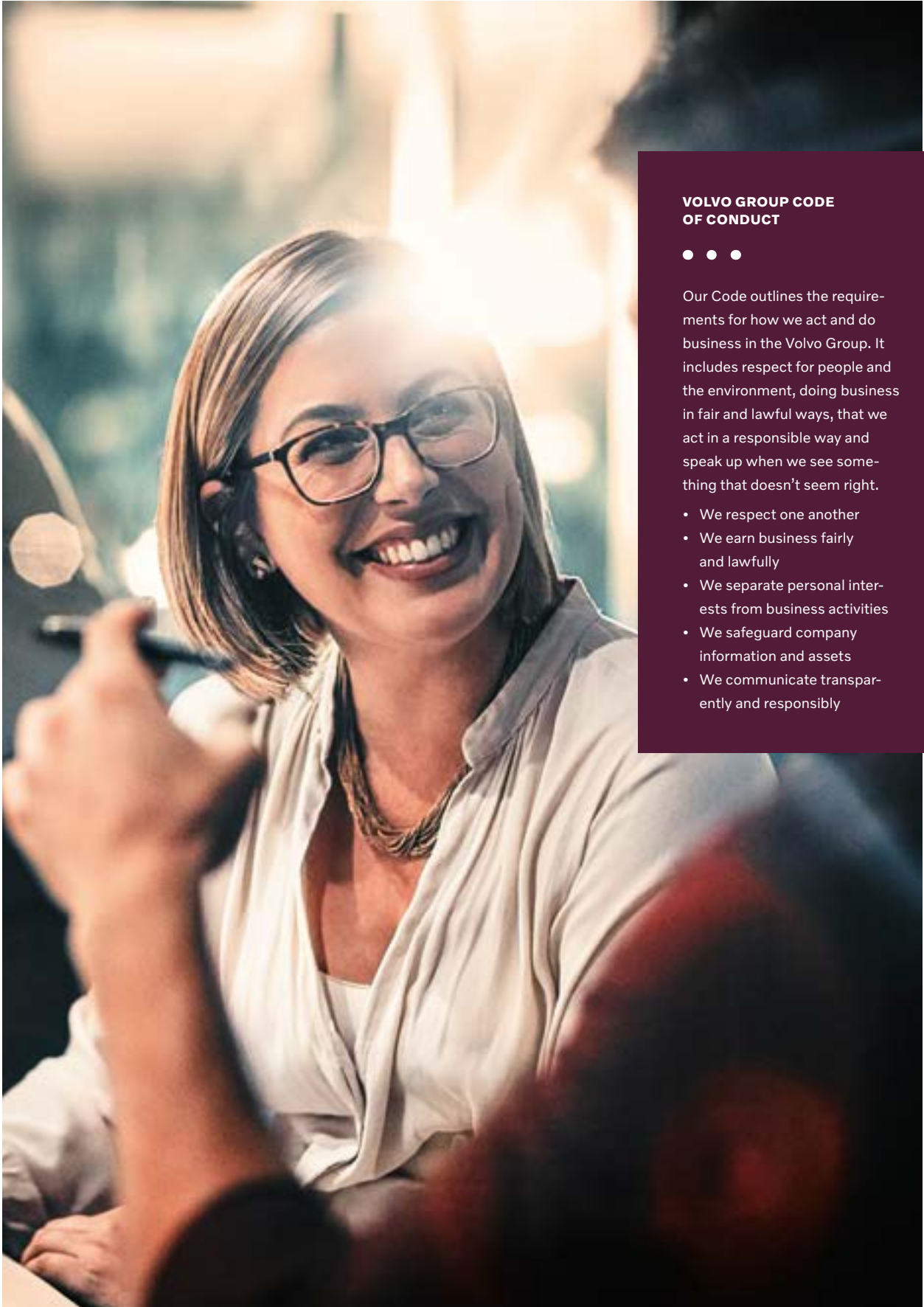
#### Whistle-blower concerns escalated to Corporate Audit

Type of concerns reported	2019		2018	
Workplace Management	69	52%	42	41%
Business Ethics and Financial Practices	42	32%	35	34%
Corruption and Conflict of Interest	7	5%	13	13%
Other including inquiries	15	11%	12	12%
Total	133	100%	102	100%

### Data privacy within Volvo Group

Data privacy is part of the Volvo Group's Code of Conduct and a prioritized area across the Group. In 2018, the General Data Protection Regulation (GDPR) came into effect within the European Union. The purpose of the regulation is to improve protection of individuals' rights to personal integrity. The Group-wide Data Privacy Compliance Program has been established and continued in 2019. Processes and applications have been adapted in order to ensure data privacy and compliance with regulatory requirements. Further, the Group Privacy Office has been established that oversee the implementation and monitoring of the compliance program. ■





#### **VOLVO GROUP CODE OF CONDUCT**



Our Code outlines the requirements for how we act and do business in the Volvo Group. It includes respect for people and the environment, doing business in fair and lawful ways, that we act in a responsible way and speak up when we see something that doesn't seem right.

- We respect one another
- We earn business fairly and lawfully
- We separate personal interests from business activities
- We safeguard company information and assets
- We communicate transparently and responsibly

## THE HUMAN RIGHTS PERSPECTIVE

**T**he Volvo Group is committed to respect human rights. This includes not just colleagues in our operations but also people in neighboring communities, suppliers and others potentially impacted by the use of our products and solutions. We are continuously strengthening our human rights approach for further alignment with relevant and credible international frameworks on business and human rights.

### Our responsibility to respect human rights

The Volvo Group is a truly global company with more than 100,000 employees and 51,000 suppliers, providing transport and infrastructure solutions to about 190 markets. Our responsibility to respect human rights includes supporting and recognizing the following international and regional human rights instruments:

- UN International Bill of Human Rights
- ILO's eight fundamental conventions
- UN Global Compact
- UN Guiding Principles on Business and Human Rights
- OECD Guidelines for Multinational Enterprises
- Children's Rights and Business Principles by the UN Global Compact, UNICEF and Save the Children

We look to these instruments for support and guidance, especially in contexts with elevated human rights related concerns, and where regulations are sometimes insufficient or inadequately enforced.

The Volvo Group Code of Conduct, Supplier Code of Conduct and other Group-level policies and directives reflect our commitment to respect human rights. Through these guiding documents, we set and communicate our expectations on mutual respect, non-discrimination, safe and healthy workplaces, freedom of association and collective bargaining, working hours and compensation and zero tolerance to any forms of modern slavery or child labor. We consider these to be the most relevant human rights issues for the Volvo Group currently and continue to identify any other issues that may become relevant. These topics are also part of the mandatory training for all employees on the Volvo Group Code of Conduct. See page 40 for more information about the Code of Conduct and associated training.

The Volvo Group also complies with human rights related reporting requirements under the EU's non-financial reporting directive and the UK Modern Slavery Act. During 2019, we published Modern Slavery Statements for relevant companies within the Volvo Group.

### Human rights is part of our sustainability strategy and governance

The Volvo Group's Human Rights governance model is based on cross-functional governance forums and working groups, all steered by a Human Rights Board, composed by relevant members from our Executive Board. Our Group functions such as Corporate Responsibility, Legal and Compliance and Human Resources, together with our Group Truck divisions and business areas, identify, assess and monitor human rights related risks within our operating environ-

ment through human rights due diligence, enterprise risk management processes, dialogues with unions, industry collaboration and other benchmarks. Volvo Group's human rights due-diligence and mitigation efforts are focused on where we believe there are the highest risks of people getting harmed. We define this by taking into account country/region human rights risk levels, purchase category or sales segment risks, and potential concerns brought to our attention by our employees and external stakeholders.

Our priority ahead is to continue to strengthen and implement a robust human rights approach.

### Respect for human rights in our own operations

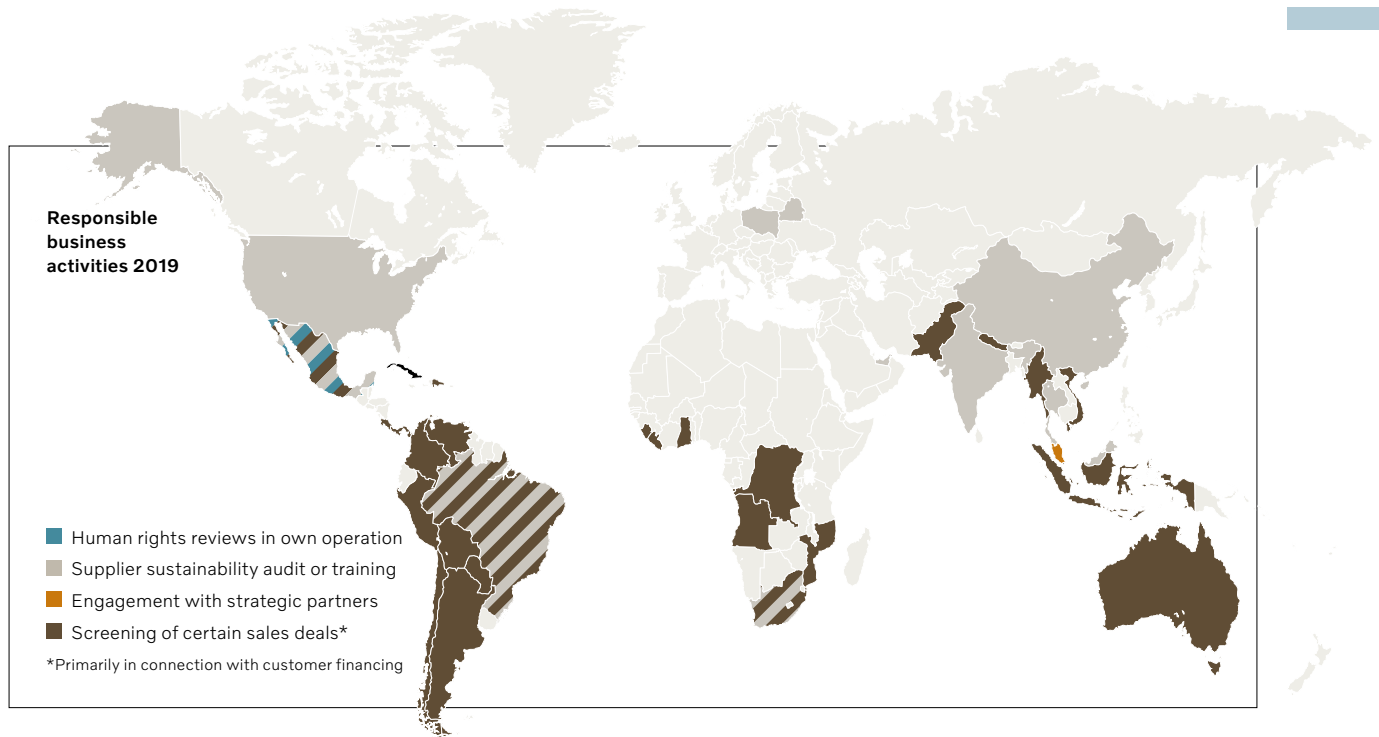
Our human rights reviews covers our own operations and aims to identify actual and potential adverse human rights impacts on employees, consultants and onsite service providers. This involves desktop review of country and sector human rights risks, self-assessments and in-person workshops with the local management and human resources country committee, in-person discussions with employees, onsite service providers and their employees, union representatives and also, if relevant, potential in-person discussions with other stakeholders. It is adapted to reflect the needs of the country being reviewed. The findings of each country-level human rights review are communicated to relevant members of our Executive Board. Following each human rights review, action plans for identified improvement areas are created with clear ownership and anchoring within the local management. We strive to align our human rights review methodology with the UN Guiding Principles on Business and Human Rights while also taking into account Volvo Group's global and local operating structures.

So far, we have performed human rights reviews in Germany and India (2017), South Africa (2018), and in 2019 concluded the human rights review covering our operations in Mexico. The findings and opportunities for improvement in Mexico are related to freedom of association, health and safety, working hours in relation to breaks and vacation, and risk of discrimination in recruitment due to favoritism. We also identified the need to strengthen awareness and trust in our current grievance channels. Mitigation actions related to these findings are anchored within the local management in Mexico and the progress of implementation is reviewed regularly.

### Human rights due-diligence in the supply chain

We launched an updated Supplier Code of Conduct in 2019. It outlines the Volvo Group's minimum requirements and aspirations for all our suppliers in the areas of human rights and working conditions, health and safety, responsible sourcing of raw materials, Environmental performance and business ethics.

In 2018, we identified a need for improvement actions concerning some of our onsite service providers' employment of foreign migrant workers in Malaysia. As a result, we have reviewed and strengthened internal procedures and contractual terms for onsite service providers there, and are monitoring the implementation of proposed actions of these service providers. We continued to perform supplier sustainability audits both at current and potential future suppliers as part of the selection process and in 2019, these



audits were performed in Belarus, China, India, Malaysia, Mexico, South Africa, Thailand, United Arab Emirates and USA covering 55 suppliers. The main findings from these audits related to health and safety, working hours and sustainability communication towards suppliers. We also continued capacity building and training of suppliers. In 2019, suppliers in Brazil, Malaysia, Mexico, Poland and South Africa were trained on topics covering human rights, environmental performance and business ethics. The training was provided by the organization CSR Europe in connection with our partnership in DRIVE Sustainability. We continued developing and implementing a Sustainable Minerals program, which focuses on the minerals tin, tungsten, tantalum, gold, and cobalt. Read more about supply chain sustainability on page 55.

#### Building human rights capacity of strategic business partners

In addition to our owned manufacturing operations, the Volvo Group collaborates with private business partners to assemble trucks in certain locations in Africa and Asia. We also work with a number of bus body builders around the world that build bus bodies on our chassis in line with customer requirements. In 2019, we performed an on-site review and dialogue focusing on employment conditions of workers at our truck assembly partners in Malaysia. We identified development areas related to employment of foreign migrant workers. Our business partners have initiated action plans and at the same time, we are also considering how to strengthen our contractual terms and overall due-diligence on corporate responsibility and human rights at truck assembly partners and bus body builders.

#### Human rights screenings of sales deals

We screen certain sales deals for risks related to human rights, environmental factors, and business ethics beyond compliance. These screenings are primarily performed in connection with involvement of the Swedish Export Credit Agency (EKN), other export credit agencies or certain private insurance companies for guarantees on customer financing. Volvo Trucks, Renault Trucks, Volvo CE and

Volvo Buses screened approximately 170 (105) sales deals in 2019. We identified issues related to potential adverse impacts on the environment and local communities, poor employment conditions, occupational health and safety and unethical business behavior in some of these screenings. Sales deals with identified risks are typically escalated within the respective business areas or at the Group-level for further consideration and action. We often discuss and engage with the respective customers in order to clarify and mitigate identified issues.

We also perform risk assessments from compliance, legal and corporate responsibility perspectives in selected governmental and other high-risk sales deals taking into account country of use, end-user, and intended end-use. In 2019, we initiated the strengthening of internal procedures on sales to high risk customers in conflict affected areas. As a consequence of stakeholder concerns in 2018 surrounding the sale and use of mining equipment in Myanmar, Volvo CE worked together with an external human rights expert organization to identify and assess human rights risks in relation to sales to Myanmar. Based on this and our own continuous improvement work, we are working on strengthening our screening of selected sales deals and providing relevant additional trainings for our employees and dealers. We will consider the outcomes from this work in the larger context of our overall responsible sales program. See the Retail and Service section on page 61 for a description of our overall approach on responsible sales.

#### Grievance channels and access to remedy

Our employees and external stakeholders are able to report, to the extent permitted by local laws, any instances of human rights violations in connection with the Volvo Group or breach of our Code of Conduct through our internal and public grievance channels. See page 40 for more information on our grievance channels and the types of concerns reported in 2019. ■



## CUSTOMERS



# OUR CUSTOMERS' SUCCESS IS OUR SUCCESS



Climate change, a growing urban population and technology shifts will transform society and our customer segments at various extent and speed. Our challenge is to be agile to market trends and meet customer needs both today and tomorrow on a global and local scale. The transition to a lower carbon society is driving emissions regulations as well as innovations for sustainable solutions.

**W**e strive to be the most desired and successful transport solution provider in the world. Therefore the customer is integrated in every part of our value chain. Our customers contribute to prosperity by transporting people and goods as well as providing societies with infrastructure that advance development. We support our customers by providing offers that increase their productivity, secure uptime and increase fuel efficiency, which drive their bottom-line performance.

## Customer focus

Throughout our value chain our customer focus is central. For product development this means developing productive and fuel-efficient solutions for our customers. In production we strive to have the highest quality, which also requires a high standard from our suppliers. Our distribution and service network secures availability and uptime for the customers. We use a circular mindset and adopt responsible business behavior to build trust and make sure our products contribute to prosperity.

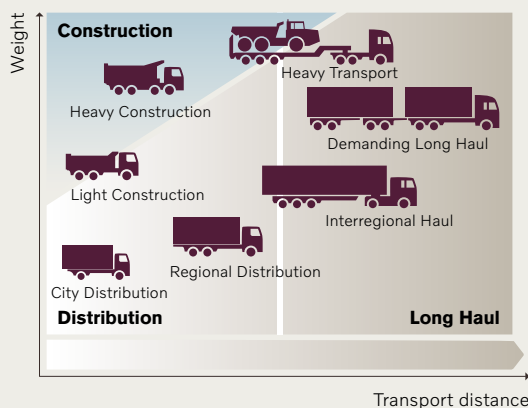
We analyze the segments and applications our customers operate in to find the best current solutions, capture future opportunities and prepare for market changes. Our research projects, in collaboration with our customers and other partners, are a vital part of product development when we prepare for meeting future demands.

## IN BRIEF

- Approximately 2.1 million trucks and 100,000 buses, which the Group manufactured in the past 10 years, serve on roads worldwide.
- Our construction machines operate at construction sites all over the world. We have delivered about 600,000 units of construction equipment in the last 10 years.
- The Electric Site research project resulted in a total reduction of: Energy cost 70%, Carbon emissions 98% and operator cost 40%.
- Driver training can help to reduce fuel consumption by 10%.
- In the US over 70% of all freight tonnage is moved by trucks. In the EU roughly 50%.\*
- Road freight transport directly creates 6.5 million jobs in the EU and nearly 9 million jobs in the US.\*

\*Source: ec.europa.eu, iru.org, trucking.org

## Truck applications



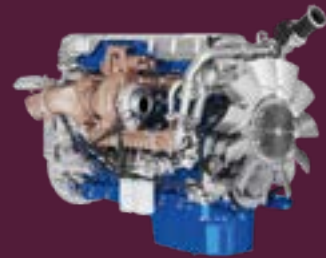
The Volvo Group offers trucks adapted to a wide variety of applications – from city distribution to construction work, long haul and heavy transport.



#### EFFICIENT FUEL-SAVING

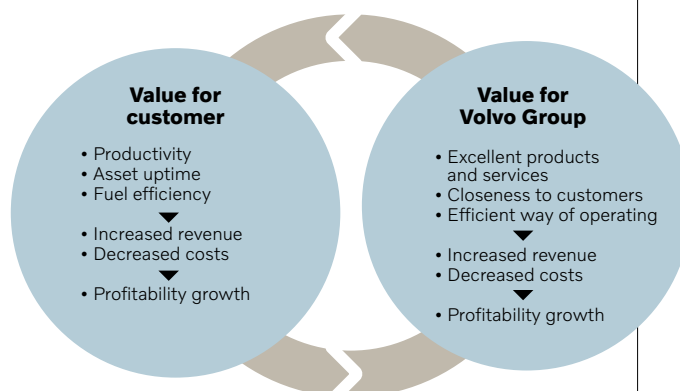


The Volvo FH with I-Save is Volvo Trucks' solution to provide leading fuel efficiency for haulage companies in the long-haul segment. By combining the new D13TC engine with updated fuel-saving features, fuel costs can be cut by up to 7% – without compromising drivability. The background is the growing demand for transportation across Europe, with trucks covering increasingly longer distances. At the same time, transport operators are faced with rising diesel prices putting pressure on profitability. Volvo FH with I-Save has been available in European markets since March 2019.



## VALUE CO-CREATION

**To be successful** the key is to create value for our customers by contributing to improving their bottom line profitability. By understanding our customers' priorities and challenges, we are able to provide products and services that grow customers' revenues and decrease customers' cost. Key areas to create value for our customers are offers that increase our customers' productivity, secure uptime and increase fuel efficiency. By delivering customer value efficiently, we will also deliver value for ourselves, our owners and society.



### Create value for our customers

From interviews with customers, through our customer satisfaction surveys and materiality analysis, we conclude that our customers put the highest value on productivity, uptime and fuel efficiency.

- Future technologies provide great potential for increased productivity for our customers. During 2019 the Volvo Group presented a number of automated, electric and connected vehicles and concepts. For instance, in 2019, both Volvo Trucks and Renault Trucks started selling electric medium-duty trucks for city transports and refuse operations. Read more about our work within electrification, automation and connectivity starting on page 20.
- Uptime is crucial for our customers. To secure uptime, new vehicles developed within the Volvo Group are equipped with connected devices to schedule services and prevent unplanned stops. More than 1 million vehicles are connected, which is the largest number of connected vehicles in our industry.
- Increased fuel efficiency and adaption to renewable fuels and electrified vehicles and machines are central in our product

development since this has a major impact on the environment and our customers' bottom line. For instance, we offer vehicles with the capability to run on liquefied natural gas (LNG) or bio-gas. In 2019, Volvo Trucks began delivering trucks with the I-Save fuel-saving feature in Europe, that can cut fuel costs by 7%, see page 45. In North America, the next generation of turbo compound engines were introduced, providing a further 3% improvement in fuel-efficiency compared with the previous generation.

### Measure success

Customer satisfaction is the true measure of success. Our aspiration is to have leading customer satisfaction for all brands in their segments. Through world-wide surveys, each brand organization within the Volvo Group tracks customer satisfaction and brand image perception. The data is an important part of understanding our customers' needs and continuous improvement. Research and studies are performed by leading market research companies and carried out with decision makers among customers and non-customers. ■

### FUTURE TECHNICIANS IN ZAMBIA

## TRAINING CUSTOMERS' FUTURE TECHNICIANS

Trained and skilled technicians and drivers are crucial for the Volvo Group's customers to maintain safe and efficient operations. In October, we inaugurated the second phase of the Nortec vocational school in Zambia's copper mining region. This is one of the schools around the world supported by the Volvo Group. In this case, the Volvo Group contributes with training of trainers, hardware and development of curriculum for the school to run effective theoretic and practical education. By concentrating on vocational training, the Volvo Group can stimulate economic growth and help reduce unemployment, while remedying the scarcity of trained mechanics and technicians.





## DIFFERENT TRUCKS FOR DIFFERENT APPLICATIONS

### DISTRIBUTION

FRANCE



### MINING

INDONESIA



### CONSTRUCTION

USA



### LONG-HAULAGE

EUROPE



Customers have different cost structures and therefore want different offers depending on their location and the type of transport work they carry out. Creating customer value by improving our customers' profitability therefore means offering products developed for each market and application.

#### COSTS

- Fuel
- Driver
- Vehicle
- Repair & maintenance
- Administration

## PRODUCT DEVELOPMENT



# INVESTING TODAY TO BE SUCCESSFUL ALSO TOMORROW



Product development is influenced by customers' needs, legislation, changes in society and new technologies. There are strong trends such as automation, electromobility and connectivity that need to be balanced with investments in development of current technologies.

**A**ll the Volvo Group's product development is based on the future needs of our customers. We will offer products and services that help them support their customers with the most efficient transport solutions. The working environment for drivers and operators shall be pleasant and safe and our products fuel-efficient with high productivity while fulfilling all requirements on emissions, safety, data protection and more.

New technology areas such as automated driving, electric vehicles and connectivity will reshape both our industry and the society we live in. At the same time, a number of countries have introduced regulations on CO<sub>2</sub> emissions entailing substantial fuel-efficiency improvements. Taken together, this means that there is a need to increase our research and development (R&D) efforts. In 2019 investments in R&D amounted to SEK 18.5 billion and that number is expected to increase in the next few years. During the year, the Volvo Group hired some 1,000 new employees within R&D, strengthening our capabilities in areas such as software development, artificial intelligence and battery technology.

However, it is not only important to have the right resources, but we must also balance our investments between what may be called well-known technologies and the new technologies. Our engineers need to continue to innovate and develop the well-known technologies to make engines and transmissions more fuel-efficient with lower emissions, further reduce the weight of the vehicles, make them more aerodynamic and to ensure that the cabs are further adapted to the needs and demands of drivers and operators. Innovative ideas are just as important in well-known technologies as they are in new technologies, and we firmly believe that there is still huge potential for improving the well-known technologies.

In parallel we have increased our efforts in areas like automation, electromobility and connectivity. Each one of these areas has a substantial impact on the mobility of goods and people and when they converge, they have the potential to radically transform the transport industry.

## FACTS

- In 2019, research and development expenses amounted to SEK 18.5 (15.9) billion, 4.3% (4.1) of Group net sales.
- Around 95% of the environmental impact from a truck occurs during the use phase. Therefore sustainable solutions are an integral part of our product development.
- In 25 years the fuel consumption of a 40 ton truck has been reduced by 19% and NO<sub>x</sub> emissions by 98%.
- The Volvo Group's safety ambition is zero accidents involving our vehicles and equipment.

## Global Development Centers



## Partnerships to find the best solutions

We also need to work more in partnerships with other companies, universities and suppliers to find the best solutions for the future. During the year we signed an agreement with NVIDIA to jointly develop the decision making system of autonomous commercial vehicles and machines (please see page 26 for more information) and entered into a strategic alliance with Samsung SDI to develop battery packs for Volvo Group's electric trucks (please see page 20 for more information). In March, Telia, Ericsson and Volvo Construction Equipment (Volvo CE) launched Sweden's first 5G network for industrial use at Volvo CE's facility in Eskilstuna. Volvo CE uses the 5G technology to test remote-controlled machines and autonomous solutions. Furthermore, we need to work even more integrated with our customers to ensure that the features we develop are useful for them and that we can work together to develop the new business models needed.

### Increasing fuel efficiency and alternative fuels and drivelines

In order to be able to fulfill the upcoming CO<sub>2</sub> requirements in for instance the EU and the US, improved diesel engine trucks as well as electric trucks will play an important role.

There has been a continual improvement in the performance of the diesel engine. We performed a fuel consumption and nitrogen oxide (NO<sub>x</sub>) emission test between two typical European long-haul tractors, a Volvo FH from 2016 and a Volvo F12 from 1991. Both trucks were simultaneously measured on an open road during normal traffic situations, pulling similar semi-trailers loaded to 40 tons total weight. The test route was driven four times during the same day. The measurements, from preparation to final evaluation, were witnessed, reviewed and approved by an independent third party. The measurements showed that the new Volvo FH has reduced fuel consumption by 19% and NO<sub>x</sub> emissions by 98% compared to the Volvo F12 from 1991.

In 2019, further fuel-efficiency steps were taken. In North America, Volvo Trucks and Mack Trucks introduced the next generation turbo compound technology, providing up to an additional 3% improvement in fuel efficiency over the current 13-liter turbo compound engine. And in Europe, Volvo Trucks introduced Volvo FH with I-Save, a solution that can cut fuel costs by up to 7% in long-haul operations – without compromising drivability (please see page 45).

We acknowledge that there is no single fuel that can meet all needs. Conventional diesel fuel, with increasing renewable or synthetic content, will likely remain the dominant fuel for most types of commercial transport for years to come in most markets. Today, the Volvo Group offers vehicles with the possibility to use alternative fuels such as biodiesel, hydrotreated vegetable oils (HVO), natural gas and biogas. The biggest challenge for the large scale adoption of alternative fuels is not compatibility or emissions, but the lack of adequate supply and infrastructure as well as clear tax rules.

### COMMON ARCHITECTURE AND SHARED TECHNOLOGY



## LEVERAGING SYNERGIES

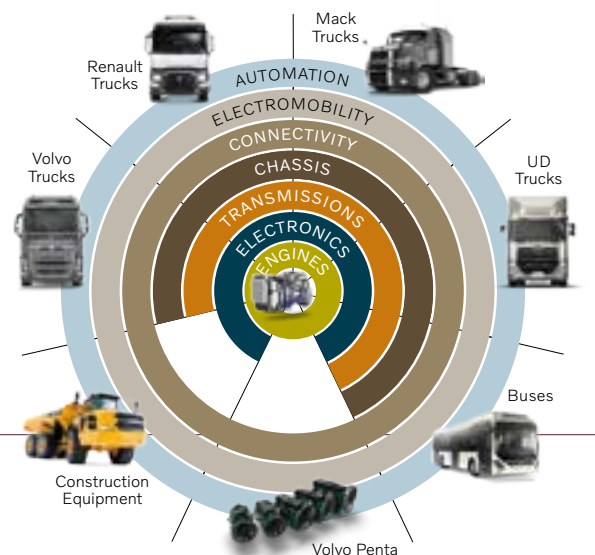
With a number of brands in different product segments, we strive to find synergies to reduce product and product development costs, while simultaneously securing brand-unique solutions. Volvo Group is now leveraging more than 15 years of work to create a modular system, and we have come a long way. We call the system CAST – Common Architecture and Shared Technology. The base engines we develop are shared by our trucks, construction equipment, buses and marine and industrial engines, while electric systems and transmissions are shared by most product segments and chassis components by all our truck brands and buses, to give a few examples. We continue to build on this approach for the new technologies: automation, electromobility and connectivity. Instead of reinventing the wheel with every new

### Progressing electromobility

There are several reasons why electric vehicles are now emerging in the transport industry with an ever improving business case for customers.

- An electric motor is highly energy-efficient.
- Battery capacity is increasing and prices are decreasing.
- Provided that the electricity has been produced from non-fossil sources, electric propulsion reduces emissions of CO<sub>2</sub>.
- There are no local emissions of nitrogen oxides and particulates, and the electric motor is quiet.

We believe that electrification will fundamentally change the way we look at city planning. It opens up for indoor bus stops at hospitals or shopping malls. Electric vehicles will also enable better use of the infrastructure, especially in cities. Today, roads and streets are mostly used during rush hours and daytime. The noise from diesel vehicles makes it hard to distribute goods or do constructions work at night, but with electric vehicles being quieter, the infrastructure could be used at night for some purposes.



product, we use as much common technology as possible, for the benefit of both our customers and the Volvo Group.

The efficiency gains generated by our consistent work with commonality are not confined to product development, they can also be seen in our supplier structure, industrial system, sales and, not least, service organization. At the same time, it is important to ensure that each product in the modular system is adapted to what customers expect from each brand and product segment, as well as local demands and requirements. Therefore we have a global product development system with engineering resources in different parts of the world, close to customers, to ensure that every product delivers the unique brand value that customers expect.





More and more cities are investing in electric public transport systems. As far back as 2010, Volvo Buses took the decision to offer low-floor city buses only as hybrids on the European market. Volvo Buses now offers an entire range of electrified city buses, including hybrids, electric hybrids and all-electric buses. Volvo Buses has sold more than 4,400 Volvo branded electrified buses worldwide since the start in 2010. The Volvo Group benefits greatly from being early in the development of electrified solutions for buses. The technology is now also used for all other areas in the Group. During the year Volvo Trucks and Renault Trucks started sales of trucks for city distribution and refuse handling and Mack Trucks, Volvo CE and Volvo Penta presented electrified concepts with commercializing within short.

The next step is the electrification of trucks for construction and regional-haul operations. During the year Volvo Trucks presented such concepts trucks both in Europe and the US. The all-electric Volvo VNR regional-haul truck will be tested in California during 2020 and the same year sales will start.

Volvo Trucks also presented electric heavy-duty concept trucks for regional distribution and construction transport.

For long-haul operations it will take longer, not least because it will take time to increase battery capacity, reduce charging times and build up the charging infrastructure operators need. Combustion engine technology will therefore be needed for many years to come in these applications. However, the total cost of ownership for electric trucks is coming down, making them a viable option in many applications within a few years.

The Volvo Group's electric vehicles are powered by batteries, but in the future there may be applications where fuel cells are a viable

option. In the long term, a dynamic supply of electricity from the road could potentially also power long-haul trucks. Read more about the Volvo Group's progress within electromobility on page 20.

### Connectivity presents new opportunities

When it comes to connectivity, or the digitization of vehicles, Volvo Group was the first in the commercial vehicles business to offer telematics solutions back in 1994. Today, we have a broad customer offering of connected solutions for trucks, buses and construction equipment. With more than 1,000,000 connected vehicles and engines surpassed in 2019, we have the largest number of connected assets in the industry.

Today's connected solutions help our customers to lower their costs through fleet optimization, increased load factor and thus lower fuel consumption. Connectivity also helps raise their productivity and profitability through improved uptime. Uptime means avoiding unplanned stops, which we can help our customers achieve by monitoring vehicles and predicting when they will need maintenance, assigning a technician and scheduling a visit to the service station at a time when the truck is not operational. In many markets we use remote programming services, making it possible to wirelessly download different software updates wherever the truck is. Connectivity also has the potential to increase transport and resource efficiency through optimized traffic flows and higher utilization of existing infrastructure, as well as new business models for logistics.

Safety is another area that benefits from new connected solutions where vehicles are connected to each other and to infrastructure. Read more about the Volvo Group's progress in connectivity on page 28.

## VOLVO TECHNOLOGY AWARD



### ELECTRIC SITE THE WINNER

The Volvo Technology Award is a mark of recognition for outstanding technical advances that contribute to the enhancement of the Volvo Group's high-tech competitiveness and technological expertise. In 2019, Volvo CE's Electric Site won the Award. The project, which ran for more than ten weeks in late 2018, was a partnership between Volvo CE, Skanska Sweden, the Swedish Energy Agency and two Swedish universities – Linköping University and Mälardalen University. For more on Electric Site, please see page 27.

The winners are Marcus Broberg, David Dujmovic, Bobbie Frank, Peter Johansson, Chongchul Kim, Marcus Kreku, Joakim Lundin, Uwe Müller, Albin Nilsson, Markus Rombach, David Rylander, Ted Samuelsson, Johan Sjöberg, Mikael Skantz, Erik Uhlin, Joakim Unneback and Jimmie Wiklander.



### Automation benefits customers and society

We believe that automation will redefine the commercial transport solutions that most of us rely on every day. Automation will create real-life benefits for both our customers and society in terms of productivity, safety and energy efficiency. However, automation is nothing new. Automated gearboxes and cruise control, to name a few, are functions that have been part of our commercial offer for several years, supporting drivers in their everyday work. With the exponential increase of microprocessor capacity, however, it is now possible to take automation much further.

There are different levels of automation throughout the vehicle industry – from no automation to self-driving vehicles without the need for a driver or operator. Since the ideal level of automation is determined by its added value for customers and society, Volvo Group will offer new automated solutions at different levels. We believe that there will be drivers and operators in our vehicles in most applications for the foreseeable future, but self-driving commercial vehicles in specific applications are fast becoming a reality in confined and semi-confined areas like mines, quarries and ports. For more complex environments, such as city traffic and mixed traffic at higher speeds, we believe that it will take significantly longer time before this is possible.

We have come a long way in terms of technology development, but more R&D is needed. Together with authorities, we in the industry need to further develop and agree on standards and regulations, liability issues and cyber security to fully utilize all possible automated features of the future. Read more about the Volvo Group's progress in automation on page 24.

### Safety is a prerequisite

The Volvo Group's safety ambition is zero accidents involving our vehicles and equipment. Road traffic and worksite safety are global challenges for the Volvo Group. Safety is about reducing the risk of accidents and mitigating the impact of any incidents that do occur. Safety is therefore an integral part of product development. The Volvo Group's in-house Accident Research Team has been investigating accidents involving heavy-duty trucks for 50 years. Combining accident data analysis with the Group's own research and test programs, provides solid insights into the causes of accidents and injuries. This is important input for developing even safer products for our customers.

Volvo Group has pioneered a variety of driver assistance systems, including Driver Alert Support and Lane Changing Support, which enhance awareness and alert the driver before a situation turns critical. The Collision Warning with Emergency Brake system is another sophisticated system, which offers market-leading emergency braking capabilities. There are also automated safety systems such as Lane Keeping Assist and Stability Assist. The rapid development within the automation area will make it possible for us to offer even more sophisticated driver assistance systems in the coming years. ■

## PROMOTING SUSTAINABILITY



### CONSTRUCTION CLIMATE CHALLENGE

The Construction Climate Challenge (CCC) is an initiative hosted by Volvo CE to promote sustainability throughout the entire construction industry value chain and provide funding for environmental research. CCC is a part of the Volvo CE commitment to WWF's Climate Savers Program (see page 35). In addition, Volvo CE is a Corporate Advisory Board member of the World Green Building Council.

During 2019, two research programs financed by CCC were published, both focusing on decarbonizing infrastructure projects – please read more on [constructionclimatechallenge.com](https://www.constructionclimatechallenge.com).

Volvo CE has also seen positive development on the electrification and reduced climate impact of quarries. At the research test site, Electric Site, CO<sub>2</sub> emissions were cut by 98%. During 2019, we have now moved ahead with a commercial pilot project, read more on page 27.



## EMISSIONS REGULATIONS FOR HEAVY-DUTY VEHICLES

**T**he last decades, regulators in Europe, the US and Japan have progressively implemented stricter emissions standards for new heavy-duty engines for trucks and buses. China is also emerging with its new CN VI regulation for 2020 and 2023, which is even surpassing the EU regulation in stringency in some areas, including demands on remote or telematics transmission of engine and nitrogen oxide (NO<sub>x</sub>) data. In spite of great progress, particularly related to lower levels of NO<sub>x</sub> and particulate matters (PM), problems with air pollution and climate change remain. A common trend globally for regulators going forward is more focus on actual 'engine in vehicle' performance in use instead of generic engine testing in a test cell. The Volvo Group supports this direction. The Euro VI regulation implemented 2013 has clearly shown that testing with portable emission measurement systems (PEMS) can be a very effective way to reduce real driving emissions during all conditions. The emissions regulation for passenger cars has now been updated in the same direction. We actively follow developments to ensure adherence by developing engines that meet all legal requirements.

### Europe

For non-road engines in EU, the Stage V regulation was introduced 2019. The main changes compared to Stage IV relate to particulate matters. The new requirements are set at a performance level achieved with particulate filters.

The emissions regulation for on-road vehicles was also updated with a Euro VI step D fully implemented in 2019. The main updates concern the in-service conformity testing with PEMS where the limits regarding payload and power have been changed to include low load duty cycles in a better way. A fifth update of the Euro VI regulation since the introduction, step E is decided and will include cold start emissions and PM number measurements for the PEMS on-road measurements when fully implemented 2022. The EU Commission has also started to develop a post- Euro VI regulation. A draft regulation is expected to be ready 2021.

As a first step in regulating carbon dioxide (CO<sub>2</sub>) emissions from heavy-duty vehicles, a declaration of CO<sub>2</sub> emissions and fuel consumption for new heavy-duty trucks was started in the beginning of 2019. The regulation has been developed by the EU Commission with broad support from the Volvo Group and the industry via the European Automobile Manufacturers' Association (ACEA). The certified CO<sub>2</sub> declaration is the most advanced in the world and is based on certified measurements of components and calculations of complete vehicle CO<sub>2</sub> emissions. The system gives customers a possibility to compare CO<sub>2</sub> emissions of different product offerings and

specifications. This will even further strengthen and support the market forces regarding CO<sub>2</sub> and fuel consumption.

The second step is a CO<sub>2</sub> reporting and monitoring regulation starting 2020, allowing the EU Commission to annually follow the progress of all new trucks and implement further actions if needed.

As a third step, a regulation setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles has been published by the EU Commission. According to the decision, the average annual CO<sub>2</sub> emissions of the Union's fleet of new heavy-duty vehicles is to be reduced by 15% year 2025 compared to the reference being the 2019 CO<sub>2</sub> monitoring data. From 2030 onwards the reduction is to be at least 30% compared to 2019.

The CO<sub>2</sub> regulation will drive the introduction of a broader scope of powertrain technologies and fuels, technologies that are not fully covered in the current Euro VI regulation. This will require an updated Euro VI regulation, to be aligned with the CO<sub>2</sub> regulation. There is also a planned review of the complete CO<sub>2</sub> emission performance standard 2022 which includes several aspects influencing the effectiveness of the standard, as well as the reduction target for 2030 and new targets for 2035 and 2040.

### USA

In the US, the EPA (Environmental Protection Agency) and NHTSA (National Highway Traffic Safety Administration) have decided the US Greenhouse Gas (GHG) regulation phase II final rule that will start 2021. It includes separate regulations for engines and vehicles, but also a new separate trailer regulation that started already 2018. One main difference from the current regulation is that the vehicle regulation in phase II includes the actual engine performance of the vehicle instead of a generic engine model. All limit values for engines and vehicles have been updated. The level of stringency will according to the EPA increase by up to 27% between year 2017 and 2027.

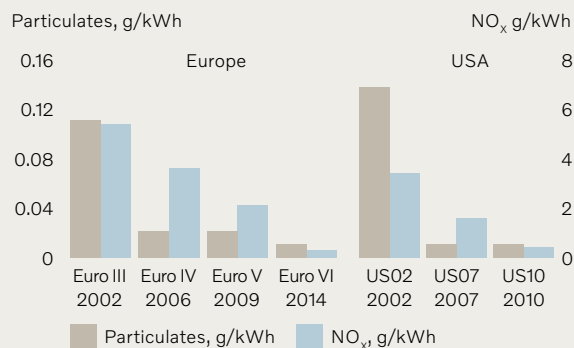
Regarding air pollutants, California Air Resources Board (CARB) has adopted optional low NO<sub>x</sub> certification standards for on-road heavy-duty engines. The emissions levels are reduced by up to 90% compared to the current federal NO<sub>x</sub> levels.

### Local initiatives

On top of these regulations there are other local initiatives where cities around the world set more stringent regulations to improve air quality in cities. One example is the commitment from Paris, Mexico City, Madrid and Athens made at the C40 Mayors Summit to remove diesel vehicles from their cities by 2025. C40 is a network of the world's megacities committed to addressing climate change. ■



## EMISSIONS STANDARDS



Emissions legislations vary for different regions. In some regions the implementation of stricter rules is hindered by insufficient availability of good fuel quality and low sulfur content. In many parts of the world the emissions legislations are based on EU and US legislation. In 2010 US10 was implemented in North America and at the end of 2013 Euro VI was introduced in the EU. With the implementation of US10, emissions levels for particulates (PM) and nitrogen oxides (NO<sub>x</sub>) have decreased substantially. Euro VI entails that emissions of NO<sub>x</sub> and PM particulate matter are reduced by more than 95% compared to a truck from the early 1990s.

- a US Greenhouse gas standard phase I.
- b The first step in CN VI will be implemented in 2020.
- c Japan Fuel Efficiency targets 2015.
- d In addition to Euro 5 and US07, there is also NLT in Australia.
- e India moves to BS VI (stage 1) in 2020.

## PURCHASING



# PERFORM AND TRANSFORM WITH SUPPLY CHAIN PARTNERS



Together with our supply chain partners we are facing a paradigm shift in the transport industry. Change is coming faster with shorter development cycles than ever seen before. To remain competitive in all areas in a sustainable way, we need to collaborate and co-create, and how we do that has changed a great deal. 2019 marked the year when choice of strategic partnerships were of utmost importance.

**T**he Volvo Group is aiming for purchasing excellence, placing high demands on ourselves and our supply chain partners. Our aspirations is to have industry-leading customer satisfaction for all brands in the Volvo Group. That requires high-performance relationships both within well-known technologies, such as combustion engine technology, as well as new technologies, such as Automation, Connectivity and Electromobility.

The Volvo Group is continuously working towards optimizing its supplier base and geographical footprint. An optimized global footprint will reduce lead-time for our customers and actively reduce our CO<sub>2</sub> footprint. We aim to secure outstanding quality and technology at the best possible commercial offer when we purchase any product, service or solution. We work to actively secure purchasing synergies. This drives efficiency and continuous improvement.

## Supply chain development

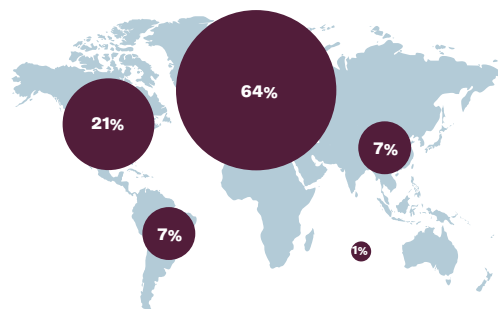
In 2019, the Volvo Group bought goods and services for SEK 299.6 (270.3) billion and 2.5 billion parts were delivered to our over 40 major production plants around the world. Multiple sourcing meets the demands for locally produced content and reduces the impact of trade tariffs, but it also reduces supply chain risks. Reduction of long-distance transports are increasingly relevant, as it can contribute to a significant reduced environmental impact.

The initiatives taken in 2018 to improve and secure capacity management as well as volume planning, were fully paying out in 2019. We brought the delivery situation back to normal levels in Europe and North America already in the first half of 2019. In the second half of the year we started to switch focus, from delivery to cost. In parallel, the shift from well-known to new technologies requires more research and development activities in the supply chain. Through active and close collaboration with our supply chain partners, we build and secure a base to stay relevant also in the future.

## FACTS

- In 2019, the Volvo Group made purchases of goods and services totaling SEK 299.6 billion.
- We have around 51,000 Tier 1 suppliers, of which about 6,000 supply automotive product components.
- During 2019, 92% of spend from automotive product suppliers were from approved sustainability self-assessed suppliers. In high risk countries the figure was 98%.

## Percentage of purchases by region



## Balancing people, planet and profit

We place high expectations on ourselves when it comes to responsibility and sustainability, and we require the same from our some 51,000 supply chain partners. Keeping this supply chain wheel turning around the globe 24/7, requires strong partnerships. We therefore put sustainability in everything we do with requirements and aspirations based on our Supplier Code of Conduct. During 2019, the commitment of Volvo Group Purchasing can be characterized by a new and strong foundation, an even stronger mindset on sustainability and increased industry collaboration.

By balancing the three aspects people, planet and profit, we have increased the dialogue, transparency and trust with our current and potential supply chain partners as well as other stakeholders. Sustainability is now an established key criteria in our sourcing selections, alongside quality, delivery, cost, features, technology and risk. Still, there is more to be done to increase transparency in global supply chains even further.

Our Sustainable Purchasing Program looks at specific high risks to people and the environment and revolves around the following parts:

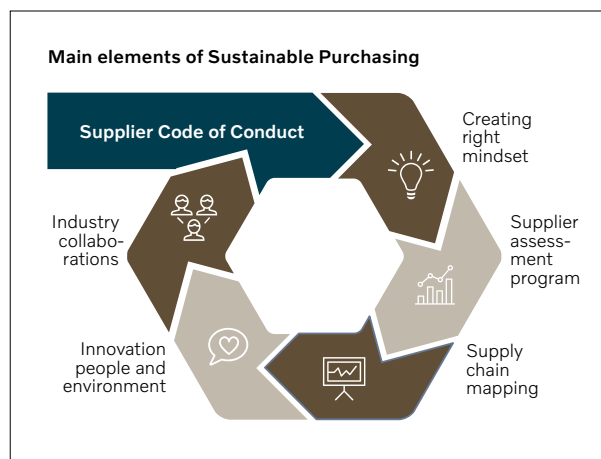
■ **Supplier Code of Conduct to create the right mindset.** All suppliers are expected to commit contractually to our new Volvo Group Supplier Code of Conduct, which was launched during 2019. This outlines our requirements as well as aspirations and encouragements towards all suppliers and is based on acknowledged global standards such as UN Global Compact's principles. It is the base for creating the right mindset and knowledge both internally and externally.

■ **The Supplier Sustainability Assessment Program** requires a basic evaluation of all our supply chain partners through a Sustainability Self-Assessment questionnaire, a tool developed by DRIVE Sustainability, see highlight below, with the target to have all our suppliers evaluated in the areas of human rights, business ethics and environmental performance. New supply chain partners in high-risk countries are furthermore assessed through an on-site audit with focus on working environment and labor practices. Audits of existing suppliers are made of selected suppliers in connection with the Human Rights reviews of our own operations and on an ad hoc basis if a specific need is identified. The most common deviations from the Code of Conduct found were related to occupational safety, working hours and communication of sustainability requirements towards sub-suppliers.

■ **Supply Chain Mapping** for identified segments and areas. One example is our Sustainable Minerals Program where we, with the help of the tools of the RMI (Responsible Minerals Initiative), perform supply chain mapping and human rights due-diligence of our supply chains for tin, tantalum, tungsten gold, cobalt and other materials.

■ **Innovation focusing on people and planet** includes internal trainings, mindset activities and best practice sharing events. The purpose is that sustainability shall drive innovation focusing on people and planet. We are driving a mindset towards circular economy, recycling and eco-design, and as well a more value driven approach for human rights. Volvo Group Purchasing continues to take an active role and part in the Volvo Group's overall human rights program, which aims to identify actual and potential human rights impacts on employees, consultants, onsite service providers and other parts of the value chain. During 2019, we have followed-up on the findings of previous years reviews. Read more about the human rights on page 42.

■ **Industry Collaboration** drives broader implementation. Two of the main networks where we collaborate for broader and more scalable sustainable development of global supply chains are DRIVE Sustainability focusing on supply chain sustainability of the automotive industry, and RMI, focusing on sustainable minerals sourcing. Read further below on this page. ■



## SUPPLIER SCREENINGS

.....  
New suppliers are screened for human rights, environment and business ethics. Those located in high risk areas are also required to be audited on-site.

**92%**

of spend 2019 came from sustainability self-assessed suppliers.

**55**

on-site sustainability audits in high risk countries.

### Collective action for sustainable materials

Responsible Minerals Initiative (RMI) is a collaborative platform addressing responsible mineral sourcing issues in global supply chains. Volvo Group is working with RMI with the aim to ensure responsible and sustainable sourcing of tin, tantalum, tungsten and gold (the so-called Conflict Minerals), as well as cobalt. Through RMI, participants develop and get access to tools and resources to improve regulatory compliance and support responsible sourcing of minerals from conflict-affected and high-risk areas. Volvo Group has implemented the tools and guidelines developed by the RMI, such as reporting templates, with the aim to create supply chain transparency and RMI compliance of our suppliers in the affected supply chains. The next step is to establish a baseline that will allow us to build our Sustainable Materials roadmap. Compliance to our Sustainable Minerals program means that:

- The suppliers of our suppliers are on the RMI approved list and,
- Suppliers have their own due diligence program according to RMI standard.

### DRIVE Sustainability - Broad adoption of sustainable procurement via CSR Europe

DRIVE Sustainability seeks to build a common compliance platform and sustainable procurement within the automotive sector. Volvo is active in several working groups within the initiative to develop assessment questionnaires for suppliers (SAQ) and broaden awareness of sustainability topics in the industry and supply chain. The SAQ for suppliers has now been translated and made available in 13 different languages. In 2019, 92% of the total spend was sourced from sustainability self-assessed suppliers.



## PRODUCTION &amp; LOGISTICS



# WELL-POSITIONED TO MEET CURRENT AND FUTURE DEMANDS



Digitization and automation are major trends influencing how we set up our manufacturing for the future. We are working to understand the challenges and prepare our facilities and employees for the changes and investing in modern production equipment.

**T**o secure robust profitability and meet future demands, the Volvo Group has developed a mindset of continuous improvement as well as tools, processes and production systems that contribute to cost efficiency. We strive to meet customer expectations by focusing on quality, flexibility, lead times, delivery precision and availability of parts, while simultaneously working to ensure health, safety and well-being for our employees.

2019 was a year with high capacity utilization in our industrial system. The demand was strong for the Group's products in many markets. The material supply challenges characterizing the first quarter of 2019 were during the second half of the year managed and solved in collaboration within the Group and with supply chain partners.

## Factories and assembly plants to meet demand

Our industrial system consists of capital-intensive component factories as well as labor intensive assembly plants. The component factories supply the Group's needs on a global basis, whereas assembly plants, in most cases, are located close to end-markets to cater for local needs and specifications and shorter delivery time. Our industrial and logistics system is generally well invested with modern production equipment and adequate technical capacity.

All wholly-owned production facilities and distribution centers are third-party audited. We hold certificates as follows:

- ISO 9001 Quality management system: Approximately 95% of production facilities and 90% of distribution centers.
- ISO 14001 Environmental management system: Approximately 95% of production facilities and 90% of distribution centers.
- ISO 50001 Energy management system: Lehigh Valley, Hagerstown and New River Valley plants in the US and the Rugby distribution center in the UK.
- OHSAS 18001 or ISO 45001 Occupational health and safety management system: Approximately 30% of employees.

## FACTS

- The Volvo Group has wholly-owned factories in 18 countries around the world.
- Our industrial operations worldwide also include parts distribution centers and logistics centers.
- There are assembly plants operated by independent companies at 10 locations around the world.
- All the Volvo Group's wholly-owned production facilities have third-party audited quality certificates and 95% have environmental certificates.
- Our total energy use 2019 was 2,118 GWh whereof 48% was from renewable sources.

Deliveries	2019	2018
Trucks	232,769	226,490
Construction Equipment	86,885	82,564
Buses	9,731	8,426
Marine engines	18,135	20,006
Industrial engines	21,324	28,499

## New industrial technologies to meet future opportunities

People, products and ways of working are impacted by automation, electrification and connectivity. In our operations, we investigate, develop, test and implement new technologies and ways of working towards a more efficient industrial system in the future. Some of these developments are made in pilot plants, arenas used for cross functional interaction, co-development and cooperation across the company. It is a pre-commercial production system that employs new production technology based on physical parts and produces small volumes of new technology-based products, mainly for the purpose of learning, verifying and validating new technologies. In parallel, an essential part of the learning journey towards the future – considering the Production and Logistics environment – is people and leadership competence development.

Our operations run training with a wide curriculum on electrification. This has been deployed over the last years to engineers, workshop operators and other relevant professionals. Electrification means electric drives, but also new supply chains and systems with critical safety and regulations aspects.

In several plants, there are many initiatives to develop ways of working in the future industrial worker environment. The purpose is to be prepared and build required capabilities to meet the rapid development of emerging technologies and the new manufacturing landscape.

### Transforming for renewable energy

From a product life-cycle perspective, the main environmental impact connected to Volvo Group is the emissions during the use of sold products. However, the Group can also make significant improvements in the way the operations are managed and we deploy management systems to drive continuous improvements in all relevant aspects. Energy is one of the environmental topics where the Group has made significant improvements. The work can be summarized in two main areas:

1. Energy efficiency in operations
2. Increase utilization of renewable energy

### Energy efficiency

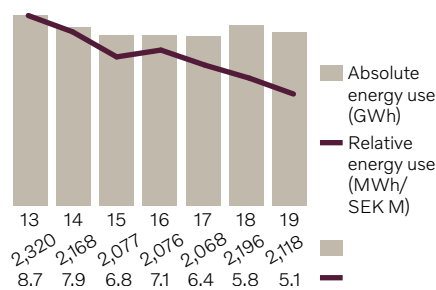
Every kWh reduced saves costs and emissions. The Volvo Group's ambition is to implement energy saving projects that together save 150 GWh per year between 2015-2020. At the end of 2019, more



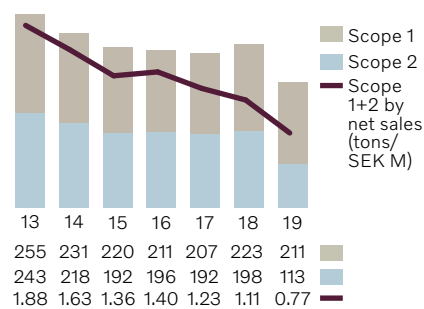
### PHASING OUT FOSSIL ENERGY FROM OPERATIONS WHERE POSSIBLE

● ● ●  
In 2019, Volvo Group has contracted new services for deliveries of renewable electricity. This has led to significantly reduced Scope 2 CO<sub>2</sub> emissions, mainly for the operations in the US. One of the more energy intensive sites to secure renewable energy contracts during the year was Hagerstown in Maryland, US. This, together with other initiatives, has led to 48% of energy now coming from renewable sources.

Energy use

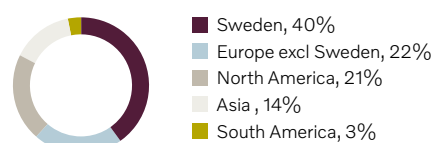


Scope 1 and 2 CO<sub>2</sub> emissions, kton CO<sub>2</sub>

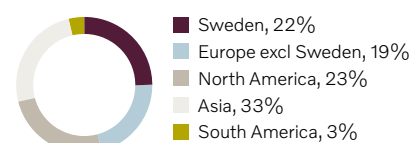


In order to more accurately reflect the actual emissions within Scope 2 and to recognize the emission reduction improvements, a change to Market Based Reporting has been implemented as from 2019. Where applicable, average grid emission factors have been changed to specific factors from the suppliers. As a reference, location based emissions would have given 191,000 tons instead of 113,000 tons.

Energy use per regions 2019



Scope 1 and 2 GHG emissions per region 2019



In line with the Greenhouse Gas Protocol, the Volvo Group reports market-based energy (contractual emission factors). The diagrams show both energy (MWh) and emissions (CO<sub>2</sub>).

than 1,000 energy saving projects have been implemented, resulting in an annual saving of 170 GWh. Our energy use in 2019 amounted to 2,118 GWh, which is a slight reduction from the previous year. At the same time, both production volumes and deliveries were higher compared to 2018. Our energy efficiency index, energy use per net sales, has been improved to 5.1 MWh/SEK M compared to 5.8 MWh/SEK M year over year, which is an improvement of 12%. Since 2015, this energy efficiency index has been improved by 25%.

### Greenhouse gas reporting

The Greenhouse Gas (GHG) Protocol is developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). It sets the global standard for how to measure, manage and report greenhouse gas emissions. According to the GHG Protocol Corporate Standard a company's GHG emissions are classified into three scopes.

**Scope 1** emissions are direct emissions from owned or controlled sources. **Scope 2** emissions are indirect emissions from the generation of purchased energy. All facilities using more than 2 GWh of energy annually are included in the reporting. In 2019, scope 1 and 2 emissions together amounted to 324,000 (421,000) tons of CO<sub>2</sub>. This is significantly lower than reported 2018 and is the result of higher energy efficiency and an increased share of purchased electricity from renewable sources. In addition, a transition to market-based reporting has been undertaken, which should be taken into consideration when comparing results.

**Scope 3** emissions are all indirect emissions that occur in the value chain of the reporting company. There are 15 factors in the scope 3 emissions. These occur outside the organization but are related to the organization's products, transports materials, leased assets etc. Emissions from when products are in use represents more than 95% of the Volvo Group's total carbon footprint.

Energy sources, GWh	2019	2018	2017
Electricity	998	1,031	981
District heating	187	186	170
Natural gas	551	574	538
Diesel	207	219	192
Other	175	186	187
<b>Total</b>	<b>2,118</b>	<b>2,196</b>	<b>2,068</b>

### WWF commitment

As part of the Group's commitment to the WWF Climate Savers program, we have a target to reduce product lifetime emissions by 40 million ton CO<sub>2</sub> 2015–2020. For 2015–2019, the aggregated savings were 34 million ton CO<sub>2</sub>.

As part of scope 3 emissions reporting, we also focus on carbon emissions from freight transport involved in the supply of materials and deliveries to customers. The target is to reduce CO<sub>2</sub> emissions from goods transports per produced unit by 20% by 2020, compared to baseline 2013. In 2019 Volvo Group reached a reduction of 18% CO<sub>2</sub> per produced unit. See page 35 for more information about our WWF Climate Savers commitment.

### Environmental policy and detailed performance

The Volvo Group's Environmental Policy provides overall direction on environmental management across the value chain. The Volvo Group manages a number of other environmental aspects and reports detailed management approach and data in accordance with GRI Standards.

The following information is disclosed in accordance with the Swedish Annual Accounts Act. In 2019 the Volvo Group had 12 licensed facilities in Sweden and there were no significant environmental incidents. For some facilities the environmental permits are under review due to planned changes. ■

## ALL IMPACTS MATTER



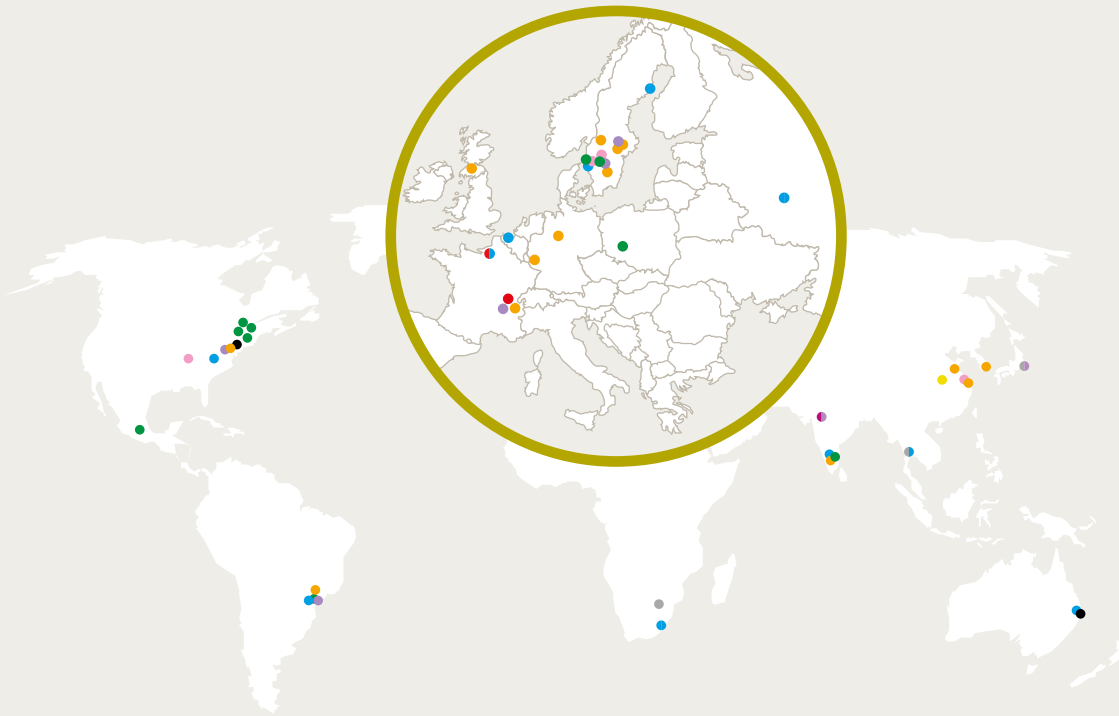
### REDUCING PACKING MATERIAL IN BRAZILIAN DISTRIBUTION CENTER

Every hour, Volvo's Central Distribution Center in Brazil receives thousands of parts from Brazilian and global suppliers. The demand for packaging handling is one of their significant environmental impacts. Using Kaizen methodology, the center has been able to improve its reuse and reduce with extraordinary savings since 2018 – reused 4,000 sheets of plastic bubble wraps, reduced 12 tons of cardboard by reusable spacer replacement and avoiding 1,000 tons of wood by reusing and repairing pallets and other wooden packaging material.





## MAJOR PRODUCTION FACILITIES



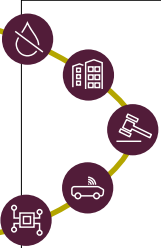
	North America	South America	Europe	Asia	Africa and Oceania
● Volvo Trucks	New River Valley (US)	Curitiba (BR)	Blainville (FR), Göteborg, Umeå (Cabs) (SE), Gent (BE), Kaluga (RU)	Bangalore (IN), Bangkok (TH)	Brisbane (AU), Durban (ZA)
● UD Trucks				Ageo (JP), Bangkok (TH)	Pretoria (ZA)
● Renault Trucks			Blainville, Bourg-en-Bresse (FR)		
● Mack Trucks	Lehigh Valley (US)				Brisbane (AU)
● Eicher*				Pithampur* (IN)	
● Dongfeng Trucks*				Shiyan* (CN)	
● Construction Equipment	Shippensburg (US)	Pederneiras (BR)	Arvika, Braås, Eskilstuna, Hallsberg (SE), Konz-Köhen, Hameln (DE), Belley (FR), Motherwell (UK)	Changwon (KR), Shanghai, Linyi* (CN), Bangalore (IN)	
● Buses	St Claire, St Eustache, St Francois du Lac (CA), Mexico City (MX), Plattsburgh (US)	Curitiba (BR)	Borås, Uddevalla (SE), Wrocław (PL)	Bangalore (IN),	
● Volvo Penta	Lexington (US)		Göteborg, Vara (SE)	Shanghai (CN)	
● Engines and transmissions	Hagerstown (US)	Curitiba (BR)	Köping, Skövde (SE), Vénissieux (FR)	Ageo (JP), Pithampur* (IN)	

\*Ownership ≥45%

## RETAIL &amp; SERVICE



# SUPPORTING CUSTOMERS WITH MAXIMUM UPTIME



The technological transformation is driving new business models and will require different skills in the future. This relates to both service personnel handling the products and sales staff guiding the customers towards the best solutions. Therefore we are focusing on dealer development programs and training support for our global dealer network to meet future challenges.

One of our strategic priorities is to establish brand-specific sales operations with a focus on retail excellence and a growing service business. The brand organizations within the Volvo Group support customers via efficient dealer workshops, and through service and maintenance agreements. With our service contracts and connected solutions, customers know when their vehicle or machine is due for service and what the cost will be for maintenance and repairs.

We work together with our retail organization through continuous improvement and dealer development programs to ensure our customers always get the best possible service. For instance, in 2019 Volvo Trucks introduced the Volvo Flexi-Gold Contract – a new usage-based service contract where monthly fees are broken down into fixed and variable parts (km-based) tailored to the vehicles' actual mileage. This means hauliers have greater flexibility to adapt their operations to market conditions and demand.

## Improved customer productivity

Our sales staff is trained to offer tailored solutions to maximize productivity and uptime for our customers. Connected solutions help our customers to lower costs through fleet optimization programs and driver support systems. Combining connectivity and data analytics is opening up new opportunities to support our customers.

Following the success with the North American Uptime Center, Volvo CE launched an EMEA Uptime Center in 2019, to become customers' number one choice for uptime in Europe, the Middle East and Africa. Uptime Centers monitor data transmitted by connected machines and identify areas where uptime and efficiency can be increased. The goal is to be proactive and provide solutions to problems before they happen. In fact, the majority of problems are things that are detected before the dealer or customer does. Case handlers alert dealers to machine error codes and alarms so that they can take immediate action on behalf of their customers,

## FACTS

- The Volvo Group's products are sold and distributed through wholly-owned and independent dealerships.
- More than 1 million Volvo Group vehicles and machines are connected via different telematics solutions.
- During 2019, the service business represented approximately 20% (20) of the Volvo Group's net sales.
- Financial Services provided financing solutions for 25% (24) of Group products in the markets where financing is offered.
- 90% of all distribution centers are certified with ISO 14001.
- Environmental product information, based on lifecycle assessment, is available for our products.

minimizing unplanned stops, reducing spending on fuel and maintenance and preventing future problems.

Results from North America speak for themselves:

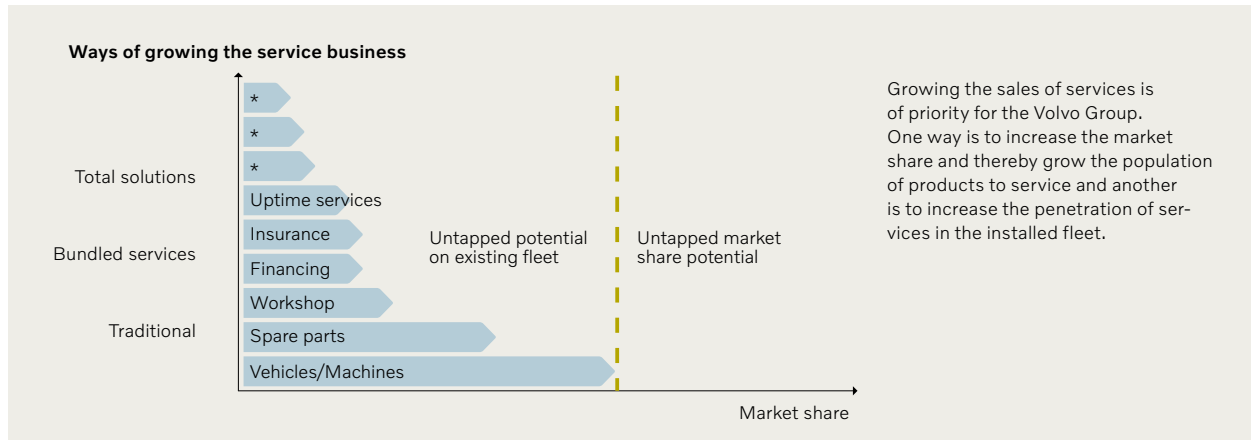
- Only 1% of units monitored by ActiveCare Direct, Volvo CE's telematics monitoring system, ever become critical machine-down cases.
- 85% improvement in resolution time for critical machine-down cases – most issues are resolved the same day they are reported.
- 97% improvement in the time to reach a Volvo Uptime Support Specialist – due to team cross-training across all product lines.

Read more about how Volvo Group increases uptime for customers through connected services on page 28.

## AI – the future of uptime

Connectivity is a game-changer for vehicle uptime, and the Volvo Group's brands are at the forefront, leveraging Group technology. Connected trucks and machines provide data that can be turned into knowledge, increasing uptime and creating value for customers. We have been monitoring certain components to optimize service planning and eliminate most unplanned stops for years. But some malfunctions have been difficult, if not impossible, to predict. Until now. With Artificial Intelligence (AI), Volvo Trucks is taking the next step in predicting and preventing unplanned stops, improving uptime even further. Think of it as a truck's sixth sense.

We are applying new methods for monitoring and analyzing data from thousands of trucks in real time. This allows us to develop increasingly more intelligent computer models that can identify patterns hidden from human view and capabilities. When an imminent failure is



detected, the customer's local Volvo workshop is alerted so that preventive actions can be taken – ahead of time. This gives the workshop a heads-up so that the right expertise and part or component is

ready as soon as the truck comes in – minimizing stops and helping to improve the profitability of trucking companies. ■

## RESPONSIBLE SALES

### DRIVING SUSTAINABLE BUSINESS

The Volvo Group's responsible sales approach was originally developed in 2014 for alignment with the Swedish Export Credit Agency's (EKN) sustainability risk assessment for sales transactions, which they guarantee in connection with customer financing. Building on this, we have continued to develop our approach to screen certain sales deals from human rights, environmental, and business ethics perspectives in order to identify potential risks as part of knowing the customer.

#### Integrating a corporate responsibility perspective in sales deals

We have processes and policies in place with the aim to ensure that we do business in compliance with applicable laws and regulations, including sanctions and export control regimes. On top of this, when export credit agencies or certain private insurance companies are involved in guarantees, we apply a corporate responsibility lens when screening those deals. We are continuously working to expand the scope of responsible sales screenings to beyond these specific deals.

In line with internal policies, we also perform risk assessments from compliance, legal and corporate responsibility perspectives in sales to selected governmental end-users in identified high-risk countries. Further, in 2019 we initiated the strengthening of internal procedures on sales to high risk customers in conflict affected areas.

We identify sustainability risks through credible tools when performing these screenings. The risk levels of identified findings are assessed, described and escalated to relevant forums within business areas or at Group functions. Mitigation actions typically include engagement with our customers on the findings, and in some cases adapting wordings in our sales offer to mitigate the identified risks. If the risks are considered to be high or not possible to mitigate, we may decide not to proceed with individual sales deals. In our screenings, we consider country risk levels, customer segments, end-users and potential end-use. Our business areas have the responsibility to perform the screenings, with support from Group functions when needed. When performing these screenings, we use a risk matrix to classify identified risks and country risk ratings based on credible international indices. In 2019, approximately 26% of Volvo Group's sales were to countries categorized as high risk.



#### Building capacity and furthering business opportunities

Volvo Trucks, Renault Trucks, Volvo CE and Volvo Buses screened approximately 170 (105) sales deals in 2019, primarily in connection with customer financing. We identified issues related to potential adverse impacts on the environment and local communities, poor employment conditions, occupational health and safety and unethical business behavior in some of these screenings. These potential issues were investigated further, often at business area or Group-level forums, discussed with our customers for further clarification and for initiating mitigating actions when needed.

In 2019, Volvo CE continued its efforts to build capacity and train employees on responsible sales. Approximately 80 persons belonging to customer finance, local sales and management in Asia, Eastern Europe, Middle East, Africa and Latin America were trained. Volvo CE also continued to raise awareness among its customer finance personnel across all sales regions.

Please see page 42 for more information on human rights.



## REUSE REDUCE RECYCLE REMAN



# RESOURCE EFFICIENCY AND INCREASED CIRCULARITY



The global economy is expected to grow significantly the next decades. At the same time, the notion of planetary boundaries, as well as volatile and steadily increasing commodity prices, puts higher demands on all parts of the value chain. Putting our customer in the center of attention allows us to develop new business opportunities and increase resource efficiency in a number of ways.

Increasing circularity revolves around extending service life and operational uptime of assets. Here, the main elements are to service, maintain and repair to increase the utilization rate of all materials in the products. As we increase our service-based business, the main output is uptime and availability of machines and vehicles. This is a prerequisite to focus even more on recyclability and remanufacturing.

Remanufactured components are offered to Volvo Group's customers worldwide. Engines, gearboxes, rear axle transmissions and other parts can be renovated to the same condition as new parts. Remanufacturing can increase the performance to even better condition and performance.

One example is a gearbox. In this case, a remanufactured one can save 50%, and sometimes up to 80%, resources compared to a new one. The saving comes from avoiding processing and refining new materials and the associated energy and emissions. By offering gearboxes in different versions, tailor made to the actual need, the savings achieved are even higher. The customers benefit from the same or higher quality with full warranty, often delivered at a better price.

## Distribution logistics

Volvo Group also works to continuously optimizing the transport networks to and from end-users. Many times, complex distribution networks do not facilitate circular business models due to shipping and lead times. This challenge can be overcome by integrating remanufacturing, maintenance and repairs in an improved service offer.

## Production

The Volvo Group works consistently with lean methodologies to use less material as well as processes to integrate more recycled materials, reduce waste, energy and water usage.

Virtually all metal scrap from Volvo production operations are recycled or reused. The choices of materials used are of increasing impor-

## FACTS

- The Volvo Group has eight remanufacturing centers in Sweden, France, Japan, Brazil, USA, China and India, handling used components from our whole range of brands.
- Remanufactured components are delivered with the same or higher quality as a new one, with full warranty, often at a better price.
- The cast iron in a Volvo Truck is made of 97% recycled iron.
- In 2019, 92% (86%) of residual products from operations were recycled, composted or incinerated with heat recovery.

### Estimated recyclability rate of Volvo Group products

Excavators	95–99%
Trucks	85%
Buses	82%

tance. Many of the materials are decided at an early design phase. Please refer to the Sustainability Notes on [volvogroup.com/GRI2019](http://volvogroup.com/GRI2019) for a detailed report on recycling rates.

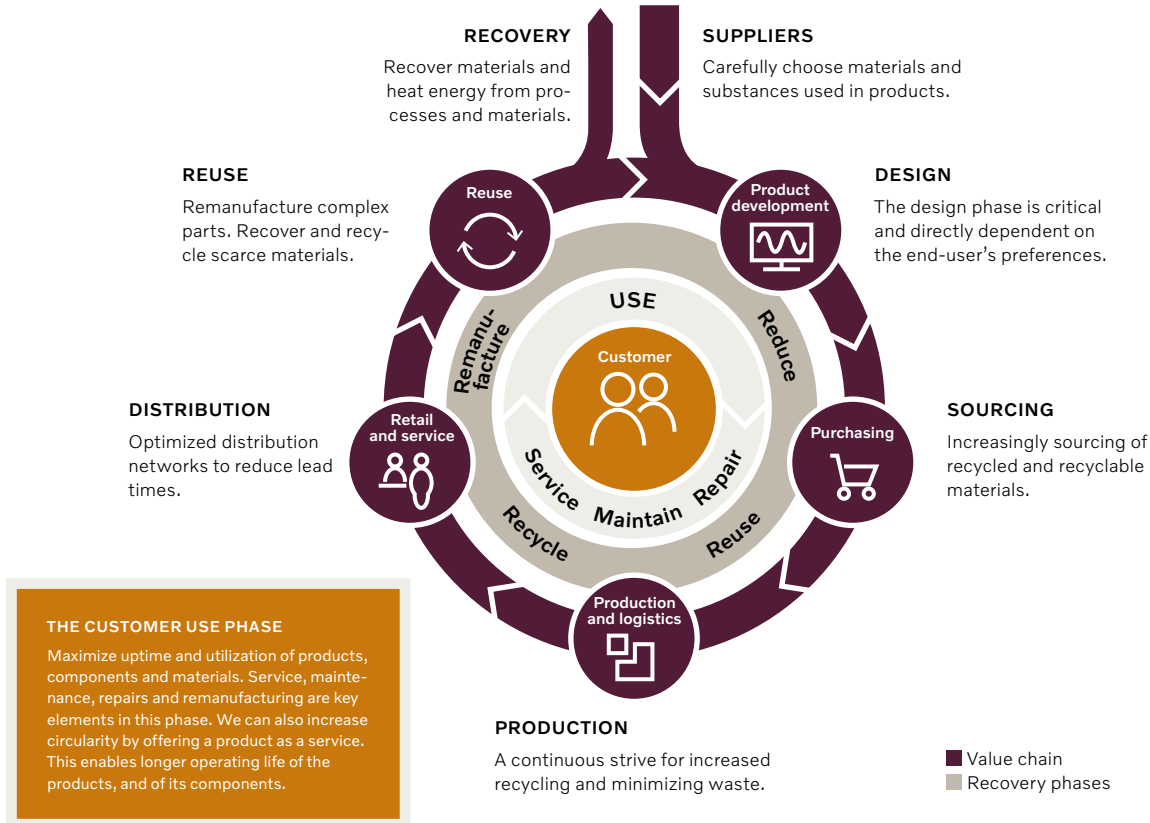
## Recovery and end of life management

In terms of weight, a new vehicle from Volvo Trucks is made up of about one-third from recycled material. Half the wrought iron comes from recycled metal and 97% of the cast iron is made from recycled iron. Using iron, steel and aluminum is favorable in term of recyclability. The additional materials are mainly plastic, rubber and material from electronic components. As the transport sector is increasingly electrified and connected and more minerals as well as other new components are built in, it becomes even more critical to choose materials wisely at an early stage.

## Sourcing recycled and recyclable materials

Some of the elements of circular economy relate directly to the materials and suppliers chosen. Complex value chains mean difficulties to assess the exact proportion of recycled materials but the choices of components can still be targeted towards higher recyclability. The incentive from a procurement perspective is simple. If we choose recycled or recyclable materials and components, the cost

## INCREASED RESOURCE EFFICIENCY AND CIRCULARITY



over time will be lower as we can avoid some of the most significant price increases in commodities.

### Design phase

To help customers with smarter and more sustainable decisions, Volvo Trucks has developed the Environmental Footprint Calculator, see [volvotrucks.com](http://volvotrucks.com). Where the raw materials come from, energy and materials consumption, emissions from our factories and how to make our recycling more efficient, all are important aspects to consider when calculating the entire lifecycle.

Volvo Trucks evaluates the impact of its products through five main parameters: materials and production, fuel, exhaust emissions, maintenance and end-of-life treatment (recycling). Focusing on the life-cycle of the vehicles means considering potential trade-offs and building in the best available solution. It also means working with materials that can be easily recycled, reclaimed and remanufactured. For example, plastic clips are used rather than metal clips to attach wires and hoses. Metal clips take far longer to remove during the reclaiming process, risking that fewer materials are recovered at the end of life.

### A new age, revolving around circularity

Together with business partners Volvo Group has managed to extract palladium and platinum from scrapped diesel particulate filters. The environmental impacts and costs in terms of saved energy, landfill and mining are substantial for these kind of materials. During 2019, 5.3 kg platinum and 5.8 kg palladium were extracted; these minerals can be used directly to make new particulate filters for Euro VI engines.

Volvo Penta launched factory remanufactured exchange engines for an extended range of industrial engines during 2019. The range now covers 5L, 8L, 9L and 13L engines. The offer is well received by our service network, which indicates good opportunities for future remanufacturing of additional ranges.

The Volvo Group also seeks to find synergies for second life of components. Please see page 92 for an additional example on batteries. ■

### RECOVER ENERGY



Volvo Construction Equipment operates one of its most energy intensive sites in Eskilstuna, Sweden. The biggest processes in terms of energy use at the plant are found in the hardening center, where machine parts are heated to a high temperature and then cooled to ensure a strong surface and a long life, and the paint shop, where components are heated so the paint dries. During the year, the plant has invested SEK 5 M in an energy recovery system that recovers around 60% of the heat generated in the hardening center and transfer it to paint shop. This is one of the actions taken for the fulfillment of Volvo's internal qualification criteria on renewable energy and landfill-free facility.



# OUR PEOPLE ARE OUR BIGGEST STRENGTH

All successful organizations have one thing in common – skilled and engaged people. The right talent and competence can be a scarcity if not actively managed, and it is increasingly important for the Volvo Group to attract, retain and develop the right people and to shape a culture that drives engagement and thus performance.





## ADMIRED EMPLOYER

**W**orking at Volvo should be purposeful, rewarding and safe. The overall ambition is to tap into the potential from every employee and use our individual and collective strengths to perform our current business and to transform into tomorrow's business needs. With our people as our biggest strength, we will take the lead in driving prosperity through transport solutions.

### Dialogue throughout the whole employment for better performance

In today's business environment, the change is constant and we experience a rapid adoption of connected technologies that significantly influence how we communicate and collaborate at work. In the Volvo Group we aim to grow our people, which demands instant feedback and active sharing.

To evolve effectively, the Volvo Group needs faster and more focused insights from employees. Getting frequent and focused insights can help us make changes that are most impactful.

This year, the Volvo Group has continued the journey of enabling dialogue by aiming for lifecycle listening covering all dimensions of dialogue. Individual dialogue has been strengthened through Performance Touchpoints between managers and employees, a quick and demand-driven way of making sure we focus on the right activities. To enable the Volvo Group to listen more attentively on an individual level but also from a Volvo Group perspective, we have launched our bi-yearly annual survey, Volvo Group Global Pulse. We are moving a step further by including open-ended questions and free text comments, which are facilitated by automated text analysis through machine learning, allowing us to capture even more feedback from our employees. The scope also includes onboarding and exit interviews to cover the whole employee lifecycle.

### Develop leaders and attracting talents of tomorrow

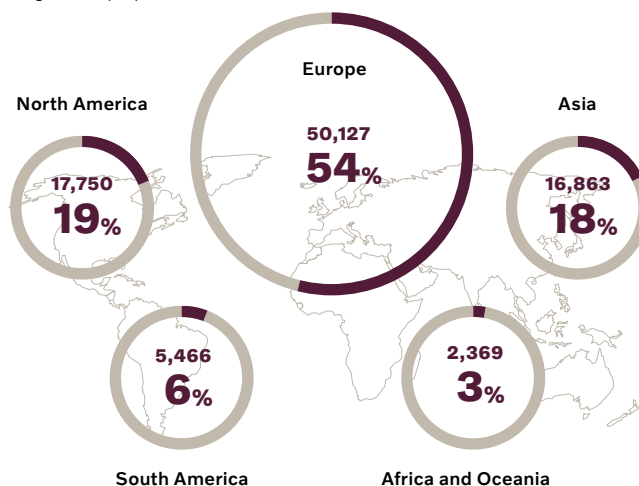
In the Volvo Group, we see talented people as our most important asset. We are both working with developing our leaders and attracting new talents of tomorrow.

We want to secure a diverse leadership pipeline and stimulate diversity through the Volvo Group Talent review. A structured calibration where we look at performance and potential that secures a solid succession planning with talented people in Volvo Group. To develop our leaders, we have various leadership programs for different career levels within our organization.

Volvo Group is used to collaborate with students and universities as a means to secure the competence of tomorrow with a close collaboration with future employees. Every year we collaborate with students from a number of universities around the world.

Our collaborations with both engineering and business universities in Sweden, France, the US, China and Japan revolve around three main modules – research, learning and talents. Our Academic Partner Program secures a good connection between Volvo Group expertise with global academic research and innovation environments.

### A global organization Regular employees 2019



Number of employees	Dec 31 2019	Dec 31 2018
Blue-collar	50,936	53,065
Whereof temporary employees and consultants	4,506	6,501
White-collar	53,049	52,110
Whereof temporary employees and consultants	6,904	6,545
<b>Total number of employees</b>	<b>103,985</b>	<b>105,175</b>
Whereof temporary employees and consultants	11,410	13,046

Employee turnover	2019, by gender, age and total		
	<40	40+	All
Group Total	9.8%	5.9%	7.5%
Men	9.9%	5.8%	7.4%
Women	9.5%	6.4%	7.7%

In Sweden we started a dedicated program called ACCELERATE during 2019. This is a new thesis program within Volvo Group, which provides a good opportunity for our future talents to grow networks in their field to build their future careers. The program in 2019 included around 30 students who were given the opportunity to combine theory with practice and connecting this to the Volvo Group's mission. For the program participants we offer a possibility to write a Master or Bachelor thesis and grow with us through product experience sessions and development activities.

The Volvo Group also offers four different graduate programs: International, Engineering, Operations and IT. Through these graduate programs we secure the future skills and increase the attraction of Volvo Group as an employer.



### Education and development for everyone

The Volvo Group prepares for the future. To balance the competence needs of today with future demands to support business change we invest in training and competence development. To realize the need, we have our very own corporate university as well as local training centers. Volvo Group University (VGU) is our center for learning and competence development. VGU develops, designs and provides training and learning experiences well rooted in today's and future business needs.

VGU offers easily accessible training in a wide range of topics, some of which are fundamental to all employees and some are specific for different roles. Different formats are used to ensure the best learning experience: on-line, on-the-floor, on-stage and classroom training, as well as videos and games.

The local training centers in our production facilities provide training such as introduction for new employees, Volvo Production Systems and product training. Training programs within Volvo Group are provided by an online platform open to all employees, which accelerates competence development, includes and engages employees engaged in their learning and sharing journey. Every year the Volvo Group allocates approximately half a million training days to our employees and retail organizations worldwide. During 2019, over 150,000 participants attended training through Volvo Group University whereof 119,000 took part in online training and 31,000 participated in trainer-led education. ■



### CAREER DEVELOPMENT AND FUTURE PROOFING VOLVO GROUP



People, products and ways of working are impacted by automation, electrification and connectivity. Electrified vehicles means electric drives, but also new supply chains and traction voltage systems with critical safety and regulations aspects. Artificial intelligence allows even more advanced products and services, as well as automation of internal processes. Volvo Group University runs numerous learning programs to support the transformation, addressing new technologies as well as mindset and change.

Volvo Group University also supports new employees, who bring new skills and competences into the company to develop skills in Volvo specific domains, such as vehicle technology and manufacturing concepts.

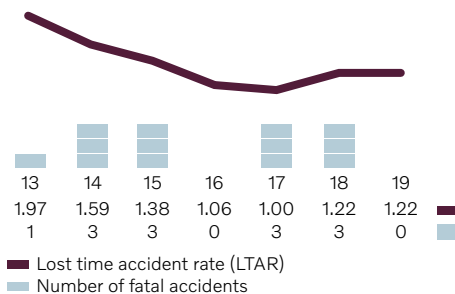
## HEALTH, SAFETY AND WELL-BEING IN FOCUS

**V**olvo Group's Health and Safety Policy is built on the belief that accidents, near misses and work-related illness can be prevented. We work actively to minimize both the physical and psychological risks in the workplace and in 2019 we have focused on promoting a wide range of tools about mental health. The toolbox consists of a number of tools, workshops and assessments designed to prevent mental health problems, promote performance and well-being at work, as well as to build resilience to manage stress and to avoid over stress or burn-out.

### Continuous improvements

Over a longer time period the recordable accidents have been reduced. However, in 2018 and 2019 the accident rate increased to 1.22 per 200,000 worked hours. The increase is concluded to be a combined effect of more rigorous reporting, a larger scope of the opera-

### Health & Safety – Lost time accident rate



Lost time accident rate = Number of recordable accidents with lost time × 200,000 hours / total number of worked hours for all employees and consultants.



**SAFETY IS ABOUT PUTTING PEOPLE AT THE CENTER OF EVERYTHING WE DO, IN OUR OPERATIONS AND WITH OUR PRODUCTS.**



"I began working with road traffic safety soon after joining Volvo Group in 2000. First, by working on developing passive safety systems and later as part of the Accident Research Team, which I went on to lead. "The work with the Accident Research Team was really interesting and inspiring because you got to see the everyday reality of drivers, which is always much more complex than in the lab."

*Anna Wrige Berling, Traffic & Product Safety Director.*

*"A truly satisfying part of working with safety is interacting with people. When someone tells you after a talk 'I will start wearing my seatbelt now,' it gives a real sense of accomplishment. You might have saved that person's life."*





tions included (100% of employees) with more aftermarket service workshops, as well as related to higher production levels and more activity in the workshops.

In the Volvo Group, we address health and safety in a number of ways. 32 sites, or approximately 30% of our operations are certified according to OHSAS 18001 or ISO 45001. These sites are externally audited and we also carry out internal health and safety audits within the scope of the Volvo Group Management System. In 2019, we achieved zero accidents in 31 (27) plants. Safety is the first topic on the agenda for the quarterly business review meetings, where the Volvo Group's executive board is involved in specific action plans with divisions and business areas. In addition, at the highest level in the organization, the AB Volvo Board is briefed on occupational safety. ■

#### CELEBRATING BEST PRACTICES, AND HIGHLIGHTING ACCIDENTS WAITING TO HAPPEN



The Volvo Group Health & Safety Award was established in 2006 with the aim to highlight safety and health-related efforts and to inspire everyone to invest in safe working conditions and health promotion. Over the past 13 years the number of applications for the award has continued to increase, and the results of these projects become even more tangible. In 2019, 58 initiatives were in the race, each and every one of them highlighting a fresh and innovative improvement. At the same time, we work to learn from near-misses or unsafe behavior. In 2019 the team of safety staff were strengthened to be able to work more proactively.

### LABOR RELATIONS – BASED ON HONESTY AND TRANSPARENCY



Change to stay ahead was the theme of the Volvo Global Dialogue meeting held in September 2019 in Greensboro, US, at which around 50 employee representatives and union members out of 20 different countries from the Global Works Council (GWC) met with the Volvo Group Executive Board and Group Management. Topics beside the business area updates focused on the demands of the modern transportation market and the challenges that lie ahead, but also on the changing competency requirements for employees for the transformed future industrial environment.

Volvo Global Dialogue is one forum among several other dialogue platforms. The Volvo Group's European Works Council (EWC) meets twice per year and is continually informed in ad hoc meetings regarding organizational or major business changes. In 2019, 13 (5) such information were conducted to secure a European alignment of organizational changes. Following this forum, the country organizations continue the dialogue with the country and local unions. In 2019, the Volvo Group conducted 60 (56) consultations with employee and union representatives in the different countries around different topics.

Three ordinary and two deputy members chosen by employee organizations are part of the AB Volvo Board of Directors. This enables dialogue from management and employee perspectives early in decision making at board level. The collaboration principles with all employee and union representatives are based on honesty, transparency, fairness and win-win, and being creative to develop out-of-the-box solutions for complex topics.

#### Restructuring and changes in the workforce

Involuntary redundancies increased slightly from 1.3% of the total workforce in 2018 to 1.7% in 2019. It was mainly related to business downturn affects in some markets, especially in the manufacturing and operations area in the USA and Belgium. However, the Volvo Group employed about 450 regular employees more in the end of 2019 compared to 2018.

When there are major changes in our organization, employee representatives and relevant government authorities are informed in accordance with legal and contractual requirements. Not only do statutory and contractual notice periods guide us in the timeline for this, but also the creation of alternative solutions for outplacement, such as time-banks or governmental sponsored working-time shortages in collaborative work with the employee and union representatives. In case of formal redundancies, we also use measures such as internal mobility forums and outplacement support, when appropriate.

#### Freedom of association

The dialogues and relationship with our employee and union representatives results also in Collective Bargaining Agreements around the world that cover about 73% (73%) of our regular employees in 23% (23%) different countries. As stated in our Code of Conduct, the Volvo Group respects the right of all employees to form and join a union or their choice to refrain from doing so and we estimate that some 42% (42%) of the regular employees are members of an independent trade union. This shows also a significantly higher union density rate than the average compared to the International Labor Organization statistics in our major markets like Sweden, the US, Japan or Brazil. ■

## INCLUSION AND DIVERSITY HELP TO RELEASE OUR THE FULL POTENTIAL

In the Volvo Group, we know that an inclusive work environment unlocks the hidden potential of diversity and drives performance by enriching our creativity, allowing us to be more innovative and improving our decision making. All of the diverse dimensions that make up our individual backgrounds give each of us a valuable, unique perspective. Leveraging this diversity is essential for business success, as it allows all employees to release their passion and contribute to their full potential. For more than a decade, we have worked systematically to increase both diversity and inclusion, with the aim of making our workforce and management reflect the diversity of the regions in which we operate.

**Diversity and inclusion labs**

For 2019, the Volvo Group has continued to roll out its innovative “Diversity & Inclusion Labs” concept. The three types of D&I labs provide a framework for learning, problem solving or perspective taking. The Learning Lab allows participants to gain knowledge and learn practical, hands-on techniques for boosting diversity and creating inclusion. The Solution Lab enables the organizer to set a goal and participants to co-create a solution by using an innovation process such as design thinking. The Bounce Lab is designed to better understand a problem or gain a new perspective. Participants with an interest in the topic give their viewpoints on the situation at hand, e.g. “why do we not have more women applying for jobs in production?”.

2019 also saw the launch of our Module II training for Diversity and Inclusive Leadership, helping leaders to break down the concrete building blocks of an inclusive organization.

Examples of other actions include the D&I Champions network composed of senior business leaders who act as visible role models and work hand in hand with Human Resources on diversity and inclusion strategies.

**Gender diversity, share of women in Volvo Group, %**

	2019	2018	2017	2016	2015
All employees	19	18	19	18	18
Manager (all levels)	20	19	19	18	18
Presidents and other senior executives	26	25	25	24	22
AB Volvo Board (excluding deputies)	40	40	36	36	33

The Group also added our first employee inclusion network focusing on diverse abilities and inclusion of people with disabilities.

**Raising awareness of LGBTQ**

The Volvo Group is committed to treating all our employees equally regardless of their sexual orientation, just as with any other aspect of diversity.

In 2019, we continued our active sponsorship of the local West Pride event in Gothenburg with speakers from Volvo Group on the theme of Radicals in the corporate world. Hundreds of Volvo employees took part in the parade in Gothenburg, expressing their commitment for human rights.

Our V-EAGLE LGBTQ+ employee inclusion network continues to promote inclusion through information sessions based on our manager’s guide on sexual orientation and gender identity. Its objective is to raise awareness of LGBTQ+ issues, combat stereotypes and prejudice, and ensure that a wide variety of individuals and family situations are recognized by the company. ■

**Volvo Trucks’ management team; the most diverse in the industry**

The Executive Management Team of Volvo Trucks includes greater representation of different genders, nationalities, ages and backgrounds than any other truck manufacturer. Of the 13 members of the Volvo Trucks management team, six are women and four different nationalities are represented: Swedish, Brazilian, Dutch and American.

“Diversity reflects the environment we operate in. Internally with our people, as well as externally when it comes to our customer base, it is important that we reflect this diversity. We are convinced that our diversity and inclusiveness makes for better discussions and more robust decisions. This is because people with different backgrounds automatically bring different perspectives and can challenge one another in their thinking,” says Helena Arensberg, SVP HR at Volvo Trucks.

Across the Volvo Group, the share of women in management positions has increased from 10 to 20% since the beginning of the century. But diversity is not only about gender, age, ethnicity or other category; it is also about thought, backgrounds and work experiences. The importance is to build an inclusive culture where commitment and knowledge are appreciated and utilized. It is the combination of diversity and inclusion that will ultimately contribute to business success.

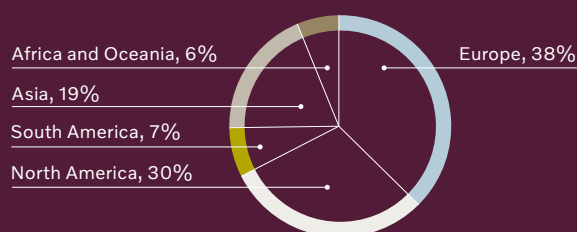


# CONTINUED GOOD DEMAND IN MANY MARKETS

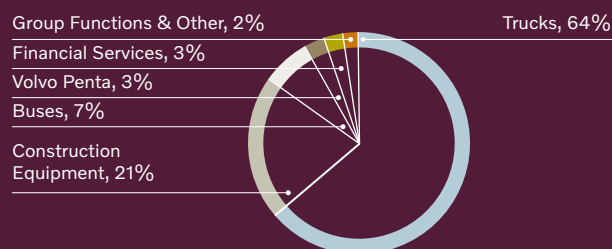
The Volvo Group is the world's second largest manufacturer of heavy-duty trucks, one of the largest manufacturers of buses and construction equipment and is also a leading manufacturer of heavy-duty diesel engines as well as marine and industrial engines. Demand continued to be good in many markets in 2019, but with a weaker development in the second half of the year.



SHARE OF NET SALES BY MARKET 2019

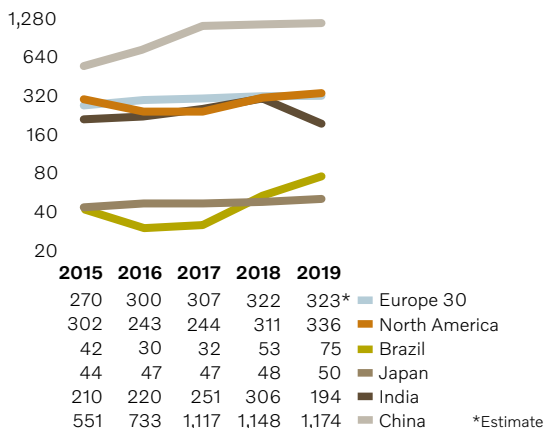


SHARE OF NET SALES BY SEGMENT 2019

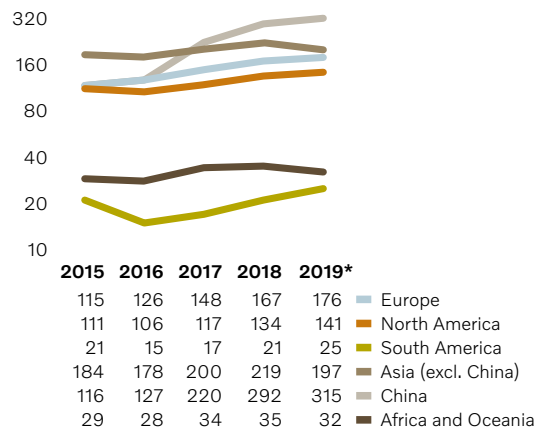




### Market development, heavy-duty trucks, Thousands



### Market development in Volvo CE product ranges, construction equipment, Thousands



## EUROPE

- Net sales: SEK 163,748 M (160,591)
- Share of net sales: 38% (41)
- Number of regular employees: 50,127 (49,694)
- Share of Group regular employees: 54% (54)
- Largest markets: France, the UK, Germany, Russia and Sweden.



- Registrations of heavy-duty trucks in Europe 28 continued to be high, 265,000 units per November was on the same level as during the same period in 2018.
- Volvo Trucks' market share of 15.5% as of November was lower than the 16.0% in 2018. Renault Trucks market share was 8.7% (8.8).
- The construction equipment market grew by 6% as of November. However demand weakened during the course of the year.

## AFRICA AND OCEANIA

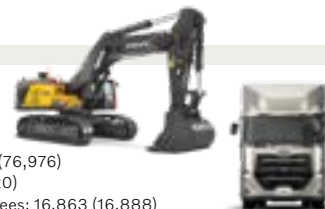
- Net sales: 25,750 M (25,182)
- Share of net sales: 6% (6)
- Number of regular employees: 2,369 (2,474)
- Share of Group regular employees: 3% (3)
- Largest markets: Australia, South Africa, New Zealand and Morocco.



- Demand for heavy-duty trucks in Australia declined by 10% from high levels.
- The truck market in South Africa was stable on a good level, while demand in northern Africa continued to be weak.
- Demand for construction equipment was soft in markets which have a large exposure to mining and resources.

## ASIA

- Net sales: SEK 79,951 M (76,976)
- Share of net sales: 19% (20)
- Number of regular employees: 16,863 (16,888)
- Share of Group regular employees: 18% (18)
- Largest markets: China, Japan, South Korea, India and Indonesia.



- The Chinese market for construction equipment grew by 8% as of November, with a positive development for both excavators and wheel loaders.
- Out of the Group's main truck markets in Asia, demand continued to be good in China and Japan while the Indian heavy-duty truck market declined substantially compared with 2018.

## NORTH AMERICA

- Net sales: SEK 131,310 M (106,948)
- Share of net sales: 30% (28)
- Number of regular employees: 17,750 (17,845)
- Share of Group regular employees: 19% (19)
- Largest markets: The US, Canada and Mexico.



- The heavy-duty truck market increased by 8% compared with 2018. However, order intake declined significantly during the course of the year.
- Volvo Trucks lost market share while Mack gained some share. Volvo Trucks came in on 9.2% (10.3) and Mack on 7.0% (6.7).
- The construction equipment market by 6% as of November, mainly due to increased demand for larger machines.

## SOUTH AMERICA

- Net sales: SEK 31,221 M (21,138)
- Share of net sales: 7% (5)
- Number of regular employees: 5,466 (5,228)
- Share of Group regular employees: 6% (6)
- Largest markets: Brazil, Peru, Chile and Colombia.



- Demand in the important Brazilian truck market was strong, with a market increase of 42% for heavy-duty trucks.
- Demand in other South American markets was more muted, but with Volvo Trucks gaining market share.
- The South American construction equipment market increased by 17% from low levels, mainly driven by Brazil.

## SIGNIFICANT EVENTS

# SIGNIFICANT EVENTS PUBLISHED IN QUARTERLY REPORTS DURING 2019

## Sale of shares in WirelessCar completed

On March 29, the Volvo Group completed the previously announced divestment of 75.1% of the shares in its wholly-owned subsidiary WirelessCar to the Volkswagen Group. The sales price amounted to SEK 1,174 M. The divestment resulted in a positive impact on operating income of SEK 1,466 M and a positive cash flow effect of SEK 1,174 M in the first quarter of 2019.

## Annual General Meeting of AB Volvo

The Annual General Meeting of AB Volvo held on April 3, 2019, approved the Board of Directors' motion that an ordinary dividend of SEK 5.00 per share and an extraordinary dividend of SEK 5.00 per share should be paid to the shareholders. The income statement and balance sheet as well as the consolidated income statement and the consolidated balance sheet were adopted. The Board Members, Board Deputies and the President were discharged from liability for their administration during the 2018 fiscal year.

Matti Alahuhta, Eckhard Cordes, Eric Elzvik, James W. Griffith, Martin Lundstedt, Kathryn V. Marinello, Martina Merz, Hanne de Mora, Helena Stjernholm and Carl-Henric Svanberg were reelected as members of the Board. Carl-Henric Svanberg was reelected as Chairman of the Board.

A remuneration policy for senior executives was adopted in accordance with the Board of Directors' motion.

## Vera's first assignment

In June, it was announced that Volvo Trucks' electric, connected and autonomous vehicle called Vera will form part of an integrated solution to transport goods from a logistics center to a port terminal in Gothenburg, Sweden. The assignment is a result of a new collaboration between Volvo Trucks and the logistics company DFDS.

## Partnership with NVIDIA

In June, the Volvo Group signed an agreement with NVIDIA to jointly develop the decision making system of autonomous commercial vehicles and machines. Utilizing NVIDIA's end-to-end artificial intelligence platform for training, simulation and in-vehicle computing, the resulting system is designed to safely handle fully autonomous driving on public roads and highways. The solution will be built on NVIDIA's full software stack for sensor processing, perception, map localization and path planning, enabling a wide range of possible autonomous driving applications, such as freight transport, refuse and recycling collection, public transport, construction, mining and forestry. The system is planned to be used first in commercial pilots and later in commercial offerings.

## Strategic alliance with Samsung SDI

In July, the Volvo Group and Samsung SDI entered into a strategic alliance to develop battery packs for the Volvo Group's electric trucks. Samsung SDI intends to provide battery cells and modules

## VOLVO GROUP PRESS RELEASES 2019

### THE FIRST QUARTER

**1/3/2019** Volvo Group makes a provision of SEK 7 bn relating to estimated costs to address degrading emission control component issue **1/15/2019** Volvo Group Venture Capital invests in wireless electric charging **1/16/2019** Invitation to press and analyst conference in Stockholm **1/16/2019** Volvo Construction Equipment goes electric on smaller machines **1/30/2019** Volvo Group – the fourth quarter and full year 2018 **2/1/2019** ElectriCity takes to the water with Volvo Penta **2/18/2019** Volvo Financial Services launches 10-week iLabX program with 7 start-ups **2/28/2019** Annual General Meeting of AB Volvo **3/12/2019** AB Volvo publishes Annual and Sustainability Report 2018 **3/28/2019** CampX by Volvo Group shapes the future of the transport industry **3/29/2019** Volvo Group has completed the sale of shares in WirelessCar

### THE SECOND QUARTER

**4/2/2019** Volvo Group Capital Markets Day 2019 **4/3/2019** Annual General Meeting of AB Volvo **4/10/2019** Invitation to press and analyst conference in Stockholm **4/10/2019** Professor Sonia Yeh awarded with Håkan Frisingers scholarship for innovative research on mobility **4/24/2019** Volvo Group – the first quarter 2019 **5/2/2019** Volvo Financial Services' iLABX program draws to a close with a Demo Day **5/8/2019** Mack Trucks unveils fully electric refuse demonstration model **5/22/2019** Electric Site wins Volvo Technology Award **5/23/2019** Volvo Construction Equipment and SDLG take next step in China **6/13/2019** Vera's first assignment: Volvo Trucks presents an autonomous transport between a logistics centre and port **6/18/2019** Volvo Group partners with NVIDIA to develop advanced AI platform for autonomous trucks **6/18/2019** Volvo Group Capital Markets Day – "Perform and Transform" **6/28/2019** New number of votes in AB Volvo

to meet the demand for the Volvo Group's electric trucks. The intention is that Volvo Group will utilize Samsung SDI's battery pack technology for assembly in the Volvo Group's manufacturing operations.

#### One million connected customer units

On October 3, it was announced that the Volvo Group had delivered more than one million connected customer units, in terms of delivered trucks, buses, and construction equipment. The large amount of data collected is used to improve productivity by increasing vehicle and machine uptime, reducing emissions and noise, as well as improving traffic and site safety.

#### New business area for autonomous transport solutions

On October 18, the Volvo Group announced that it will create a new business area for autonomous transport solutions. Volvo Autonomous Solutions will accelerate the development, commercialization and sales of autonomous transport solutions. This is expected to enable the Volvo Group to meet a growing demand and to offer the best possible solutions to customers in segments such as mining, ports and transport between logistics centers, as a complement to today's products and services. Volvo Autonomous Solutions is a new business area as of January 1, 2020. Its financial results will be reported as part of the Trucks segment.

#### Heavy-duty electric concept trucks from Volvo Trucks

In December, Volvo Trucks presented heavy-duty electric concept trucks for construction operations and regional transport. Volvo Trucks believes that electrification can become a competitive alternative also for heavier trucks.

#### New appointments to Group management

In December, Scott Rafkin, previously President of Volvo Financial Services, was appointed to the new position of Executive Vice President and Chief Digital Officer for the Volvo Group. Nils Jaeger, previously President Region EMEA, Volvo Financial Services, was



Scott Rafkin



Nils Jaeger

appointed President of the new Volvo Group business area Volvo Autonomous Solutions. Both Scott Rafkin and Nils Jaeger assumed their new positions on January 1, 2020.

#### Volvo Group and Isuzu Motors intend to form strategic alliance

On December 18, the Volvo Group and Isuzu Motors signed a non-binding Memorandum of Understanding with the intent to form a strategic alliance within commercial vehicles. In a first step, the intention is to establish a global technology partnership and to create a stronger, combined heavy-duty truck business for Isuzu Motors and UD Trucks. This will entail transferring ownership of the complete UD Trucks business globally from the Volvo Group to Isuzu Motors. The enterprise value for the complete UD Trucks business is JPY 250 billion (approx. SEK 22 billion as per the end of November 2019) and will be subject to the final scope of the business transferred and Isuzu Motor's due diligence. The transaction is expected to, at the time of closing, result in a positive impact on the Volvo Group's operating income of approximately SEK 2 billion and increase the Volvo Group's net cash position by approximately SEK 22 billion. Signing of binding agreements is expected by mid-2020 and closing of the transaction is expected by the end of 2020. All potential transactions will be subject to regulatory and other approvals. ■

#### THE THIRD QUARTER

**7/4/2019** Invitation to press and analyst conference in Stockholm **7/18/2019** Volvo Group and Samsung SDI enter strategic alliance for electromobility **7/18/2019** Volvo Group – the second quarter 2019 **8/30/2019** New number of votes in AB Volvo **9/30/2019** New number of votes in AB Volvo

#### THE FOURTH QUARTER

**10/3/2019** The Volvo Group passes the milestone of one million connected customer assets for increased sustainability, uptime and safety **10/4/2019** Invitation to press and analyst conference in Stockholm **10/7/2019** Ecologist Terry Chapin, creator of the concept of Earth Stewardship, receives the Volvo Environment Prize 2019 **10/18/2019** The Volvo Group creates new business area for autonomous transport **10/18/2019** Volvo Group – the third quarter 2019 **10/21/2019** Volvo Group Venture Capital invests in cyber security **10/31/2019** New number of votes in AB Volvo **11/5/2019** Volvo receives Europe's largest order for electric buses **11/6/2019** Volvo Trucks launches sales of electric trucks for urban transport **12/5/2019** Volvo Group Venture Capital invests in software for autonomous mobility **12/9/2019** Volvo Group Venture Capital invests in Autotech Ventures **12/13/2019** Scott Rafkin appointed Volvo Group Chief Digital Officer **12/18/2019** Volvo Group and Isuzu Motors intend to form strategic alliance **12/20/2019** Nils Jaeger appointed President Volvo Autonomous Solutions **12/20/2019** Save the date for the Volvo Group Capital Markets Day 2020 **12/30/2019** New number of votes in AB Volvo



## FINANCIAL PERFORMANCE

## IMPROVED PROFITABILITY

For the Volvo Group, 2019 was a year with high volumes and improved profitability.

INCOME STATEMENTS VOLVO GROUP									
SEK M		Industrial Operations		Financial Services		Eliminations		Volvo Group	
		2019	2018	2019	2018	2019	2018	2019	2018
<b>Net sales</b>	Note 6, 7	<b>418,361</b>	<b>378,320</b>	<b>14,870</b>	<b>13,070</b>	<b>-1,252</b>	<b>-555</b>	<b>431,980</b>	<b>390,834</b>
Cost of sales		-319,055	-296,109	-9,091	-7,924	1,252	555	-326,895	-303,478
<b>Gross income</b>		<b>99,306</b>	<b>82,210</b>	<b>5,779</b>	<b>5,146</b>	<b>-</b>	<b>-</b>	<b>105,085</b>	<b>87,357</b>
Research and development expenses		-18,539	-15,899	-	-	-	-	-18,539	-15,899
Selling expenses		-30,483	-28,642	-2,554	-2,248	-	-	-33,037	-30,890
Administrative expenses		-5,887	-5,756	-13	-43	-	-	-5,901	-5,798
Other operating income and expenses	Note 8	230	-1,828	-445	-445	-6	-	-221	-2,273
Income from investments in joint ventures and associated companies	Note 5, 6	1,859	1,948	-	-	-	-	1,859	1,948
Income/loss from other investments		285	33	0	0	-	-	285	33
<b>Operating income</b>		<b>46,771</b>	<b>32,067</b>	<b>2,766</b>	<b>2,411</b>	<b>-6</b>	<b>-</b>	<b>49,531</b>	<b>34,478</b>
Interest income and similar credits		320	199	-	-	0	0	320	199
Interest expenses and similar charges		-1,673	-1,658	0	0	0	0	-1,674	-1,658
Other financial income and expenses	Note 9	-1,346	-870	-	-	-	-	-1,345	-870
<b>Income after financial items</b>		<b>44,071</b>	<b>29,738</b>	<b>2,767</b>	<b>2,411</b>	<b>-6</b>	<b>-</b>	<b>46,832</b>	<b>32,148</b>
Income taxes	Note 10	-9,650	-6,172	-688	-613	1	-	-10,337	-6,785
<b>Income for the period</b>		<b>34,422</b>	<b>23,566</b>	<b>2,079</b>	<b>1,798</b>	<b>-5</b>	<b>-</b>	<b>36,495</b>	<b>25,363</b>
Attributable to:									
Owners of AB Volvo									35,861 24,897
Non-controlling interest									635 466
									<b>36,495 25,363</b>
Basic earnings per share, SEK									Note 19 17.64 12.25
Diluted earnings per share, SEK									Note 19 17.64 12.24

OTHER COMPREHENSIVE INCOME		
SEK M	2019	2018
<b>Income for the period</b>	<b>36,495</b>	<b>25,363</b>
<i>Items that will not be reclassified to income statement:</i>		
Remeasurements of defined benefit pension plans	Note 20 -2,969	-579
Remeasurement of holding of shares at fair value	Note 19 10	14
<i>Items that may be reclassified subsequently to income statement:</i>		
Exchange differences on translation of foreign operations	2,616	2,350
Share of Other comprehensive income related to joint ventures and associated companies	252	0
Accumulated translation difference reversed to income	-	-94
<b>Other comprehensive income, net of income taxes</b>	<b>-91</b>	<b>1,691</b>
<b>Total comprehensive income for the period</b>	<b>36,403</b>	<b>27,054</b>
Attributable to:		
Owners of AB Volvo	35,738	26,536
Non-controlling interest	665	518
	<b>36,403</b>	<b>27,054</b>

## Net sales

During 2019, net sales increased by 11% to SEK 432 billion (391). Adjusted for currency movements and acquired and divested operations the increase was 5%.

Vehicle sales increased by 6% adjusted for currency movements, primarily as an effect of increased sales of trucks and buses. Service sales increased by 4% adjusted for currency movements, primarily related to price realization.

Net sales in Trucks increased, driven by higher truck deliveries in both North and South America. This was partly offset by lower deliveries in Europe.

Construction Equipment had a positive sales trend where increases in Europe and Asia were partly offset by declines in Africa and Oceania. Buses increased sales in all markets. Volvo Penta sales decreased mainly due to the slowdown for industrial off-road engines, which was further accentuated due to a pre-buy in Europe 2018.

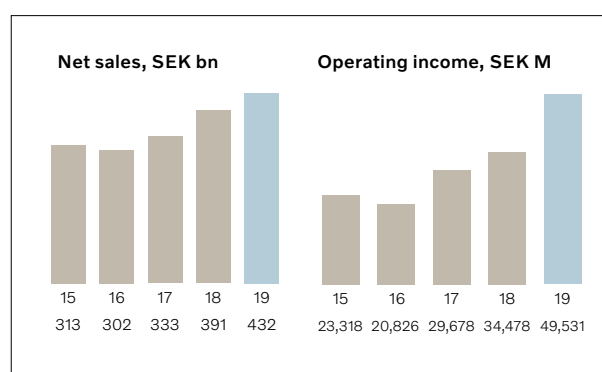
The Volvo Group's sales of defense material, as defined in the Swedish Military Equipment Ordinance (1992:1303) section A, amounted to 0,51% of net sales in 2019, compared to 0,33% in 2018.

## Operating income

2019 was another good year for the Volvo Group. The adjusted operating income increased by SEK 7.2 billion to SEK 47.9 billion (40.7) including a positive currency effect of SEK 4.3 billion. Trucks, Construction Equipment, Buses and Financial Services all recorded their highest adjusted operating income so far. The increased earn-

ings was primarily an effect of improved prices and mix for new vehicles as well as increased service earnings. This was partly offset by higher research and development and selling expenses. The adjusted operating income included capital gains from sale of real estate amounting to SEK 0.7 billion. The adjusted operating margin increased to 11.1% (10.4).

Adjusted operating income excludes a capital gain of SEK 1.6 billion from the sale of the majority of Volvo Group's holding of shares in WirelessCar. In 2018, the adjusted operating income excluded a provision of SEK 7 billion related to estimated cost to address an issue with an emission control component as well as a gain of SEK 0.8 billion from the sale of shares in Inner Mongolia North Hauler Joint Stock Co., Ltd. Reported operating income in 2019 amounted to SEK 49.5 billion (34.5).



Net sales by operating segment, SEK M	2019	2018	%
Trucks	276,647	250,358	11
Construction Equipment	88,606	84,238	5
Buses	31,019	25,826	20
Volvo Penta	13,287	13,741	-3
Group Functions & Other	12,287	7,568	62
Eliminations	-3,484	-3,411	-2
<b>Industrial Operations</b>	<b>418,361</b>	<b>378,320</b>	<b>11</b>
Financial Services	14,870	13,070	14
Reclassifications and eliminations	-1,252	-555	-
<b>Volvo Group<sup>1</sup></b>	<b>431,980</b>	<b>390,834</b>	<b>11</b>

1 Adjusted for changes in currency rates and acquired and divested units, net sales increased by 5%.

Net sales by market area, SEK M	2019	2018	%
Europe	158,985	155,140	2
North America	125,855	102,383	23
South America	29,739	19,914	49
Asia	78,914	76,177	4
Africa and Oceania	24,869	24,705	1
<b>Total Industrial Operations</b>	<b>418,361</b>	<b>378,320</b>	<b>11</b>
Of which:			
Vehicles	332,558	299,356	11
Services	85,804	78,963	9

Adjusted operating income by operating segment, SEK M	2019	2018
Trucks	31,552	26,351
Construction Equipment	11,910	11,306
Buses	1,337	765
Volvo Penta	1,876	2,341
Group Functions & Other	-1,510	-2,503
Eliminations	-14	-12
<b>Industrial Operations</b>	<b>45,150</b>	<b>38,249</b>
Financial Services	2,766	2,411
Reclassifications and eliminations	-6	-
<b>Volvo Group adjusted operating income</b>	<b>47,910</b>	<b>40,660</b>
Adjustments <sup>1</sup>	1,621	-6,182
<b>Volvo Group operating income</b>	<b>49,531</b>	<b>34,478</b>

1 For more information on adjusted operating income, please see section for Key ratios.

Adjusted operating margin, %	2019	2018
Trucks	11.4	10.5
Construction Equipment	13.4	13.4
Buses	4.3	3.0
Volvo Penta	14.1	17.0
<b>Industrial Operations</b>	<b>10.8</b>	<b>10.1</b>
<b>Volvo Group adjusted operating margin</b>	<b>11.1</b>	<b>10.4</b>
<b>Volvo Group operating margin</b>	<b>11.5</b>	<b>8.8</b>



Change in operating income, Volvo Group SEK bn	Change (excluding currency)	Currency impact	Total
<b>Operating income 2018</b>			<b>34.5</b>
Change in gross income Industrial operations	10.9	6.2	17.1
Change in gross income Financial Services	0.6	0.0	0.6
Higher credit losses	-0.2	0.0	-0.2
Gain on sale of in-/tangible assets	0.2	0.0	0.2
Higher capitalization of development cost	0.2	0.0	0.2
Higher research and development expenses	-2.4	-0.4	-2.8
Higher selling and administrative expenses	-0.8	-1.4	-2.2
Sale of WirelessCar 2019	1.6	0.0	1.6
Sale of Inner Mongolia North Hauler Joint Stock Co.Ltd shares 2018	-0.8	0.0	-0.8
Income from investments in joint ventures and associated companies	0.7	0.0	0.7
Volvo profit sharing program	0.1	0.0	0.1
Other	0.6	-0.1	0.5
<b>Operating income 2019</b>	<b>10.7</b>	<b>4.3</b>	<b>49.5</b>

Impact of exchange rates on operating income, Volvo Group, Compared with preceding year, SEK M	
Net sales <sup>1</sup>	21,591
Cost of sales	-15,436
Research and development expenses	-425
Selling and administrative expenses	-1,432
Other	-47
<b>Total effect of changes in exchange rates on operating income</b>	<b>4,252</b>

<sup>1</sup> The Volvo Group sales are reported at monthly average rates.

### Impact of exchange rates on operating income

Operating income for 2019 in the Volvo Group was positively impacted by approximately SEK 4.3 billion from changes in exchange rates. The positive impact was related to net flows in foreign currency by SEK 2.0 billion, revaluation of receivables and liabilities by SEK 0.3 billion and translation of operating income in foreign subsidiaries by SEK 2.0 billion.

The net flows in foreign currency were positively impacted by the appreciation of USD, GBP and CAD, offset by a negative impact from the appreciation of KRW.

» Read more in Note 4 Goals and policies in financial risk management regarding Industrial Operations transaction exposure from operating net flows, graph 4:5, as well as currency impact on sales and operating income.

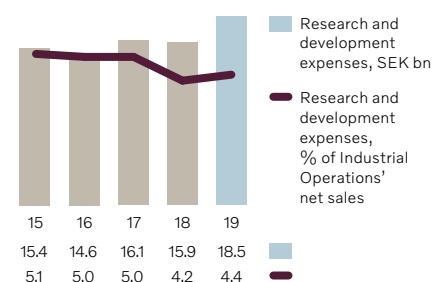
### Net financial items

Compared to the preceeding year, interest income increased by SEK 0.1 billion SEK to SEK 0.3 billion, as a result of higher cash assets. Interest expenses amounted to SEK 1.7 billion (-1.7). During the year interest expenses on lease liabilities have increased as a result of applying the new lease accounting standard as of January 1, 2019, which

Key operating ratios, Industrial Operations, %	2019	2018
Gross margin	23.7	21.7
Research and development expenses as percentage of net sales	4.4	4.2
Selling expenses as percentage of net sales	7.3	7.6
Administrative expenses as percentage of net sales	1.4	1.5
<b>Operating margin</b>	<b>11.2</b>	<b>8.5</b>

Expenses by nature, SEK M	2019	2018
Material cost (freight, distribution, warranty) and purchased services	271.021	256.067
Personnel	64.191	59.998
Amortization/depreciation	20.585	18.440
Other	28.574	21.559
<b>Total</b>	<b>384.371</b>	<b>356.064</b>

### Research and development expenses



was partly offset by lower outstanding debt. Other financial income and expense amounted to SEK -1.3 billion (-0.9). The change compared to 2018 was primarily related to unrealized revaluation and realized result on derivatives.

» Read more in Note 9 Other financial income and expenses.

### Income taxes

The tax expense for the year amounted to SEK 10.3 billion (6.8) corresponding to an effective tax rate of 22% (21). The tax rate was impacted mainly by the non-taxable capital gain related to the divestment of the majority of Volvo Group shares in WirelessCar as well as tax settlements.

### Income for the period and earnings per share

In 2019 the income for the period amounted to SEK 36,495 M (25,363). Earnings per share amounted to SEK 17.64 (12.25) and diluted earnings per share to SEK 17.64 (12.24). Return on total equity was 27.0% (21.3). ■



## FINANCIAL POSITION

## CONTINUED STRENGTHENED FINANCIAL POSITION

**Balance sheet**

Total assets in the Volvo Group amounted to SEK 524.8 billion as of December 31, 2019, an increase of SEK 50.2 billion compared to year-end 2018. Applying the new lease accounting standard total assets increased by SEK 6.2 billion. Currency effects from revaluation of assets in foreign subsidiaries had a positive impact of SEK 13.1 billion. Adjusted for both currency effects and the impact from the new lease accounting standard total assets increased by SEK 30.9 billion. The increase was mainly in cash and cash equivalents and customer-financing receivables, counterbalanced by a decrease in inventory. Customer-financing receivables increased by SEK 20.2 billion, offset by a decrease of SEK 4.1 billion related to a reclassification of assets held for sale. The increase is an effect of higher new business volume in Financial Services. Cash and cash equivalents increased by SEK 14.5 billion as an effect of the positive operating cash flow. Inventory levels decreased by SEK 9.1 billion, whereof SEK 5.5 billion was related to reclassification of assets held for sale.

» Read more in Note 15 Customer-financing receivables.

» Read more in Note 17 Inventories.

» Read more in Note 18 Cash and cash equivalents.

The net value of assets and liabilities held for sale increased by SEK 22.2 billion during the year, mainly due to the intention to transfer ownership of the complete UD Trucks business globally from the Volvo Group to Isuzu Motors.

» Read more in Note 3 Acquisitions and divestments of shares in subsidiaries, regarding assets and liabilities held for sale.

Investments in joint ventures and associated companies increased by SEK 1.8 billion during the year, mainly driven by the profits in Dongfeng Commercial Vehicle Co. Ltd.

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations.

The net value of assets and liabilities related to pensions and similar obligations amounted to a liability of SEK 18.3 billion as of December 31, 2019, an increase of SEK 3.4 billion compared to year-end 2018. This was mainly due to remeasurements of defined benefit pension plans by SEK 3.6 billion. The increase is primarily an effect of lower long-term interest rates in all countries.

» Read more in Note 20 Provisions for post-employment benefits.

On December 31, 2019 the total equity for the Volvo Group amounted to SEK 141.7 billion compared to SEK 125.8 billion at year-end 2018. The equity ratio was 27.0% (26.5) on December 2019. On the same date the equity ratio in the Industrial operations amounted to 33.1% (31.9).

**Net financial position**

During 2019, net financial assets in the Volvo Group's Industrial Operations, excluding provisions for post-employment benefits and lease liabilities increased by SEK 18.7 billion resulting in a net financial asset position of SEK 62.6 billion on December 31, 2019. The change during the year was mainly explained by positive operating cash flow of SEK 38.3 billion and the divestment of the majority of the Volvo Group's holding of shares in WirelessCar, by SEK 1.3 billion. The dividend to AB Volvo shareholders of SEK 20.3 billion had a negative impact. Currency movements decreased the net financial assets by SEK 0.6 billion.

Including provisions for post-employment benefits and lease liabilities the Industrial Operations had net financial assets of SEK 37.3 billion. Applying the new lease accounting standard IFRS 16, lease liabilities increased by SEK 6.1 billion in Industrial Operations as of January 1, 2019 and thereby decreased net financial assets by the same amount. Provisions for post-employment benefits increased by SEK 3.4 billion during the year.

» Read more in Note 3 Acquisitions and divestments of shares in subsidiaries, about the divestment of WirelessCar.

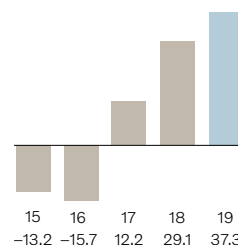
» Read more in Note 20 Provisions for post-employment benefits.

The Volvo Group's cash and cash equivalents amounted to SEK 61.5 billion on December 31, 2019, an increase of SEK 14.5 billion as an effect of the positive operating cash flow. In addition to this, granted but unutilized credit facilities amounted to SEK 43.0 billion (44.0). Cash and cash equivalents include SEK 2.4 billion (1.9) that is not available to use by the Volvo Group and SEK 9.1 billion (5.6) where other limitations exist, mainly in countries where exchange controls or other legal restrictions apply.

» Read more in Note 18 Cash and cash equivalents.

» Read more in Note 22 Liabilities, regarding the maturity structure on Volvo Group's credit facilities.

**Net financial position, incl. provisions for post-employment benefits and lease liabilities, Industrial Operations, SEK bn**





BALANCE SHEET VOLVO GROUP – ASSETS									
SEK M		Industrial Operations		Financial Services		Eliminations		Volvo Group	
		Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
<b>Assets</b>									
<b>Non-current assets</b>									
Intangible assets	Note 12	36,467	37,889	202	215	–	–	36,668	38,104
<i>Tangible assets</i>	Note 13								
Property, plant and equipment		53,348	55,604	86	42	–	–	53,433	55,646
Investment property		63	27	–	–	–	–	63	27
Assets under operating leases		33,794	32,700	22,602	22,154	–13,070	–11,751	43,326	43,103
<i>Financial assets</i>									
Investments in joint ventures and associated companies	Note 5	12,955	11,135	–	–	–	–	12,955	11,135
Other shares and participations	Note 5	139	731	19	9	–	–	158	740
Non-current customer-financing receivables	Note 15	896	891	72,115	66,154	–1,127	–898	71,883	66,148
Net pension assets	Note 20	1,663	1,549	–	–	–	–	1,663	1,549
Non-current interest-bearing receivables	Note 16	815	1,300	120	–	–120	–5	815	1,296
Other non-current receivables	Note 16	8,927	9,030	220	244	–703	–538	8,444	8,736
Deferred tax assets	Note 10	12,261	12,506	979	999	1	–	13,242	13,505
<b>Total non-current assets</b>		<b>161,327</b>	<b>163,363</b>	<b>96,342</b>	<b>89,817</b>	<b>–15,019</b>	<b>–13,191</b>	<b>242,650</b>	<b>239,989</b>
<b>Current assets</b>									
Inventories	Note 17	56,080	65,366	564	417	–	–	56,644	65,783
<i>Current receivables</i>									
Customer-financing receivables	Note 15	675	669	71,299	60,860	–875	–750	71,099	60,779
Tax assets		1,287	1,326	511	343	–	–	1,797	1,669
Interest-bearing receivables	Note 16	4,102	2,581	345	1	–2,518	–485	1,929	2,097
Internal funding <sup>1</sup>		21,283	21,465	–	–	–21,283	–21,465	–	–
Accounts receivables	Note 16	35,827	40,376	1,896	1,530	–	–	37,723	41,906
Other receivables	Note 16	17,835	15,095	1,616	1,258	–889	–1,210	18,562	15,144
Marketable securities	Note 18	200	160	0	–	–	–	200	160
Cash and cash equivalents	Note 18	57,475	43,747	4,999	4,419	–1,014	–1,233	61,461	46,933
Assets held for sale	Note 3	28,427	203	4,345	–	–	–	32,773	203
<b>Total current assets</b>		<b>223,190</b>	<b>190,989</b>	<b>85,576</b>	<b>68,829</b>	<b>–26,578</b>	<b>–25,143</b>	<b>282,187</b>	<b>234,675</b>
<b>Total assets</b>		<b>384,517</b>	<b>354,351</b>	<b>181,917</b>	<b>158,646</b>	<b>–41,597</b>	<b>–38,334</b>	<b>524,837</b>	<b>474,663</b>

1 Internal funding is internal lending from Industrial Operations to Financial Services.

BALANCE SHEET VOLVO GROUP – EQUITY AND LIABILITIES									
		Industrial Operations		Financial Services		Eliminations		Volvo Group	
SEK M		Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
<b>Equity and liabilities</b>									
Equity attributable to owners of AB Volvo		Note 19	124,067	110,692	14,533	12,687	–5	–	138,595 123,379
Non-controlling interest		Note 11	3,083	2,452	–	–	–	–	3,083 2,452
<b>Total equity</b>			<b>127,150</b>	<b>113,144</b>	<b>14,533</b>	<b>12,687</b>	<b>–5</b>	<b>–</b>	<b>141,678 125,831</b>
<i>Non-current provisions</i>									
Provisions for post-employment benefits		Note 20	19,850	16,374	138	108	–	–	19,988 16,482
Provisions for deferred taxes		Note 10	1,667	1,472	2,676	2,656	–	–	4,343 4,128
Other provisions		Note 21	13,965	13,991	220	278	401	321	14,585 14,590
<b>Total non-current provisions</b>			<b>35,482</b>	<b>31,836</b>	<b>3,034</b>	<b>3,042</b>	<b>401</b>	<b>321</b>	<b>38,916 35,199</b>
<i>Non-current liabilities</i>									
Bond loans		Note 22	65,754	59,115	–	–	–	–	65,754 59,115
Other loans		Note 22	19,871	13,411	16,956	15,638	–965	–954	35,862 28,095
Internal funding <sup>1</sup>			–60,635	–54,024	61,660	58,750	–1,025	–4,726	– –
Other liabilities		Note 22	43,602	39,369	1,850	1,621	–9,141	–8,040	36,311 32,949
<b>Total non-current liabilities</b>			<b>68,592</b>	<b>57,871</b>	<b>80,466</b>	<b>76,009</b>	<b>–11,131</b>	<b>–13,720</b>	<b>137,927 120,160</b>
<b>Current provisions</b>		Note 21	<b>11,424</b>	<b>13,013</b>	<b>172</b>	<b>222</b>	<b>312</b>	<b>213</b>	<b>11,907 13,448</b>
<i>Current liabilities</i>									
Bond loans		Note 22	31,759	26,657	–	–	–	–	31,759 26,657
Other loans		Note 22	12,675	12,950	14,567	11,154	–2,866	–2,114	24,377 21,989
Internal funding <sup>1</sup>			–37,098	–32,781	59,266	49,907	–22,169	–17,126	– –
Trade payables			66,590	72,683	276	947	–	–	66,866 73,630
Tax liabilities			2,920	3,493	573	256	–	–	3,493 3,749
Other liabilities		Note 22	59,097	55,485	4,543	4,421	–6,139	–5,907	57,502 53,999
Liabilities held for sale		Note 3	5,927	–	4,486	–	–	–	10,413 –
<b>Total current liabilities</b>			<b>141,870</b>	<b>138,487</b>	<b>83,712</b>	<b>66,685</b>	<b>–31,174</b>	<b>–25,148</b>	<b>194,410 180,025</b>
<b>Total equity and liabilities</b>			<b>384,517</b>	<b>354,351</b>	<b>181,917</b>	<b>158,646</b>	<b>–41,597</b>	<b>–38,334</b>	<b>524,837 474,663</b>

1 Internal funding is internal lending from Industrial Operations to Financial Services.





<b>Net financial position excl. post-employment benefits and lease liabilities</b>				
SEK M	Industrial Operations		Volvo Group	
	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
<i>Non-current interest-bearing assets</i>				
Non-current customer-financing receivables	–	–	71,883	66,148
Non-current interest-bearing receivables	815	1,300	815	1,296
<i>Current interest-bearing assets</i>				
Customer-financing receivables	–	–	71,099	60,779
Interest-bearing receivables	4,102	2,581	1,929	2,097
Internal funding	21,283	21,465	–	–
Marketable securities	200	160	200	160
Cash and cash equivalents	57,475	43,747	61,461	46,933
Assets held for sale	–	–	4,146	–
<b>Total interest-bearing financial assets</b>	<b>83,874</b>	<b>69,254</b>	<b>211,533</b>	<b>177,413</b>
<i>Non-current interest-bearing liabilities</i>				
Bond loans	–65,754	–59,115	–65,754	–59,115
Other loans	–14,504	–13,411	–30,528	–28,095
Internal funding	60,635	54,024	–	–
<i>Current interest-bearing liabilities</i>				
Bond loans	–31,759	–26,657	–31,759	–26,657
Other loans	–10,899	–12,950	–22,621	–21,989
Internal funding	37,098	32,781	–	–
Liabilities held for sale	3,906	–	–	–
<b>Total interest-bearing financial liabilities excl. lease liabilities</b>	<b>–21,278</b>	<b>–25,328</b>	<b>–150,662</b>	<b>–135,857</b>
<b>Net financial position excl. post-employment benefits and lease liabilities</b>	<b>62,596</b>	<b>43,926</b>	<b>60,871</b>	<b>41,556</b>

<b>Provisions for post-employment benefits and lease liabilities, net</b>				
SEK M	Industrial Operations		Volvo Group	
	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
Non-current lease liabilities	–5,366	–	–5,334	–
Current lease liabilities	–1,776	–	–1,755	–
Provisions for post-employment benefits, net	–18,187	–14,825	–18,325	–14,933
<b>Provisions for post-employment benefits and lease liabilities, net</b>	<b>–25,329</b>	<b>–14,825</b>	<b>–25,414</b>	<b>–14,933</b>

<b>Net financial position incl. post-employment benefits and lease liabilities</b>				
SEK M	Industrial Operations		Volvo Group	
	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
Net financial position excl. post-employment benefits and lease liabilities	62,596	43,926	60,871	41,556
Provisions for post-employment benefits and lease liabilities, net	–25,329	–14,825	–25,414	–14,933
<b>Net financial position incl. post-employment benefits and lease liabilities</b>	<b>37,267</b>	<b>29,101</b>	<b>35,457</b>	<b>26,623</b>

<b>Changes in net financial position, Industrial operations</b>		
SEK bn	2019	2018
<b>Net financial position excl. post-employment benefits and lease liabilities at the end of previous period</b>	<b>43.9</b>	<b>26.3</b>
Operating cash flow	38.3	26.6
Investments and divestments of shares, net	0.1	1.0
Acquired and divested operations, net	1.3	-0.2
Capital injections to/from Financial Services	1.3	0.3
Currency effect	-0.6	-0.6
Dividend to owners of AB Volvo	-20.3	-8.6
Dividend to non-controlling interest	0.0	0.0
Change in provision for post-employment benefits related to pension payments included in operating cash flow	-2.6	-2.2
Other changes	1.2	1.3
<b>Net financial position excl. post-employment benefits and lease liabilities at the end of period</b>	<b>62.6</b>	<b>43.9</b>
<b>Provisions for post-employment benefits and lease liabilities at the end of previous period</b>	<b>-14.8</b>	<b>-14.1</b>
Transition effect IFRS 16	-6.1	-
<b>Provisions for post-employment benefits and lease liabilities after transition effect IFRS 16 at the beginning of period</b>	<b>-20.9</b>	<b>-14.1</b>
Pension payments, included in operating cash flow	2.6	2.2
Remeasurements of defined benefit pension plans	-3.6	-0.5
Service costs and other pension costs	-2.3	-1.9
Investments and amortizations of lease contracts	0.0	-
Currency effect	-0.3	-0.6
Other changes	-0.9	0.0
<b>Provisions for post-employment benefits and lease liabilities at the end of period</b>	<b>-25.3</b>	<b>-14.8</b>
<b>Net financial position incl. post-employment benefits and lease liabilities at the end of period</b>	<b>37.3</b>	<b>29.1</b>

## CASH FLOW STATEMENT

## IMPROVED OPERATING CASH FLOW

**D**uring 2019 operating cash flow in the Industrial Operations amounted to SEK 38.3 billion (26.6).

The improved operating cash flow within Industrial Operations is primarily related to the improved operating income combined with an unchanged level of working capital due to a reduction of inventory levels, counterbalanced by a decrease in trade payables. The decrease in trade payables is mainly an effect of a reduction in production levels.

In 2018 other non-cash items were negatively impacted by a provision of SEK 7.0 billion related to estimated costs to address the issue of an emission control component that may degrade more quickly than expected, affecting the vehicles emission performance negatively. The negative cash flow effects related to measures to address the issue have started in 2019 and will gradually ramp up in the coming years.

Income taxes paid in the Industrial Operations increased by SEK 2.1 billion compared to 2018.

Operating cash flow within Financial Services was negative in an amount of SEK 14,0 billion (–10,4), mainly due to a growing credit portfolio.

» Read more in Note 10 Income taxes.

» Read more in Note 21 Other provisions.

#### Investments and disposals

The Industrial Operations' investments in tangible assets and capitalized research and development during 2019 amounted to SEK 11.9 billion (10.7).

Investments in Trucks in tangible assets and capitalized research and development amounted to SEK 9.3 billion (7.7). The major investments related to industrial efficiency measures in our plants continued, with replacement of casting process equipment in Skövde, Sweden. Replacements and upgrades in our US plants as well as in Europe were also done. Capital expenditures were also related to product renewals, the development of electric trucks, emission upgrades with both product development activities and required adaptations in the plants.

The investments in dealer networks and workshops were mainly done in Europe primarily for upgrade and replacements.

Investments in Construction Equipment amounted to SEK 1.1 billion (0.9). The major investments in the plants were mainly related to product renewals, and industrial efficiency measures mainly in Asia but also in Europe. The product related investments during the year were mainly related to continued investments in tooling and required adaptations in the plants for excavators.

The investments during the year were SEK 0.3 billion (0.4) in Buses, and in Volvo Penta SEK 0.5 billion (0.6).

The investment level for property, plant and equipment during 2019 was above last year. During 2020, investments in property, plant and equipment are expected to continue to increase compared to 2019. Optimization of the industrial footprint, replacements, dealer investments and product related tooling will continue to be the main areas as well as real estate investments in Gothenburg, Sweden.

#### Investments and divestments of all shares

During 2019 Volvo Group divested all shares in Terratech AB. The total cash flow impact from the divestment amounted to SEK 0.3 billion. In total, investments and divestments of shares in 2019 had a positive impact on cash flow of SEK 0.1 billion (1.0).

» Read more in Note 5 Investments in joint venture, associated companies and other shares and participations.

#### Acquired and divested operations

In total acquired and divested operations in 2019 had a positive impact on cash flow of SEK 1.3 billion (–0.2), which was related to the divestment of the majority of Volvo Group shares in WirelessCar.

» Read more in Note 3 Acquisitions and divestments of shares in subsidiaries.

#### Financing and dividend

Net borrowings increased by SEK 9.3 billion during 2019 due to a growing credit portfolio in Financial Services. In 2018 the corresponding item increased by SEK 1.9 billion.

During the year a dividend of SEK 20.3 billion, corresponding to an ordinary dividend of SEK 5.00 per share, and an extraordinary dividend of SEK 5.00 per share was paid to the shareholders of AB Volvo.

» Read more in Note 29 Cash flow regarding change in loans during 2019.

#### Change in cash and cash equivalents

The Volvo Group's cash and cash equivalents increased by SEK 14.5 billion during the year due to the higher operating cash flow and amounted to SEK 61.5 billion at December 31, 2019. ■

» Read more in Note 29 Cash flow regarding principles for preparing the cash flow statement.

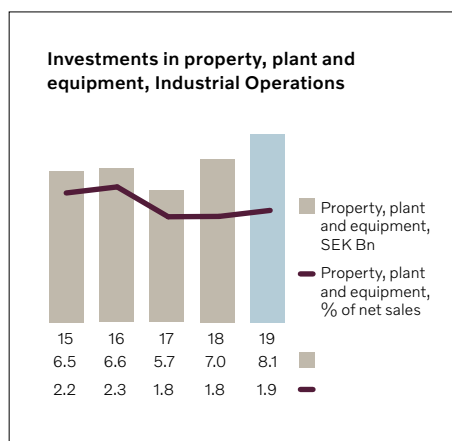
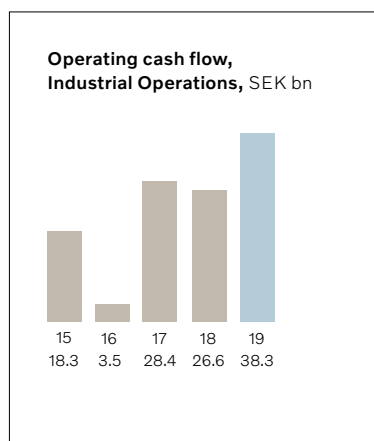
» Read more in Note 18 Cash and cash equivalents regarding the accounting policy.



CONSOLIDATED CASH FLOW STATEMENTS									
		Industrial Operations		Financial Services		Eliminations		Volvo Group	
SEK M		2019	2018	2019	2018	2019	2018	2019	2018
<b>Operating activities</b>									
Operating income		46,771	32,067	2,766	2,411	-6	-	49,531	34,478
Amortization intangible assets	Note 12	2,911	2,988	51	36	0	-	2,963	3,024
Depreciation tangible assets	Note 13	8,372	6,354	30	6	0	-	8,402	6,361
Depreciation leasing vehicles	Note 13	4,514	4,448	4,707	4,606	0	0	9,221	9,054
Other non-cash items	Note 29	-3,599 <sup>1</sup>	8,940 <sup>2</sup>	1,033	754	-203	-32	-2,769	9,661
Total change in working capital whereof		-486	-10,967	-18,039	-13,029	290	290	-18,235	-23,706
Change in accounts receivables		65	-2,455	-363	-456	0	0	-298	-2,911
Change in customer-financing receivables		36	-77	-16,951	-14,002	355	193	-16,560	-13,886
Change in inventories		4,964	-12,559	30	141	0	0	4,994	-12,419
Change in trade payables		-2,643	5,384	-678	491	0	0	-3,322	5,875
Other changes in working capital		-2,907	-1,260	-78	797	-65	97	-3,050	-366
Interest and similar items received		794	631	2	-	18	13	814	644
Interest and similar items paid		-1,177	-1,334	-8	-	81	27	-1,104	-1,307
Other financial items		-371	-183	-	-	-3	-	-374	-183
Income taxes paid		-8,734	-6,593	-668	-245	0	0	-9,401	-6,838
<b>Cash flow from operating activities</b>		<b>48,996</b>	<b>36,351</b>	<b>-10,127</b>	<b>-5,462</b>	<b>178</b>	<b>298</b>	<b>39,047</b>	<b>31,187</b>
<b>Investing activities</b>									
Investments in intangible assets		-3,876	-3,682	-77	-63	-	-	-3,954	-3,746
Investments in tangible assets		-8,059	-6,983	-4	-6	0	-	-8,064	-6,989
Investment in leasing vehicles		-102	-13	-9,890	-10,120	-	-	-9,991	-10,133
Disposals of in-/tangible assets and leasing vehicles		1,350	924	6,074	5,276	-6	-	7,418	6,201
<b>Operating cash flow</b>		<b>38,309</b>	<b>26,597</b>	<b>-14,024</b>	<b>-10,376</b>	<b>172</b>	<b>298</b>	<b>24,455</b>	<b>16,520</b>
Investments and divestments of shares, net	Note 5, 29							92	970
Acquired and divested operations, net	Note 29							1,343 <sup>1</sup>	-170
Interest-bearing receivables incl marketable securities								-1,033	69
<b>Cash flow after net investments</b>								<b>24,857</b>	<b>17,389</b>
<b>Financing activities</b>									
Change in loans, net	Note 29							9,342	1,943
Dividend to shareholders of AB Volvo								-20,335	-8,636
Dividend to non-controlling interest								-12	-6
Other								188	0
<b>Change in cash and cash equivalents excl. translation differences</b>								<b>14,040</b>	<b>10,691</b>
Translation difference on cash and cash equivalents								487	150
<b>Change in cash and cash equivalents</b>								<b>14,528</b>	<b>10,841</b>
<b>Cash and cash equivalents, beginning of year</b>	Note 18							<b>46,933</b>	<b>36,092</b>
<b>Cash and cash equivalents, end of year</b>	Note 18							<b>61,461</b>	<b>46,933</b>

1 The gain on sale of WirelessCar of SEK 1.6 billion has been reclassified from other non-cash items to acquired and divested operations, net. The total cash flow impact from the sale amounted to SEK 1.3 billion.

2 In 2018, other non-cash items was impacted by the provision of SEK 7 billion relating to estimated costs to address the issue of an emission control component that may degrade more quickly than expected.



## TRUCKS

# BOTH INCREASED SALES AND IMPROVED PROFITABILITY

**T**he truck business increased its sales by 11% to SEK 276.6 billion on the back of continued good market demand in many markets during the first half of 2019, including Europe, North America and South America. In the second half of the year, demand weakened in both Europe and North America. The adjusted operating income amounted to SEK 31,552 (26,351) M corresponding to a margin of 11.4% (10.5).

## Good first half, weaker second half in many markets

Over the last couple of years there has been both fleet renewal and fleet expansion in the European and North American truck markets. This has increased the freight capacity, which during 2019 caught up with transport demand. This could gradually be noticed in both lower freight rates and used vehicle prices. In the near term these markets are expected to be driven primarily by fleet renewals. European heavy-duty truck registrations are estimated to have been flat in 2019 while the North American heavy-duty truck market grew by 8%. Transport activity remained on a good level in both these markets, but customers held back on orders for new trucks to assure fleet utilization in times of economic uncertainty.

In Brazil, the market growth continued and the increase in demand was supported by the need for fleet renewal. The heavy-duty truck market grew by 42%.

The truck market in India declined substantially, affected by tight credit conditions for truck financing, lower economic activity in general and lower investment sentiment.

The shift towards heavy-duty trucks in China continued. The heavy-duty truck market was up by 2%, while the medium-duty volumes were down by 21% compared with 2018.

In Japan, the heavy-duty truck market grew by 3%.

## Orders and deliveries

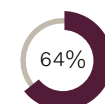
Order intake to the Group's wholly-owned truck operations decreased by 27% to 182,746 (257,504) trucks. Order intake increased in South America, but declined in all other regions, with a particularly big drop in North America, which had extremely strong levels in 2018.

In 2019, a total of 232,769 trucks were delivered from the Group's wholly-owned operations, an increase of 3% compared with 226,490 trucks in 2018. Deliveries in Europe decreased, whereas they increased in North America as the big order backlog from 2018 was delivered. Deliveries also increased in South America, while they decreased in Asia as well as in Africa and Oceania.

## IN BRIEF

The truck operation's product offer stretches from heavy-duty trucks for long-haulage and construction work to light-duty trucks for distribution. The offering also includes maintenance and repair services, financing and leasing.

### Share of Group sales



### Share of net sales

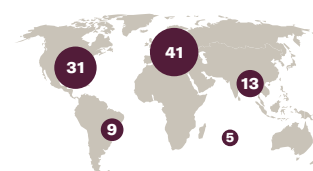


● Vehicles, 77%  
● Services, 23%

### Position on world market

Volvo Group is the world's second largest manufacturer of heavy-duty trucks.

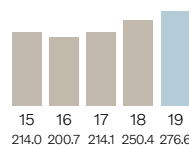
### Share of net sales by market, %



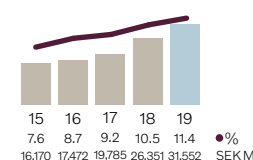
### Number of regular employees

59,142 (58,891).

### Net sales, SEK bn



### Adjusted operating income<sup>1</sup> and adjusted operating margin



## TRUCK BRANDS



<sup>1</sup> For information on adjusted operating income, please see Key Ratios on page 212.

# LIMITED EDITION MACK BLACK ANTHEM

## SPECIAL EDITION



At the North American Commercial Vehicle show in Atlanta in October, Mack Trucks introduced the limited edition Mack Black Anthem, a special run of 500 Mack Anthem models that redefines what it means to operate in the black. Featuring a blacked-out exterior trim package and additional interior features, the Mack Black Anthem gives customers the opportunity to make a bold statement while still realizing the business benefits that come from partnering with Mack.





### Improved profitability

In 2019, net sales in the truck operations increased by 11% to SEK 276,647 (250,358). Adjusted for currency movements, net sales increased by 5%, of which vehicle sales grew by 6% and service sales by 3%.

In 2019, the adjusted operating income amounted to SEK 31,552 M (26,351) corresponding to a margin of 11.4% (10.5). There were no adjustments in 2019. Adjusted operating income in 2018 excluded a provision of SEK 6,810 M relating to estimated costs to address the issue of an emission control component. The improved earnings were mainly a result of increased service sales, price realization and a positive customer mix, while increased R&D expenses as well as selling expenses had a negative impact. Operating income includes capital gains of SEK 707 M from divestments of real estate. The reported operating income amounted to SEK 31,552 M (19,541). Currency movements had a positive impact of SEK 2,203 M compared with 2018.

### Important events

Volvo Trucks introduced Volvo FH with I-Save for customers in Europe. By combining the new D13TC (turbo compound) engine with updated fuel-saving features, this new solution can save fuel costs by up to 7% in long-haul operations – without compromising drivability.

The Volvo Group announced a four-year, SEK 1.6 billion investment in the plant in Skövde, Sweden to improve flexibility regarding future products and materials in the foundry.

In the summer Renault Trucks handed over the first fully-electric 26-ton refuse truck to its customer Lyon Metropole. Volvo Trucks handed over the first Volvo FL and Volvo FE trucks for city transport and refuse operations to customers. In Q4, both Volvo Trucks and Renault Trucks started selling electric trucks for urban transport and refuse operations, meeting the increasing demand for sustainable transport solutions in city environments. In December, Volvo Trucks presented heavy-duty electric concept trucks for construc-

tion operations and regional transport. With these applications Volvo Trucks will explore, demonstrate and evaluate different solutions. Furthermore, the Mack LR battery electric refuse vehicle was unveiled. Real world testing in the demanding operations of the New York City Department of Sanitation will begin in 2020.

In September, Volvo Trucks North America, for the first time, showed the Volvo VNR Electric truck for media and customers. Limited commercial production will start in 2020 – with the first deliveries being part of the partnership known as LIGHTS (Low Impact Green Heavy Transport Solutions) between the Volvo Group, California's South Coast Air Quality Management District, and industry leaders in transportation and electrical charging infrastructure.

Volvo Trucks announced the first assignment for Vera, its electric, connected and autonomous vehicle. In a collaboration with the logistics company DFDS, Vera will form part of an integrated solution to transport goods from a logistics center to a port terminal in Gothenburg, Sweden.

Volvo Trucks announced the introduction of the successful Volvo Dynamic Steering system in North America. The system is designed to lessen steering force by up to 85%, helping reduce driver fatigue and increase road safety.

In December, it was announced that the Volvo Group and Isuzu Motors have signed a non-binding Memorandum of Understanding with the intent to form a strategic alliance within commercial vehicles by establishing a global technology partnership and transferring the ownership of the entire UD Trucks business globally from the Volvo Group to Isuzu Motors. Signing of binding agreements is expected by mid-2020 and closing of the transaction is expected by the end of 2020.

In January 2020, Mack Trucks launched the all-new Mack MD series of medium-duty trucks, adding to its already robust product lineup to reach new customers and applications. Serial production of the Mack MD Series will begin in July 2020. ■

### RENAULT TRUCKS T HIGH 1894



### LIMITED ANNIVERSARY EDITION

In 2019, Renault Trucks celebrated its 125 years of history with a new limited edition, named the T High 1894 Edition. Combining a modern style with allusions to the history of the brand, just 125 of these vehicles were marketed in Europe. The French manufacturer paid tribute to its roots with this truck, which features the colors of the logo of Berliet, the origin of Renault Trucks.

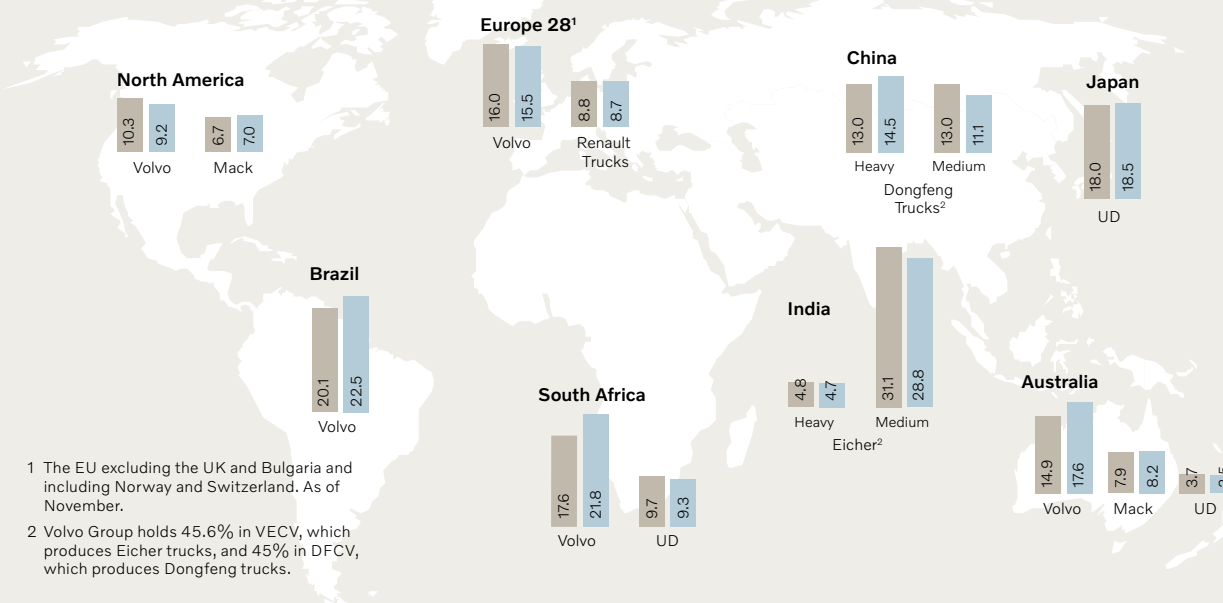




## STRONG POSITIONS GLOBALLY

Market shares, heavy-duty trucks, %

2018 2019



1 The EU excluding the UK and Bulgaria and including Norway and Switzerland. As of November.

2 Volvo Group holds 45.6% in VECV, which produces Eicher trucks, and 45% in DFCV, which produces Dongfeng trucks.

### Net sales and operating income, SEK M

	2019	2018
Europe	112,125	111,237
North America	85,731	70,233
South America	23,753	16,021
Asia	37,610	36,664
Africa and Oceania	17,427	16,203
<b>Total net sales</b>	<b>276,647</b>	<b>250,358</b>
<b>Of which</b>		
Vehicles	213,071	192,157
Services	63,575	58,201
<b>Adjusted operating income<sup>1</sup></b>	<b>31,552</b>	<b>26,351</b>
Adjustments <sup>1</sup>	-	-6,810
<b>Operating income</b>	<b>31,552</b>	<b>19,541</b>
Adjusted operating margin, %	11.4	10.5
Operating margin, %	11.4	7.8

1 For information on adjusted operating income, please see Key Ratios on page 212.

### Deliveries by market, Number of trucks

	2019	2018
Europe	104,145	110,349
North America	62,308	53,877
South America	23,729	16,146
Asia	29,435	32,276
Africa and Oceania	13,152	13,842
<b>Total deliveries</b>	<b>232,769</b>	<b>226,490</b>
Heavy duty (>16 tons)	201,092	193,886
Medium duty (7–16 tons)	12,700	14,065
Light duty (<7 tons)	18,977	18,539
<b>Total deliveries</b>	<b>232,769</b>	<b>226,490</b>
Volvo	131,254	127,466
UD	19,911	20,636
Renault Trucks	54,098	54,868
Mack	27,506	23,520
<b>Total deliveries</b>	<b>232,769</b>	<b>226,490</b>
<b>Non-consolidated operations</b>		
VE Commercial Vehicles (Eicher)	47,083	63,210
Dongfeng Commercial Vehicle Company (Dongfeng Trucks)	186,039	171,769

## CONSTRUCTION EQUIPMENT

# ANOTHER YEAR OF SOLID PROFITABILITY

**F**or Volvo Construction Equipment (Volvo CE) market demand was good in the first half of 2019, but lower in the second half. Net sales increased by 5% to SEK 88.6 billion and the adjusted operating income rose to SEK 11,910 M (11,306).

Maintaining strong profitability and control of cost across the business cycle lies at the heart of Volvo CE's strategy. Key to this is driving growth and profitability for all product lines and service offerings, with a special focus on excavators. The company is optimizing its presence, brand strategy, R&D, manufacturing and distribution in China, securing customer success and profit growth in this key market. It is also developing the dealer footprint and capability to boost market share worldwide, particularly in the US. These measures help Volvo CE perform today, while helping to fund the development of new technologies within electromobility, autonomy and connectivity. Several advances were made in 2019, helping to transform Volvo CE and provide customers with new products and business models.

## Demand weakened after strong start

After several years of good growth, demand in 2019 started strongly but lost momentum in the second half of the year. This was evidenced in all regions, with the exception of a continued growth in China and a slowly recovering South America. Through November 2019, the European market was up by 6%, driven by continued growth in Germany, Italy, France and Russia while the market in the UK contracted. The North American market was 6% above the same period in 2018 mainly due to an increase in demand for larger machines. In South America the market was 17% up from historically low levels driven by growth in Brazil, while Asia (excluding China) declined by 11%. The Chinese market continued its positive development and was up 8% with growth for both excavators and wheel loaders.

Volvo CE's order intake was flat, 83,953 machines (84,531). Order intake decreased in all markets except China. Total deliveries were up by 5% to 86,885 machines (82,654).

## Stable sales and profitability

Net sales in 2019 rose by 5% to SEK 88,606 M (84,238). Adjusted for currency movements, net sales were on the same level as 2018, with machine sales being flat and service sales increasing by 1%.

Adjusted operating income amounted to SEK 11,910 M (11,306), corresponding to a margin of 13.4% (13.4). There were no adjustments in 2019. Adjusted operating income in 2018 excluded a capital gain of SEK 818 M. Somewhat higher sales and a favorable currency development had a positive impact whereas higher R&D

## IN BRIEF

Volvo CE is one of the leaders in the development of products and services for the construction, extraction, waste processing, forestry and materials handling sectors.

Share of Group sales



Share of net sales

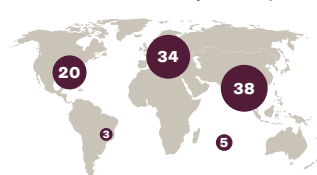


● Construction equipment, 86%  
● Services, 14%

## Position on world market

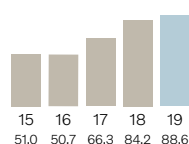
One of the world's leading manufacturers of haulers, wheel loaders and excavators. Also produces road construction machines and compact equipment. The offering includes services such as customer support agreements, machine control systems, attachments, financing and leasing.

Share of net sales by market, %

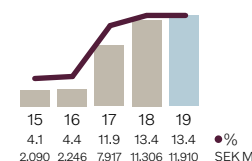


Number of regular employees  
13,756 (13,419).

Net sales, SEK bn



Adjusted operating income<sup>1</sup> and adjusted operating margin



## BRANDS



## MACHINES



<sup>1</sup> For information on adjusted operating income, please see Key Ratios on page 212.

# TESTING REMOTE- CONTROLLED MACHINES

## FIRST 5G NETWORK FOR INDUSTRY

• • •

In March, Telia, Ericsson and Volvo Construction Equipment launched Sweden's first 5G network for industrial use at Volvo CE's facility in Eskilstuna. Volvo CE became one of the first in the world to use 5G technology to test remote-controlled machines and autonomous solutions.





<b>Net sales and operating income, SEK M</b>	<b>2019</b>	<b>2018</b>
Europe	30,300	27,291
North America	17,404	15,575
South America	2,532	2,304
Asia	33,932	33,781
Africa and Oceania	4,437	5,287
<b>Total net sales</b>	<b>88,606</b>	<b>84,238</b>
<b>Of which:</b>		
Construction Equipment	76,506	72,797
Services	12,099	11,441
<b>Adjusted operating income<sup>1</sup></b>	<b>11,910</b>	<b>11,306</b>
Adjustments <sup>1</sup>	–	818
<b>Operating income</b>	<b>11,910</b>	<b>12,125</b>
Adjusted operating margin, %	13.4	13.4
Operating margin, %	13.4	14.4

1 For information on adjusted operating income, please see Key Ratios on page 212.

<b>Deliveries by market, Number of machines</b>	<b>2019</b>	<b>2018</b>
Europe	21,420	19,567
North America	7,278	7,218
South America	2,004	2,023
Asia	53,664	50,716
Africa and Oceania	2,519	3,130
<b>Total deliveries</b>	<b>86,885</b>	<b>82,654</b>
Large and medium construction equipment <sup>1</sup>	64,558	62,143
Compact construction equipment <sup>2</sup>	22,327	20,511
<b>Total deliveries</b>	<b>86,885</b>	<b>82,654</b>
<b>Of which:</b>		
Volvo	41,057	43,654
SDLG	45,682	38,768
Of which in China	40,202	33,851

1 Excavators >10 tons, wheel loaders engine power >120 hp, articulated haulers, rigid haulers and road machinery products.  
2 Excavators <10 tons, wheel loaders engine power <120 hp, skid steer loaders and backhoe loaders.

expenses and selling expenses impacted negatively. Reported operating income amounted to SEK 11,910 M (12,125). Currency movements had a positive impact on operating income of SEK 1.450 M compared with 2018.

### Important events

Volvo CE and SDLG further extended their cooperation. In order to accelerate growth in conjunction with the upcoming China IV emission standards, all excavators above 15 tons for the Chinese market will be based on the latest Stage IV Volvo technology and branded Volvo by December 2020.

Volvo CE launched its first fully electric machines, the L25 wheel loader and the ECR25 compact excavator. Volvo CE also launched hybrid machines (more on electrification below).

In October, Volvo CE signed a contract for the first commercial pilot of the autonomous battery-electric load carrier together with customer Harsco Environmental in Sweden – the next step towards an industrialized solution.

A new mid-sized 20-ton excavator was also launched. It is suitable for construction, utilities and road infrastructure.

Swedish telecoms operator Telia installed its first 5G network for industrial purposes at Volvo CE in Eskilstuna, Sweden (see previous page).

Volvo CE acquired CeDe Group, an adaptor of construction and mining machinery for special applications.

Energy savings took many forms during 2019, including Volvo CE achieving its WWF energy-saving commitment of 40 GWh in its factories – more than two years ahead of schedule. For more information on WWF Climate Savers, please see page 35.

Praised for its ease of use and boost to safety, the machine control system Volvo Active Control won two awards at the Car HMI 2019, Europe's leading automotive human-machine interface and user experience event. ■

### VOLVO CE GOES ELECTRIC



### Electrifying the future

Volvo CE's commitment to a better tomorrow manifests itself in the strongest possible terms: by going electric. The launch of the EC25 Electric compact excavator and L25 Electric compact wheel loader in 2019 is the forefront of the company's long-term shift to an electric future. In February 2020, Volvo CE started taking orders for both electric compact wheel loaders and compact excavators and serial production is planned for Q3 2020. Volvo CE also displayed the EC300E hydraulic-hybrid excavator, whose simple hybrid solution provides a fuel-efficiency improvement of up to 17% and 12% lower CO<sub>2</sub> emissions.





## BUSES

# HIGHER DELIVERIES AND IMPROVED PROFIT

**H**igher deliveries contributed to Volvo Buses increasing its net sales by 20% to SEK 31.0 billion in 2019. The adjusted operating income improved to SEK 1,337 M (765).

Volvo Buses' strategic priorities are to enhance competitiveness and increase profitability by making both operational improvements and transformational changes that further strengthen the commercial offering, improve quality and reduce cost. Transformational changes in 2019 included a simplified and more agile governance model, decentralizing decisions closer to customers and creating an organization based on end-to-end business unit value chains rather than geographies. Consequently, to further strengthen the chassis business, Volvo Buses created a dedicated global organization, Business Unit Chassis, effective January 1, 2020.

## Increased demand for electric buses

Global demand for heavy-duty buses remained high in 2019. The European market stayed on a good level, with high tender volumes in the Nordic region, but with a weak development in the UK. In North America, demand continued to be good for transit buses, whereas the coach market declined. The market in Brazil continued to improve, while the Indian market was very weak.

Deliveries of end-to-end solutions for electrified buses increased. The product range includes hybrid chassis, a range of electrified buses for Europe and Nova Bus hybrid and electric buses for North America. The customer offering also includes battery and charging infrastructure options as well as services. Charging solutions are developed together with ABB and other providers, including end stop fast-charging (OppCharge) and depot charging.

During the year, Volvo Buses received an order for 157 electric articulated buses to Gothenburg. In total, orders for 315 Volvo branded fully electric buses were received. 438 electrified buses were delivered to cities across Europe, confirming electric buses as a sustainable and financially viable solution for high-capacity public transport. More than 4,400 Volvo branded electrified buses have been sold since the start in 2010.

## Breakthrough orders

Volvo Buses signed a contract for the delivery of up to 900 buses over 10 years to the Public Transport Authority of Western Australia, Volvo's largest chassis order to date in Australia. Volvo Buses was also awarded a frame agreement for 373 city buses to Dubai. This is Volvo's largest chassis agreement to date in Dubai, and the largest purchase of Euro VI city buses in the Middle East. Another significant contract was a frame agreement of 168 units to Abu Dhabi.

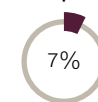
## IN BRIEF

Volvo Buses is a leader in the development of sustainable public transport solutions and is one of the world's largest manufacturers of premium buses, coaches and bus chassis. Volvo Buses has sales in 85 countries and a global service network with more than 1,500 dealerships and workshops. Production facilities are found in Europe, North America, South America and Asia.

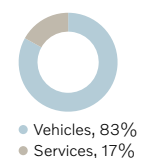
### Position on world market

Volvo Buses is one of the world's largest producers of buses and coaches in the premium segment.

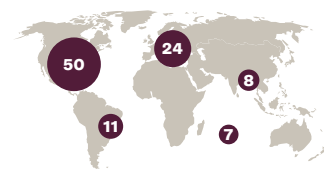
### Share of Group sales



### Share of net sales



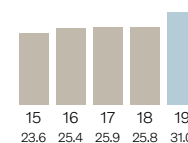
### Share of net sales by market, %



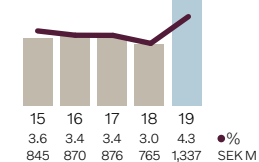
### Number of regular employees

8,324 (8,178)

### Net sales, SEK bn



### Adjusted operating income<sup>1</sup> and adjusted operating margin



## BRANDS



PREVOST

NOVABUS

## BUSES

The offering includes city buses, inter-city buses and coaches as well as associated transport systems, financial services and services for vehicle and traffic information.



<sup>1</sup> For information on adjusted operating income, please see Key Ratios on page 212.



New York State's Metropolitan Transportation Authority ordered 330 Prevost commuter coaches, Prevost's largest order in history.

### Higher sales and earnings

Buses' net sales increased by 20% to SEK 31,019 M compared with SEK 25,826 M in 2018. Adjusted for currency movements, net sales increased by 13%, of which vehicle sales increased by 15%, driven by the volume increase and a high level of complete bus deliveries, and service sales by 6% as a consequence of increased efforts in the service network expansion.

The adjusted operating income amounted to SEK 1,337 M (765), corresponding to a margin of 4.3% (3.0). There were no adjustments in 2019. The adjustment in 2018 was SEK 190 M related to an issue with an emission control component. Earnings were positively impacted by increased volumes and improved market mix, whereas lower capacity utilization and higher selling and administrative expenses had a negative impact. Reported operating income amounted to SEK 1,337 M (575). Changes in currency movements had a positive impact in an amount of SEK 360 M.

### Product and service introductions

Volvo Buses launched the new Volvo 7900 Electric Articulated bus, available as a turnkey solution at a fixed, predetermined cost per kilometer. The bus can carry up to 150 passengers with 80% lower energy consumption than a corresponding diesel bus. At the Busworld exhibition in Brussels, Volvo Buses received the Innovation Label Award for its electric driveline. Volvo's full hybrid buses were upgraded to drive on electricity at higher speeds and for longer distances. The Volvo 9900 premium coach was awarded both the Busworld Safest Coach and the Busworld Best Coach All Categories. The Volvo 9900 also won the Red Dot Product Design Award.

Nanyang Technological University, Volvo Buses and the Land Transport Authority of Singapore demonstrated a pioneering 12-meter fully autonomous electric bus. Autonomous bus depot operations were also demonstrated with customer Keolis in Gothenburg, Sweden. Volvo Buses announced the launch of a new express double-decker coach in early 2020, to supplement its latest 9000 range. ■

#### Net sales and operating income, SEK M

	2019	2018
Europe	7,369	7,036
North America	15,543	13,244
South America	3,281	1,393
Asia	2,617	2,094
Africa and Oceania	2,209	2,060
<b>Total net sales</b>	<b>31,019</b>	<b>25,826</b>

#### Of which:

Vehicles	25,600	20,943
Services	5,419	4,883

<b>Adjusted operating income<sup>1</sup></b>	<b>1,337</b>	<b>765</b>
Adjustments <sup>1</sup>	–	–190
<b>Operating income</b>	<b>1,337</b>	<b>575</b>

Adjusted operating margin, %	4.3	3.0
Operating margin, %	4.3	2.2

<sup>1</sup> For information on adjusted operating income, please see Key Ratios on page 212.

#### Deliveries by market, Number of buses

	2019	2018
Europe	2,350	2,142
North America	3,084	2,796
South America	1,917	973
Asia	1,465	1,451
Africa and Oceania	915	1,064
<b>Total deliveries</b>	<b>9,731</b>	<b>8,426</b>

#### Non-consolidated operations

VE Commercial Vehicles (Eicher)	10,007	10,567
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## CIRCULARITY



### BUS BATTERIES REUSED

Reuse and recycling of batteries are key issues as an increasing number of cities plan their transition to electrically-powered transport. Volvo Buses is partnering with Stena Group to identify residual value of batteries for second life. The program involves 30 battery modules from Volvo buses as units in an energy storage warehouse, storing solar energy for 200 apartments in Gothenburg, Sweden. This use of batteries gives them an extended service life, which means better resource utilization and less environmental impact. It also improves the efficiency of the housing community's own energy system as well as that of the city's power grid.



## VOLVO PENTA

# STABLE SALES BUT LOWER PROFITABILITY

In 2019, Volvo Penta's net sales of SEK 13.3 billion were on the same level as in the previous year. The adjusted operating income declined to SEK 1,876 M (2,341).

Volvo Penta operates in two businesses: Marine (leisure and commercial) and Industrial (off-road and power generation). In the marine segments, Volvo Penta aims to lead the industry, continuing to develop innovative products and solutions. In the Industrial segments, Volvo Penta aims to be a key player, continuing to expand its strong footprint, seeking maximum leverage of Volvo Group assets, such as the engine portfolio, in its offer, and adding value for customers in its application and integration expertise.

Volvo Penta's strategy is to grow profitably and deliver an excellent customer experience. The company aims to continue to perform with its existing product offer in order to be able to transform and embrace new technologies and business opportunities, such as electromobility and a new range of services.

## Market development and engine shipments

During 2019, parts of the marine leisure market softened. However, there was still growth in large yachts, which is a segment where Volvo Penta continued to gain market share. There was a positive development in the marine commercial market, especially within off-shore energy. Interest for electrified solutions continued for segments such as people transportation within urban areas.

The market for industrial off-road engines slowed down due to a decline in construction and agriculture machinery segments. Within agricultural machinery, the effects were seen especially in emerging markets, but also in Europe. Global construction equipment sales showed a slowing trend, but there was growth in Asian and American markets. In Europe, the slowdown was further accentuated by the Stage V-related pre-buy in Europe in 2018. Demand for industrial power generation engines also declined slightly, counterbalanced by growth in the data center back-up business, especially in North America.

In total, Volvo Penta engine deliveries decreased by 19% to 39,459 units (48,505) as a consequence of high deliveries in 2018 in connection with the pre-buy of industrial engines in Europe.

## Lower profitability

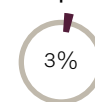
Volvo Penta's net sales decreased by 3% to SEK 13,287 M compared with SEK 13,741 M in 2018. Adjusted for currency movements, net sales decreased by 7%, of which engine sales decreased by 11%, and service sales grew by 3%.

Both the adjusted and reported operating income amounted to SEK 1,876 M (2,341), corresponding to a margin of 14.1% (17.0).

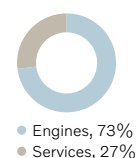
## IN BRIEF

Volvo Penta aims to be the most forward thinking and customer focused supplier of sustainable power solutions. Volvo Penta provides engines and power solutions for leisure and commercial boats, as well as for power generation and industrial, off-road applications.

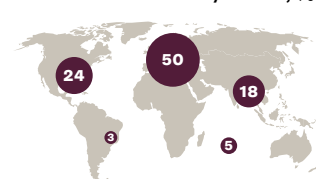
Share of Group sales



Share of net sales



Share of net sales by market, %

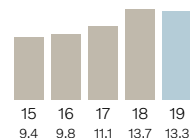


## Position on world market

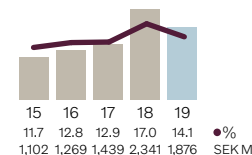
Volvo Penta is the world's largest producer of power systems for leisure boats and a leading provider of power systems for industrial off-road and power generation segments.

Number of regular employees  
1,800 (1,713).

Net sales,  
SEK bn



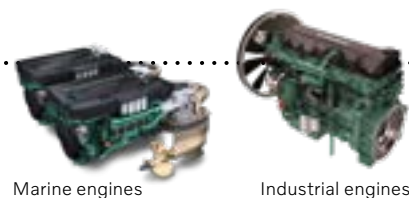
Adjusted operating income<sup>1</sup>  
and adjusted operating margin



## BRANDS

**VOLVO  
PENTA**

## ENGINES



Marine engines

Industrial engines

<sup>1</sup> For information on adjusted operating income, please see Key Ratios on page 212.

**Net sales and operating income, SEK M**

	2019	2018
Europe	6,671	7,487
North America	3,180	2,912
South America	319	299
Asia	2,439	2,443
Africa and Oceania	679	599
<b>Total net sales</b>	<b>13,287</b>	<b>13,741</b>

**Of which:**

Engines	9,698	10,410
Services	3,588	3,330

**Adjusted operating income<sup>1</sup>**

Adjusted operating income <sup>1</sup>	1,876	2,341
Adjustments <sup>1</sup>	–	–
<b>Operating income</b>	<b>1,876</b>	<b>2,341</b>

Adjusted operating margin, % 14.1 17.0

Operating margin, % 14.1 17.0

<sup>1</sup> For information on adjusted operating income, please see Key Ratios on page 212.

Earnings were positively impacted by a favorable product and segment mix and negatively by lower volumes, higher R&D expenses and increased selling expenses. Changes in currency movements had a positive impact in an amount of SEK 226 M.

**Further strengthened customer offer**

During 2019, Volvo Penta rolled out a complete power generation engine range to meet European Stage V emission legislation. The new range includes D16, D13, and D8 engines – developed with ease of installation, operation and maintenance in mind.

**Deliveries by segment, Number of units**

	2019	2018
Marine engines <sup>1</sup>	18,135	20,006
Industrial engines	21,324	28,499
<b>Total deliveries</b>	<b>39,459</b>	<b>48,505</b>

<sup>1</sup> Excluding outboard engines.

Additionally, Volvo Penta launched its new generation of D4/D6 propulsion packages for marine applications, see below.

Designed to meet upcoming IMO III emissions legislation, a new D8 package for marine heavy-duty and genset applications was also showcased for the first time during 2019.

**Electrified solutions and marine automation and connectivity**

During 2019, important steps were taken in the company's journey to offer electrified power solutions to both industrial and marine segments (see page 23).

Volvo Penta also took its next steps in marine automation concepts, announcing its work with assisted maneuvering. Since the live demo of its self-docking technology in 2018, Volvo Penta received input from a wide range of stakeholders. As a result, the company will take a step-wise approach starting with automated functionality to make tricky maneuvering even easier.

The company also continued to evolve its Easy Connect app during 2019, which provides users with data related to the engine, boat, and routes taken – directly to their smartphone or tablet. The app was expanded to include a connection to the cloud, as well as increased languages and user support (see page 30). ■

**D4 AND D6 PROPULSION PACKAGES****NEW GENERATION MARINE ENGINES**

With over 100,000 units produced, the Volvo Penta D4 and D6 got a comprehensive update based on customer feedback and with the target to deliver an even better boating experience, as well as more power and reliability, while operating costs are cut by a third. The updates include newly designed engines, a completely new Aquamatic sterndrive, an updated IPS drive and an upgraded Electronic Vessel Control System. From the outside the changes might not be that obvious, but almost every aspect of the



fully integrated system has been upgraded, from helm-to-prop. The enhancements include re-engineering of the engines, delivering more power and torque and ensuring the highest levels of reliability. They are perfectly matched with an upgraded IPS pod and the new DPI Aquamatic sterndrive, which bring increased comfort and maneuverability, as well as more straightforward servicing and maintenance.



## FINANCIAL SERVICES

# GOOD PROFITABILITY, VOLUME AND PORTFOLIO GROWTH

**V**olvo Financial Services (VFS) finished 2019 with an increased operating income of SEK 2,766 M (2,411), record new business volume of SEK 81.0 billion (69.7), and continued profitable portfolio growth. Return on equity remained strong at 15.0%.

VFS' financial solutions support the sales of Group vehicles and equipment, and are available with other services such as repair and maintenance contracts, insurance, etc. at the point-of-sale through Volvo Group dealers. This integrated approach delivers a convenient one stop-shopping experience for customers.

## Perform and transform

The foundation of VFS is the mission to be the best finance company in the industry and to enable the Volvo Group to sell more products and services. The foundation is depicted in VFS' plans which drive three aspirations: Be the Provider of Choice and Employer of Choice in the industry, and Deliver Shareholder Value. In 2019, VFS leveraged the foundation to increase performance in the traditional asset-based business, while driving the digital transformation of VFS products and services to increase speed, convenience and competitiveness. This strategic focus, enabled VFS to further enhance its products and services in ways that increased value for customers, while leveraging innovation and digitalization in order to take the overall customer experience to the next level.

## Business performance remained strong

The business environment in 2019 was characterized by some slow-down from historically high levels, heightened competition and market liquidity, fluctuating interest rates and uncertainties regarding tariffs, sanctions and geo-political stability. Amidst these challenges and a declining industry growth rate, VFS achieved an improved overall penetration rate of 25% (24) for the year, while also continuing to increase its customer satisfaction ratings and securing the #1 position in market share in the majority of markets that VFS serves.

Entering new markets, where financing can mean the difference between buying from the Volvo Group or the competition, remained a continued important growth area for VFS. In 2019, VFS opened operations in South Korea while preparing for operations to begin in Peru and Croatia in 2020, and are committed to developing digital services as appropriate to grow in these markets.

Continuing to develop its employment brand, VFS received additional Great Place to Work® certifications in Mexico, Spain and Chile, while increasing employee development and mobility programs, and implementing additional health and wellbeing practices to maintain high employee engagement levels.

## IN BRIEF

Volvo Financial Services (VFS) offers competitive financial solutions which strengthen long-term relationships with Volvo Group customers and dealers. As the number one provider of financial solutions for Volvo Group products, VFS delivers value to customers and builds loyalty to the Volvo Group brands through ease of doing business, speed to market, and knowledge and expertise of the industry.

### Distribution of credit portfolio, %



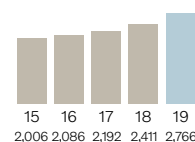
Volvo Trucks, 50 (49)  
Volvo CE, 22 (23)  
Renault Trucks, 9 (10)  
Mack Trucks, 12 (12)  
Buses, 4 (4)  
UD Trucks, 3 (2)

**Number of regular employees**  
1,538 (1,401).

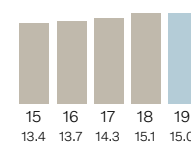
### Position on world market

VFS has customer financing activities available in 48 countries in the world. VFS manages a credit portfolio of SEK 170 billion with more than 200,000 vehicles and equipment.

### Operating income, SEK M



### Return on shareholders' equity<sup>1</sup>, %

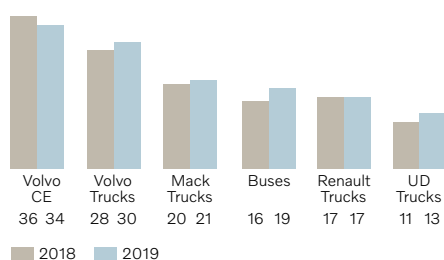


<sup>1</sup> Excluding a positive impact of SEK 897 M during 2017 from the revaluation of deferred tax liabilities related to a tax reform in the US.

VFS credit portfolio and profitability continued to grow, with record levels of new business volume and operating income, and high return on equity. Cost control, operating leverage, pricing discipline and risk control contributed to this performance, along with a disciplined approach to new investments and capital markets execution. Historically low levels of overdue and credit losses were maintained in most markets. North America, Brazil and most of Europe continued to produce good profitability and commercial results. In addition, Asia Pacific continued to produce good volume and penetration amidst slowing economic growth.

## Financial results improved

During 2019, VFS continued to grow the credit portfolio and improve earnings. New business volume increased due to higher deliveries of Group products and improved penetration levels. Total

**Penetration rate<sup>1</sup>, %**

<sup>1</sup> Share of unit sales financed by Volvo Financial Services in relation to total number of units sold by the Volvo Group in markets where financial services are offered.

**Key ratios, financial services**

	2019	2018
Number of financed units	62,209	58,698
Total penetration rate <sup>1</sup> , %	25	24
New financing volume, SEK billion	81.0	69.7
Credit portfolio net, SEK billion	170	149
Credit provision expenses, SEK M	729	538
Operating income, SEK M	2,766	2,411
Credit reserves, % of credit portfolio	1.51	1.63
Return on shareholders' equity, %	15.0	15.1

<sup>1</sup> Share of unit sales financed by Volvo Financial Services in relation to the total number of units sold by the Volvo Group in markets where financial services are offered.

new financing volume in 2019 amounted to SEK 81.0 billion (69.7), an increase of 11% compared to 2018, adjusted for currency. In total, 62,209 new Volvo Group vehicles and machines (58,698) were financed during the year. In the markets where financing is offered, the average penetration rate was 25% (24).

The net credit portfolio of SEK 169,893 M (148,856) increased by 10% on a currency-adjusted basis compared to 2018. The funding of the credit portfolio is matched in terms of maturity, interest rates and currencies in accordance with Group policy. For further information, see Note 4.

Operating income amounted to SEK 2,766 M (2,411) and the return on shareholders' equity was 15.0% (15.1). The equity ratio at the end of the year was 8.0% (8.0). Profitable portfolio growth coupled with efficiency gains were the primary drivers of the increase in earnings.

During the year, credit provision expenses amounted to SEK 729 M (538) while write-offs of SEK 574 M (319) were recorded. The writeoff ratio for 2019 was 0.35% (0.22). At the end of December 31, 2019, credit reserves were 1.51% (1.63) of the credit portfolio. ■

**Income statement financial services, SEK M**

	2019	2018
Finance and lease income	14,870	13,070
Finance and lease expenses	9,091	-7,924
<b>Gross income</b>	<b>5,779</b>	<b>5,146</b>
Selling and administrative expenses	-2,568	-2,290
Credit provision expenses	-729	-538
Other operating income and expenses	284	93
<b>Operating income</b>	<b>2,766</b>	<b>2,411</b>
Income taxes	-688	-613
<b>Income for the period</b>	<b>2,079</b>	<b>1,798</b>
Return on shareholders' equity, %	15.0	15.1

## SHOWCASED INNOVATIONS

**Financial Services for the Future**

iLABX by VFS held its inaugural iLABX Demo Day in 2019, when seven selected startup companies from around the world showcased innovative solutions leveraging mobility, blockchain, artificial intelligence, and insurance technology. The event resulted in several strategic partnerships for VFS, to drive change and speed to market in financial services for customers.



## FINANCIAL MANAGEMENT

## STRONG FINANCIAL POSITION AND IMPROVED CREDIT RATING

**T**he objectives of the financial management in the Volvo Group is to assure shareholders long-term attractive total return and debt providers the financial strength and flexibility to secure proceeds and repayment.

A long-term competitive business requires access to capital to be able to invest. Financial management ensures that the capital is used in the best possible way through well-defined ratios and objectives for the Industrial Operations as well as for the customer finance operations in Financial Services. The objective on Group operating margin and return on equity for Financial Services are intended to secure the return requirements from shareholders. The target on no net financial indebtedness under normal circumstances the Industrial Operations and the equity ratio for Financial Services are there to secure financial stability for debt providers.

### Steering principles to ensure financial flexibility over the business cycle

To ensure financial stability and flexibility throughout the business cycle the Volvo Group holds a strong liquidity position. Besides cash and marketable securities the liquidity position is built up of committed credit facilities. Funding and lending in Financial Services are in local currency and the portfolio is matched both from an interest and a liquidity risk perspective, in accordance with the Volvo Group policy. For further information, please see Note 4 to the Consolidated financial statements.

### Diversified funding sources give flexibility and support the global presence

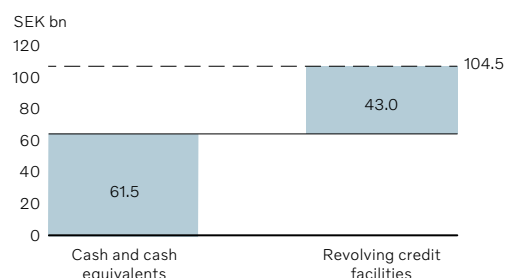
The Volvo Group has centralized the portfolio management of all financial assets and liabilities, funding operations and cash management through the internal bank, Volvo Treasury. The liability portfolio is separated into two portfolios, one for Industrial Operations and one for Financial Services, to correspond to the needs of the different operations.

Volvo Treasury is increasing the possibility to access capital markets at all times through diversified funding sources. Furthermore, the Volvo Group's global presence is supported by bond programs on all major debt capital markets in the world. Besides the access to capital markets around the world, the Volvo Group uses different instruments, such as bilateral bank funding, corporate bonds and certificates, hybrid bonds, agency funding as well as securitization of assets in Financial Services' credit portfolio. An increasingly important part of the treasury work is also to manage increased funding needs in new growth markets for the Group.

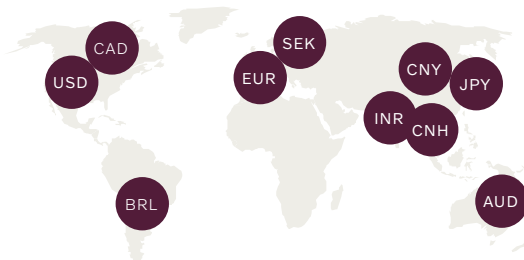
### A strong and stable credit rating is important

Being a large issuer of bonds, it is critical to have a strong and stable credit rating. The level of the credit rating is not only important for

Volvo Group liquidity position, December 31, 2019



Geographically diversified market programs



Credit rating, February 24, 2020

	Short-term	Long-term
Moody's (Corporate Rating)	P-2	A3, stable
S&P (Corporate Rating)	A2	A-, stable
R&I (Japan)	a-1	A+, stable

debt investors but also for a number of other stakeholders when it comes to creating long-term relationships. A strong credit rating has a positive effect on the ability to attract and finance customers' purchases of the Group's products and on the trust from suppliers. It also gives access to more funding sources and lower cost of funds.

The Volvo Group has contractual relations with two global Credit Rating Agencies for solicited credit ratings: Moody's Investors Service (Moody's) and Standard & Poors' Rating Services (S&P). In 2019, Moody's raised its rating from Baa1 to A3 with a stable outlook. S&P raised its rating from BBB+ to A- with a stable outlook. ■

## CHANGES IN CONSOLIDATED EQUITY

SEK M	Equity attributable to owners of AB Volvo					Non-controlling interest	Total equity
	Share capital	Other reserves <sup>1</sup>	Translation reserve	Retained earnings	Total		
<b>Balance at December 31, 2017</b>	<b>2,554</b>	<b>240</b>	<b>2,010</b>	<b>101,056</b>	<b>105,861</b>	<b>1,941</b>	<b>107,802</b>
Transition effect IFRS 9	–	–	–	–371	–371	–	–371
<b>Adjusted opening balance at January 1, 2018</b>	<b>2,554</b>	<b>240</b>	<b>2,010</b>	<b>100,685</b>	<b>105,490</b>	<b>1,941</b>	<b>107,431</b>
Income for the period	–	–	–	24,897	24,897	466	25,363
<i>Other comprehensive income</i>							
Remeasurements of defined benefit plans	Note 20	–	–	–579	–579	–	–579
Remeasurements of holding of shares at fair value	Note 5, 19	–	14	–	14	–	14
Exchange differences on translation of foreign operations		–	2,298	–	2,298	52	2,350
Share of Other comprehensive income related to joint ventures and associated companies		–	–	–	–	–	–
Accumulated translation differences reversed to income		–	–94	–	–94	–	–94
Other comprehensive income for the period		–	14	2,204	1,639	52	1,691
<b>Total comprehensive income for the period</b>		<b>–</b>	<b>14</b>	<b>2,204</b>	<b>24,318</b>	<b>518</b>	<b>27,054</b>
<i>Transactions with shareholders</i>							
Dividends to AB Volvo's shareholders		–	–	–8,636	–8,636	–6	–8,641
Transactions with non-controlling interests		–	–	–	–	–	–
Share based payments	Note 27	–	–	24	24	–	24
Changes in non-controlling interests		–	–	–	–	–	–
Other changes		–	–	–35	–35	–2	–37
Transactions with shareholders		–	–	–8,647	–8,647	–7	–8,654
<b>Balance at December 31, 2018</b>	<b>2,554</b>	<b>254</b>	<b>4,214</b>	<b>116,356</b>	<b>123,379</b>	<b>2,452</b>	<b>125,831</b>
Income for the period	–	–	–	35,861	35,861	635	36,495
<i>Other comprehensive income</i>							
Remeasurements of defined benefit plans	Note 20	–	–	–2,969	–2,969	–	–2,969
Remeasurements of holding of shares at fair value	Note 5, 19	–	10	–	10	–	10
Exchange differences on translation of foreign operations		–	2,586	–	2,586	30	2,616
Share of Other comprehensive income related to joint ventures and associated companies		–	–	252	252	–	252
Accumulated translation differences reversed to income		–	–	–	–	–	–
Other comprehensive income for the period		–	10	2,586	–121	30	–91
<b>Total comprehensive income for the period</b>		<b>–</b>	<b>10</b>	<b>2,586</b>	<b>33,143</b>	<b>665</b>	<b>36,403</b>
<i>Transactions with shareholders</i>							
Dividends to AB Volvo's shareholders		–	–	–20,335	–20,335	–12	–20,347
Transactions with non-controlling interests		–	–	–	–	–	–
Share based payments	Note 27	–	–	–46	–46	–	–46
Changes in non-controlling interests		–	–	–	–	–	–
Other changes		–	–28	–114	–142	–21	–163
Transactions with shareholders		–	–28	–20,495	–20,523	–33	–20,556
<b>Balance at December 31, 2019</b>	<b>2,554</b>	<b>236</b>	<b>6,800</b>	<b>129,004</b>	<b>138,595</b>	<b>3,083</b>	<b>141,678</b>

1 ►► Read more in Note 19 Equity and number of shares regarding specification of other reserves.



## THE SHARE

## SHARE PRICE INCREASE IN 2019

**M**ost of the world's leading stock markets had a positive development during 2019. The price of the Volvo B increased by 35% after having decreased by 24% in 2018.

The Volvo share is listed on the stock exchange Nasdaq Stockholm, Sweden. One A share carries one vote at General Meetings and one B share carries one tenth of a vote. Dividends are the same for both classes of shares. The Volvo share is included in a large number of indices that are compiled by Dow Jones, FTSE, S&P and Nasdaq Nordic.

**The Volvo share price increased**

In general, the leading stock exchanges rose during 2019. On Nasdaq Stockholm, the broad OMXSPI index rose by 30% compared to a decline of 8% in 2018.

On Nasdaq Stockholm the share price for the Volvo A share rose by 36%, and at year-end the price was SEK 158.20 (116.20). The lowest closing price was SEK 113.90 on January 3 and the highest closing price was SEK 160.10 on December 27. The share price for the Volvo B share rose by 35% and at year-end the price was SEK 156.90 (115.95). The lowest closing price was SEK 113.85 on January 3 and the highest closing price was SEK 160.05 on December 27.

In 2019, a total of 1.2 billion (1.3) Volvo shares at a value of SEK 167 billion (198) were traded on Nasdaq Stockholm, corresponding to a daily average of 4.8 million shares (5.4). The Volvo share was the second most traded share on Nasdaq Stockholm in 2019. At year-end, Volvo's market capitalization totalled SEK 335 billion (247).

According to Fidessa, Nasdaq Stockholm accounted for 41% (41) of all the trading in the Volvo B share. CBOE Global Markets accounted for 40% (42) and LSE Group for 13% (5). The remainder of the trading took place on a large number of trading venues.

**Share conversion option**

In accordance with a resolution at the Annual General Meeting on April 6, 2011, the Articles of Association have been amended to include a conversion clause, stipulating that series A shares may be converted into series B shares, after a request sent to the Board. During 2019, a total of 1,193,358 A shares were converted to B shares, representing approximately 0.25 % of the A shares that were outstanding at the end of 2018. Further information on the procedure is available on the Volvo Group's web site: [www.volvogroup.com](http://www.volvogroup.com)

**Dividend**

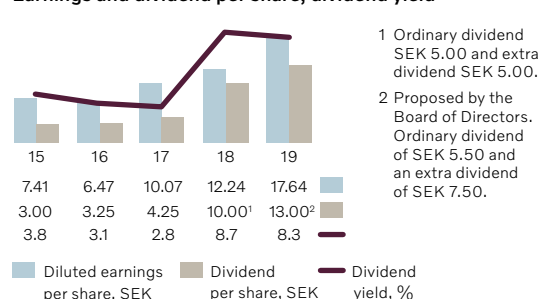
The Board proposes an ordinary dividend of SEK 5.50 per share for the financial year 2019 and an extra dividend of SEK 7.50 per share, which would mean that a total of SEK 26,435 M would be transferred to AB Volvo's shareholders. For the preceding year a dividend of SEK 5.00 per share and an extra dividend of SEK 5.00 per share were paid out, in total SEK 20,335 M.

**Communication with shareholders**

Dialogue with the shareholders is important for Volvo. In addition to the Annual General Meeting and a number of larger activities aimed at professional investors, private shareholders and stock market analysts, the relationship between Volvo and the stock market is maintained through such events as press and telephone confer-

**Why invest in the Volvo share?**

- Competitive products and services
- Strong market positions globally
- Improved profitability and cash flow in recent years
- Strong financial position
- Good cash returns to shareholders

**Earnings and dividend per share, dividend yield**

ences in conjunction with the publication of interim reports, meetings with retail shareholders' associations, investor meetings and visits, as well as road shows in Europe and North America.

On [volvogroup.com](http://volvogroup.com) it is possible to access financial reports, GRI reports and search for information concerning the share and statistics for truck deliveries. It is also possible to access information concerning the Group's governance, including information about the Annual General Meeting, the Board of Directors, Group Management and other areas that are regulated in the "Swedish Code of Corporate Governance." The website also offers the possibility to subscribe to information from the company.

Volvo has elected to present its Corporate Governance Report as a separate document to the Annual Report in accordance with Chapter 6 § 8 of the Swedish Annual Accounts Act and it is available on pages 188–205 of this Annual and Sustainability Report.

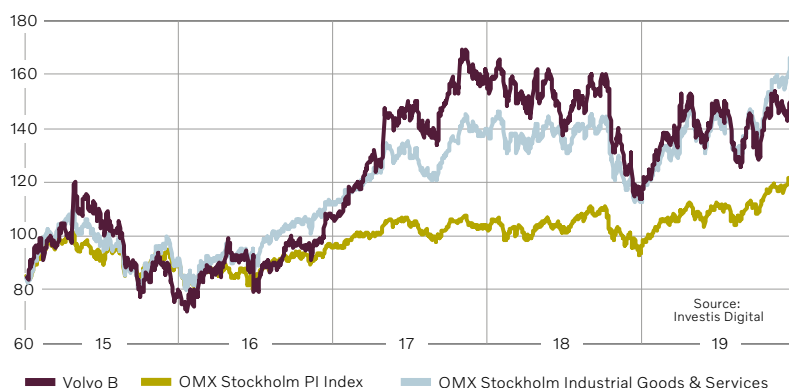
**Contractual conditions related to takeover bids**

Provisions stipulating that an agreement can be changed or terminated if the control of the company is changed, so called change of control clauses, are included in some of the agreements whereby Renault Trucks has been given the right to sell Renault s.a.s. and Nissan Motor Co. Ltd's light-duty trucks as well as in some of the Group's purchasing agreements.

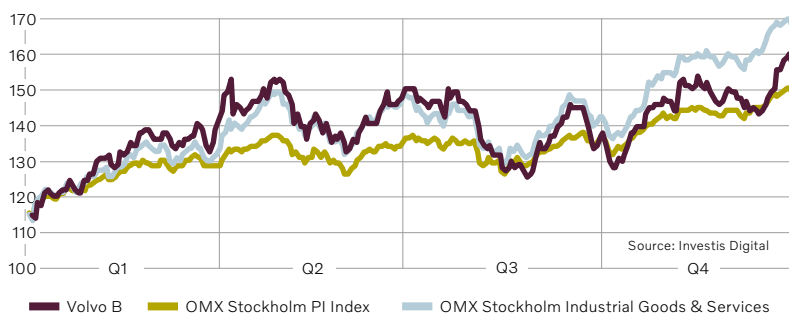
Some of Volvo Group's long-term loan agreements contain conditions stipulating the right for a bondholder to request repayment in advance under certain conditions following a change of the control of the company. These clauses are not unusual in loan agreements. In AB Volvo's opinion it has been necessary to accept those conditions in order to receive financing on otherwise acceptable terms. ■



Price trend, Volvo Series B share, 2015–2019, SEK



Price trend, Volvo Series B share, 2019, SEK


**The shareholders with the largest voting rights in AB Volvo, December 31, 2019<sup>1</sup>**

	Voting rights, %	Capital, %
Industrivärden	25.2	7.8
Geely Holding	15.7	8.2
AMF Insurance & Funds	5.3	3.5
Alecta	5.0	4.4
Norges Bank Investment Management	4.1	1.6

1 Adjusted for shares owned by AB Volvo, which carry no voting rights at General Meetings. AB Volvo held 20,728,135 class A shares and 74,257,751 class B shares comprising in total 4.5% of the number of registered shares on December 31, 2019.

**Share capital, December 31, 2019**

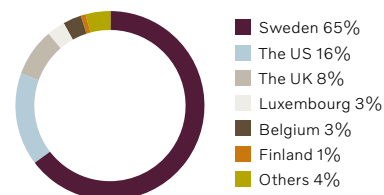
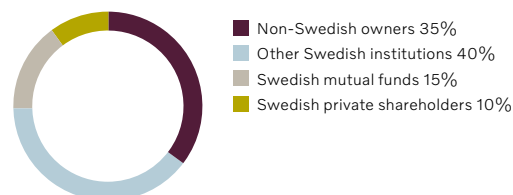
Registered number of shares <sup>1</sup>	2,128,420,220
of which, Series A shares <sup>2</sup>	476,912,471
of which, Series B shares <sup>3</sup>	1,651,507,749
Share capital, SEK M	2,554
Number of shareholders	250,798
Private persons	237,422
Legal entities	13,376

For further details on the Volvo share, see Note 19.

1 The number of outstanding shares was 2,033,452,084 on December 31, 2019.

2 Series A shares carry one vote each.

3 Series B shares carry one tenth of a vote each.

**Ownership by country<sup>1</sup>**

**Ownership by categories<sup>1</sup>**


►► More details on the Volvo share and Volvo's holding of treasury shares are provided in Note 19 to the financial statements and in the Eleven-year summary.



Volvo Group has been independently assessed according to the FTSE4Good criteria, and has satisfied the requirements to become a constituent of the FTSE4Good Index Series. Companies in the FTSE-4Good Index Series have met stringent environmental, social and governance criteria, and are positioned to capitalise on the benefits of responsible business practice.

### Shareholder value – Long-term value creation

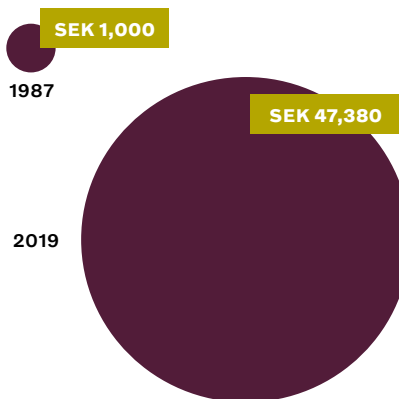
The Volvo Group strives to create long-term value for its shareholders.

The Volvo Group's origins can be traced to 1927, when the first serial produced Volvo car rolled out of the factory in Göteborg, Sweden. The first serial produced truck saw the light of day in 1928 and was an immediate success. In 1935, AB Volvo was listed on the Stockholm Stock Exchange.

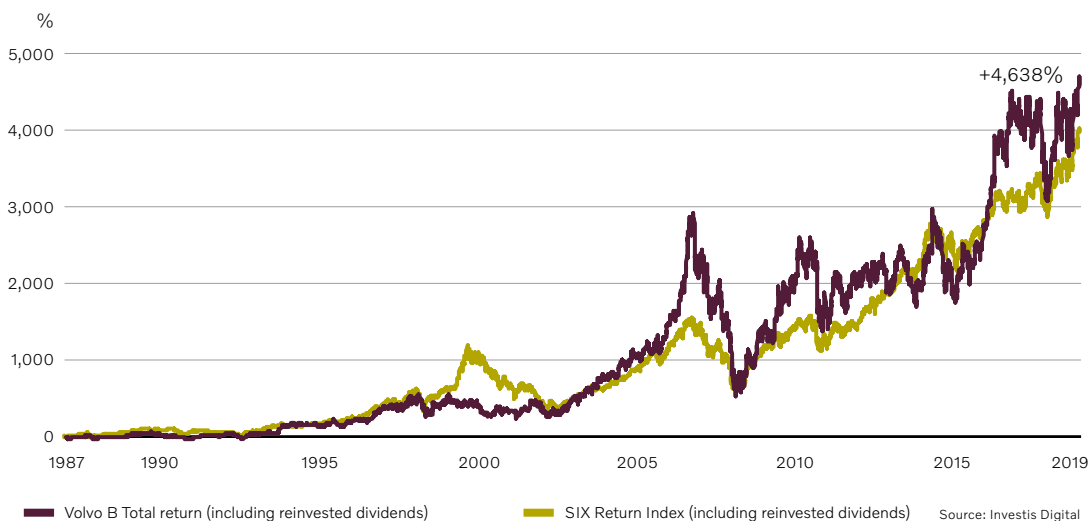
The graph shows the total return for the Volvo B share, measured as the share price development with all dividends re-invested, since January 02, 1987.

The graph shows that SEK 1,000 invested in the Volvo B-share in 1987 had grown to SEK 47,380 at the end of 2019, under the condition that all dividends have been reinvested in Volvo B shares.

SEK 1,000 invested in Volvo B shares on January 2, 1987, was worth SEK 47,380 at the end of 2019.



### Accumulated total return of the Volvo B share



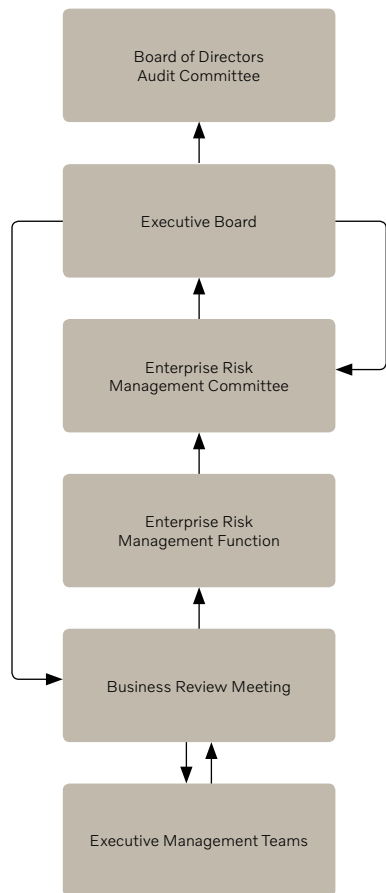
## RISKS AND UNCERTAINTIES

## MANAGED RISK-TAKING

Each of the Volvo Group's Business Areas monitors and manages risks in its operations. In addition, the Volvo Group utilizes a centralized Enterprise Risk Management (ERM) process, which is a sys-

tematic and structured framework for reporting and analyzing risk assessments and mitigations as well as for following up on identified risks.

## Enterprise Risk Management Process



The Board of Directors monitors risks and mitigation activities annually and the Audit Committee biannually through the consolidated ERM report.

*For the governance model of the Volvo Group, please see page 189.*

The Executive Board analyzes accuracy of reported risks and mitigation activities, and ensures alignment to strategic and operational agenda.

The ERM Committee reviews, analyzes and challenges compiled risks and mitigation activities three times per year. The committee consists of the Executive Vice President Group Finance, Executive Vice President Legal & Compliance, Senior Vice President Group Treasury & Corporate Finance and Senior Vice President Group Reporting, Tax and Control.

Each Business Area and Group Truck Division reports its largest risks and mitigation activities three times per year to the ERM function, which analyzes and compiles reported risks into the Group ERM report.

Business review meetings in each Business Area and Group Truck Division monitors and analyzes its largest risks. This forms the basis for the ERM reporting.

Executive Management Teams in each Business Area and Group Truck Division are fully responsible for risk and mitigation management in their respective area. Risks are identified, mitigation activities are established, and monitoring and reporting of progress is part of daily operations.



## Risk Categories

The ERM process classifies Volvo Group risks into four categories: strategic, operational, compliance and financial risks.

		Consequences	Management
Long-term	<b>Strategic risks</b>	Strategic risks may affect the Group's ability to create value, the long-term development of the business and the possibility to reach the vision and aspirations.	Strategic risks are managed through strategic plans and business decisions taken by the Board of Directors, Executive Board and management teams throughout Volvo Group.
Short- and medium-term	<b>Operational risks</b>	Operational risks may affect the Group's ability to enhance value and are important for the daily business.	Operational risks are managed in operational business decisions throughout Volvo Group on all levels, by all employees.
	<b>Compliance risks</b>	Compliance risks may affect the Group's ability to protect value against threats posed to its financial, organizational, or reputational standing.	Compliance with rules and regulations are part of operational business management and decisions in all business in Volvo Group on all levels, by all employees.
	<b>Financial risks</b>	Financial risks may affect the Group's ability to enhance and protect the Group's financial position.	Financial risks are managed as an integrated element of business operations where parts of the responsibility have been centralized to Volvo Group Treasury following the financial framework; Volvo Group Financial Policies and Procedures.

## Principal risks

The following pages present the principal risks and uncertainties the Volvo Group are facing within each risk category. These risks

can, separately or in combination, have a material adverse effect on the Group's business, strategy, financial performance, cash flow, shareholder value or reputation.

## STRATEGIC RISKS

### Technology shift and convergence

Balancing the research and development resources between the traditional and new technologies is strategically important for the Volvo Group. New technologies arising from digitalization, and an increasing awareness of climate change, will enable autonomous, electric and connected vehicles to deeply impact the transport, logistics and construction industries – among others. The effect will be particularly strong at the convergence of these technologies as it affects vehicles, assets as well as infrastructures, and potentially opens the way for a paradigm shift.

The lack of broadly accepted technologies and standards poses significant risks for the Volvo Group and other participants in these industries, as they are required to choose relevant technologies, time their introduction wisely, while respecting the wide spread in readiness level among markets and segments across the globe. A further level of risk relates to the need to evolve from a vehicle/product focus towards an ecosystem-driven approach, where vehicles and infrastructures are to be developed and implemented simultaneously.

If the Volvo Group positions itself unsuccessfully in this technology shift, earnings capacity and financial standing could be negatively affected.

### Comment

The Volvo Group is striving to lead the technology development. Together with customers and suppliers, through early phase partnership, Volvo Group explores new technologies, desired features, and levels of quality, cost, safety and environmental impact. Extra focus is secured by dedicated organizations within autonomous, electric and connectivity technologies and solutions. Furthermore, Volvo Group is broadening its involvement into ecosystem-related solutions and is today working much closer to customers, suppliers and regulators to understand the pace of development in society. Read more about the Volvo Group's work within electrification, automation and connectivity starting on page 20.



### Intense competition

Competition in the industry may intensify if new participants enter the market. The major global competitors are Daimler (Mercedes and Freightliner), Traton (Scania, MAN and Navistar), Paccar (Kenworth, DAF and Peterbilt), Caterpillar and Komatsu. There are also strong local brands, for example in China, India and Russia, active in their domestic markets, which are expected to increase their presence in other parts of the world. Furthermore, overcapacity within the industry can occur if there is a lack of demand. These trends in the industry may impact the Volvo Group's sales and potentially lead to increased price pressure or lost market shares.

#### Comment

Proactive risk management is important to anticipate changes in the competitive landscape and to protect the market positions of the Volvo Group's brands. Given the width of brands within the Group, it is important to utilize synergies and economies of scale while at the same time empower the Business Areas to take responsibility for their businesses and offers. Continuous focus on product and service development is an important mitigation measure in order to keep the Group's market position.

### Extensive government regulation

Regulations regarding exhaust emissions, noise, safety and pollutants from production plants and products are extensive. Most of the regulatory challenges affecting the product range relate to reduced emission levels. The risk for the Volvo Group is not being able to assure an updated and compliant product range to meet current and future regulations.

Local protectionism leading to changes in local content requirements can put the Volvo Group at a disadvantage compared to local competitors, cause increased sourcing costs or require Volvo to make significant investments.

Failure to assure an updated and compliant product range in time to meet regulations, would negatively affect the Volvo Group's earnings capacity and financial standing.

#### Comment

The product development capacities within the Volvo Group are coordinated, enabling a focus of resources for research and development to meet emission regulations. Local content requirements are continuously monitored, enabling the Group to take appropriate measures in due time. Read more about product development and emissions regulations starting on page 48.

## OPERATIONAL RISKS

### Customer satisfaction

Top priority for the Volvo Group is to support its customers' businesses and profitability in order for them to succeed, regardless of segment, brand, product or service. Customer satisfaction is reliant on the expectations in relation to the actual delivery or user experience of the total offer.

Customer satisfaction, and thereby the Group's sales and revenues, is at risk if the total experience is not at the expected level or price point.

#### Comment

The Volvo Group strives for a culture where customer success is at the heart of everything. Regardless of where in the value chain, the Group engages in understanding its customers' business and focus efforts on creating value from the customer's perspective.

The Volvo Group also puts a lot of effort on market research and customer interviews to secure knowledge of customer needs. Within product development, the Group has implemented a project gate model and a governance structure where risks regarding project and product quality, cost, project lead time and product features are constantly monitored.

Staff at retailers and workshops are continuously trained and provided with instructions and guidelines on how to interact with their

customers. Web pages are aligned, positioned and developed towards the brand's targeted customers. Read more on page 44.

### Cyclical commercial vehicles industry

The Volvo Group's customers operate all over the world, some within a single country and others across borders. A multitude of global and regional economic, regulatory, digital, technological, climate and energy resource efficiency factors create strategic as well as operational challenges for the industry.

Like many capital goods industries, the commercial vehicle industry generally has been cyclical, with a strong correlation to GDP and corresponding changes in transport demand, the need to replace aging vehicles and machines, as well as changing laws and regulations. Although there is a continued shift in focus in the commercial vehicle industry from product to service, the cyclicity in sales and profitability remains. The fluctuating demand for the Group's products and services makes the financial result of the operations dependent on the Group's ability to react quickly to market changes.

Inability to adapt to a fluctuating demand could lead to capacity constraints or underutilization of resources, which could have a negative effect on earnings and financial position.

*Comment*

The Volvo Group strives to continuously balance production levels and operating expenses, as well as enhance business agility in fulfilling demands for new services.

**Reliance on suppliers and scarce materials**

The Volvo Group purchases raw materials and components from numerous external suppliers. Suppliers and business partners come from all around the world, thus sustainable solutions and close collaboration with suppliers are important for the success of the Volvo Group. The purchase cost can vary significantly over a business cycle due to changes in world market prices for raw materials and currency impact. Simultaneous growth of sales in major markets can create extraordinary capacity constraints in the supply chain. Changes in demand in the automotive and commercial vehicle industries as well as suppliers' financial instability could also result in delivery disturbances.

The ongoing technology shift into electrification and other new customer offerings, combined with required investments in new technologies, may move the industry and the Volvo Group towards reliance on new suppliers which may have limited capacity. Effects of delivery disturbances vary depending on the components' lead time and complexity as well as on the availability of alternative suppliers and transport providers. Some components are standard throughout the industry, other are Volvo Group unique.

Failure by the Volvo Group's purchasing system to manage any of these aspects efficiently, can have a negative effect on earnings capacity and financial position.

*Comment*

Proactive efforts are put forth in establishing a robust and flexible supply chain for the Volvo Group. To manage the high volatility in the commercial vehicle market, capacity management is a focus area, as well as social responsibility management in close cooperation with suppliers and business partners. Read more about how we work with suppliers on page 54 and reuse on page 62.

**Industrial operations**

The integrated industrial system is vital for the Volvo Group in order to provide products to the customers cost-efficiently, with the right quality, and on time. The Group strives to produce components as well as complete vehicles and machines, and supply material to customers and factories in a sustainable and resource-efficient way. Disturbances and inefficiencies in the integrated system, as well as undesirable effects on and from the external environment, such as strikes, pandemics or extreme weather, could result in stoppages in production, operations and parts deliveries, and thus negatively affect the company's business and reputation.

*Comment*

The organization is continuously working on improvements and to manage risks such as volume variations, supplier disruptions, legislative changes, operational hazards and external environmental impacts. The risks are also partially offset by the integration of the industrial system itself, through the ability to manufacture and source from other Volvo Group sites.

The contributions to environmental care include improving efficiency in the use of natural resources like water, energy and chemicals, reducing the dependency on hazardous substances, preventing adverse impacts from emissions to land, water and air, and strategically working to increase renewable energy use and reduce CO<sub>2</sub> emissions.

In order to manage risks such as operational hazards, volume variations, and supplier disruptions, the organization works cross-functionally to maintain its desired production output, including delivery of products and services with customer focus. Production risks are managed through the Volvo Production System (VPS), to achieve the highest quality with a focus on continuous improvement. Read more about production, logistics and VPS starting on page 56.

**Human capital**

The Volvo Group strongly believes that there is a high correlation between the Group's future success and its capability to recruit, retain and develop qualified personnel. To meet expectations from employees and other stakeholders, a strong focus is required on areas such as leadership, empowerment, employee engagement, human rights, company culture and values, sharing of knowledge, and building diverse teams. Failure to do the right things in these areas can cause a negative impact on the Volvo Group's reputation, as well as on the image as an employer and on the ability of employees to develop the knowledge and skills necessary to ensure customer success.

*Comment*

This risk is managed by leveraging the full diversity of the workforce to ensure business success on a global arena and the Volvo Group continuously monitoring changing legislation to ensure compliance. The Volvo Group Pulse survey has been complemented by other tools and processes designed to increase dialogue, which allows the Group to capture the voice of employees and strengthen engagement. By uniting employees through a common set of behaviors that are in line with the business ambitions, the Group consciously grows an inclusive culture and a value-based leadership. Read more about the Group's Employees on page 64.



### Human rights

The Volvo Group should observe human rights principles under applicable legislation throughout the world, as well as under its own standards. Violation of human rights may potentially materialize not only in the own organization, but also through the business relationships and in the value chain. The Group is aware that conducting business in certain parts of the world constitutes higher risks for potential human rights violation, and has identified certain countries where the Volvo Group has a substantial number of employees and/or close business partners, which are considered high risk in this respect. The Group is also aware that potential linkage through the supply chain as well as Group products and services to segments such as the electronics industry, mining industry and heavy infrastructure projects constitutes higher risks for human rights violations.

The consequences of human rights risks for the Volvo Group depend on if the Group is seen as causing, contributing to or having a linkage to the harm done, and could be anything from legal liability to reputational and brand damage, depending also on the severity of its nature.

#### Comment

People are at the core of what the Volvo Group does. In the Code of Conduct, human rights issues are emphasized, for example mutual respect, non-discrimination, safe and healthy workplace, freedom of association and collective bargaining, working hours and compensation, as well as modern slavery and child labor. Read more on how the Group manages human rights on page 42.

### Residual value commitments

If the Volvo Group is offering the customer a residual value commitment, it means that the customer can return the asset at the agreed date and to the agreed price.

Volvo Group will have a residual value risk if the rebought vehicle can be sold only for a price below the vehicle's committed residual value. A residual value commitment can also become a future used vehicle inventory risk if vehicles are not sold, affecting the cash flow negatively.

#### Comment

In order to minimize the risk and the impact on future profitability, the Volvo Group has established processes and procedures within each Business Area, where each Business Area assumes the responsibility for establishing and maintaining a residual value matrix to reflect fair future market values, proactive planning and management of expiring contracts as well as portfolio evaluation. For further information on residual value commitments as per December 31, 2019, please see Note 13 Tangible assets.

### Cybersecurity and IT infrastructure

The operation of many of the Volvo Group's business processes depends on reliable information technology (IT) systems. The systems may be subject to security incidents, including data breaches or leakages, intrusions, industrial espionage, know-how and data privacy infringements or unauthorized or accidental modifications of information. Timely detection of security incidents is becoming increasingly complex, and the Volvo Group seeks to investigate incidents with a view to prevent their recurrence. Disruption of critical IT services, or breaches of information security, could nevertheless harm the Volvo Group's reputation and have a significant adverse effect on earnings and financial condition.

The Volvo Group relies heavily on third parties to whom it has outsourced significant parts of maintenance and operations of its IT systems. The Volvo Group has taken precautions in the selection and ongoing management of these third parties, but events or incidents caused by vulnerabilities in their operations or products could cause significant disruptions in the Volvo Group's operations.

#### Comment

The Volvo Group strives to identify and monitor vulnerabilities and implement appropriate measures to mitigate identified risks to avoid, prevent, reduce or transfer the impact. This is a recurring process that adapts to changes in the risk and operational environment. Security incidents that potentially involve personal data breach are managed as part of the Volvo Group Data Protection compliance program. Read more on page 40.

### Political instability, security

The Volvo Group is active in more than 190 countries across the world. Political instability, armed conflicts or civil unrest can impact the Group's ability to trade in affected areas. Acts of terrorism, sabotage or other criminal or illicit activities directed towards the Volvo Group's production system, transports or facilities, or those of its suppliers or customers, could cause harm to people and severely damage the Group's operations.

#### Comment

The Volvo Group strives to identify and monitor vulnerabilities and implement appropriate measures to mitigate identified risks to avoid, prevent, reduce or transfer the impact. This is a recurring process that adapts to changes in the risk and operational environment.



## COMPLIANCE RISKS

**Non-compliance with data protection laws**

Data protection laws apply to the Volvo Group in the jurisdictions in which Volvo operates. The EU General Data Protection Regulation ("GDPR"), which became applicable from May 2018, has introduced increased monetary penalties for breaches of the regulation. Non-compliance with data protection laws could expose the Group to fines and penalties and severe infringements may potentially cause authorities to issue instructions to stop processing of personal data, which could disrupt operations. The Group could also be faced with litigations from persons allegedly affected by data protection violations. Data protection law infringements may hence involve severe negative impact for the business operations, including reputational damage and adverse effect on the Group's earnings and financial standing.

*Comment*

The data privacy area is closely monitored to identify improvement areas, as well as potential issues that may have a negative impact on the Volvo Group. The Code of Conduct emphasizes the importance of compliance with data protection legislation and a Volvo Group Data Privacy Compliance Program has been established. Further, the Group Privacy Office (and connected network) manage implementation, monitoring and training in respect of the compliance program. Read more on page 40.

**Intangible assets**

The Volvo Group owns or otherwise has rights to patents, trademarks, designs and copyrights that relate to the products and services that the Group manufactures and markets. These rights have been developed or acquired over a number of years and are valuable to the operations of the Volvo Group. Further, in order to safeguard investments in R&D, the Volvo Group has an intellectual property plan defining the creation and use of its intellectual property rights. AB Volvo and Volvo Car Corporation jointly own the Volvo brand and trademarks through Volvo Trademark Holding AB. AB Volvo has the exclusive right to use the Volvo name and trademark for its products and services and according to a license agreement. Similarly, Volvo Car Corporation has the exclusive right to use the Volvo name and trademark for its products and services. The Volvo Group's rights to use the Renault brand and trademarks are related to the truck operations only and are regulated by a license from Renault s.a.s., which owns the Renault brand and trademarks. In addition, the Volvo Group owns several other trademarks relating to its business. Use in possible conflict with third-party intellectual property rights, or third-parties' unauthorized use of the Volvo Group's proprietary rights, may have significant business impact on the Group.

*Comment*

The Volvo Group is continuously assessing intellectual property rights of third parties as well as possible infringements by third parties of the Group's intellectual property rights.

**Complaints and legal actions**

The Volvo Group may be the target of complaints and legal actions initiated by customers, employees and other third parties alleging health, environmental, safety or business-related issues, or failure to comply with applicable legislation and regulations. Information about legal proceedings involving entities within the Volvo Group are found in Note 21 Other Provisions and in Note 24 Contingent Liabilities. Even if such disputes are resolved successfully, without having adverse consequences financially or on the values, they could negatively impact the Group's reputation and take up resources that could be used for other purposes.

*Comment*

The Volvo Group has well-established structures and processes in place to evaluate and handle complaints and legal proceedings with the purpose of mitigating legal risks for the Group.

**Environmental regulations**

International agreements on limiting the CO<sub>2</sub> emissions, such as the Paris Agreement, together with related national and regional initiatives leads to continued and increased attention to climate change and influence regulatory development. Environmental legislation is developing in areas such as vehicle regulations on CO<sub>2</sub> and on emission standards as well as chemical substance regulations. These developments increase the need for monitoring and adaption to new requirements. Even if challenges in these areas are resolved and handled, they could have a negative impact on Group reputation, usage of resources, and cost of production, and may result in adverse effects on earnings and financial position.

*Comment*

To mitigate risks and impact in the environmental regulatory area, the Volvo Group invests substantial resources to adhere to different legislations throughout the entire value chain. Examples of these are:

- Monitoring of upcoming environmental regulations and initiatives which could have an impact on the business
- Governance structure to address upcoming environmental requirements
- Prioritizations and investment decisions in regular operational processes.

Read more about how the Group manages environmental risks in the Value Chain section starting on page 38.



### **Corruption and non-compliance with competition law**

Corruption risks are primarily linked to the activities of the Volvo Group's business partners (distributors and sales agents), for which the Group may be responsible, as well as to the behaviors of employees in sales situations in relation to public officials and other customer representatives. The overall risk level is also affected by the fact that Volvo pursues business operations in many markets that are considered high-risk from a corruption perspective. Potential risks for non-compliance with competition law (e.g. price fixing, market sharing, unlawful information exchange, abuse of market power) are primarily linked to behavior of employees when interacting with competitors and other external stakeholders in various situations. Corruption as well as competition law infringements may involve severe negative impacts for the business operations, including reputational damage, fines and imprisonment of employees. The Group could also be affected by claims raised by persons or entities affected by allegedly non-compliant practices.

### *Comment*

Corruption-related risks are managed via the Volvo Group's Anti-Corruption Compliance Program, which consists of different mitigating activities including anti-corruption due diligence of business partners. This is to ensure that the Group selects the right business partners to prevent corrupt practices in connection with the sale of products and services. As regards to employees and contractors, the Code of Conduct emphasizes that Volvo employees and contractors may not participate in or endorse any corrupt practices. The Code of Conduct also emphasizes that the Group competes on the merit of products and services and do not take actions that are illegal under the competition laws, such as colluding with competitors. Also, regular training is provided. Read more about the Compliance Programs on page 40.

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## FINANCIAL RISKS

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### **Insurance**

The Volvo Group generally takes out insurance coverage where it is legally or contractually obligated to do so and otherwise against such risks, in such amounts and on terms that it considers commercially motivated from time to time. Where insurance coverage cannot be procured on such terms, the Group can be exposed to material uninsured losses, which could have a materially adverse effect on Group operations and financial standing. For example, the Group has substantial operations in Japan that are not fully insured against effects from flooding, earthquakes and other natural disasters.

### *Comment*

The Volvo Group strives to identify and monitor vulnerabilities and implement appropriate measures to mitigate identified risks to avoid, prevent, reduce or transfer the impact. This is a recurring process that adapts to changes in the risk and operational environment.

### **Credit risk**

The Volvo Group is exposed to credit risk mainly through its sales to customers in the Industrial Operations, and its long-term credit receivables in its Financial Services operations. Total exposure as of December 31, 2019 can be found in Note 15 Customer-financing receivables, and Note 16 Receivables. The Group is also exposed to financial credit exposure due to short-term deposits with the Group's core banks and unrealized results from derivatives used for hedging purposes. For further information, please see Note 4 Goals and policies in financial risk management and Note 15 Customer-financing receivables. If several larger customers, or a core bank, fails to meet its undertakings the Group could suffer significant losses.

### *Comment*

The Volvo Group has set clear principles for how to manage external customer relationship, including customer assessment, how to manage and measure exposure and mitigate risks, monitoring of the economic, political and industry conditions in each market, financing solutions, collection procedures and performance follow-up structure. The Group has several so called CSA (Credit Support Annex) agreements in place in order to decrease credit exposure arising from hedge activities with financial derivatives.

**Pension commitments**

The Volvo Group has substantial pension commitments, some of which are owed under defined benefit plans. Changes in assumptions of interest and inflation rates, mortality, retirement age and pensionable remunerations could result in significant changes to the present value of already accrued benefit obligations as well as the cost of new benefit accruals, affecting funding level of such plans. The investment performance of pension assets may also substantially affect funding levels. Defined benefit plan assets are managed independently from the Group, with a significant portion of plan assets held in shares and other similar instruments that are exposed to market risks. Please see Note 20 Provisions for post-employment benefits for further information.

If there is a shortfall in benefit plans, the Volvo Group could be required to make substantial cash contributions, which could adversely affect cash flow and the Group's financial position.

*Comment*

The exposure is controlled in the short term by ensuring strict adherence to each plan's investment policy and by proactively implementing portfolio derisking strategies when deemed necessary.

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**Interest rate risk**

Volvo Group's net debt structure is exposed to fluctuations in market interest rates. Movements in interest-rate levels may impact the Group's net income and cash flow or the value of financial assets and liabilities.

*Comment*

The Industrial Operation's interest-rate fixing is kept short, i.e. below six months, to leverage on the countercyclical relationship of short-term interest rates. Financial Services funding and lending shall be matched to mitigate undesired volatility in profitability due to interest-rate risk.

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**Currency risk**

The Volvo Group's global presence means that business is conducted in several different currency regions. More than 95% of the Group's net sales are generated in countries other than Sweden. The Volvo Group's cash flow, profitability, and balance sheet are impacted by fluctuations in foreign exchange rates.

*Comment*

The Volvo Group strives to have sourcing and manufacturing located in the major markets which offsets structural currency exposures, and actively manages currency flows and translation risk to reduce the impact on profitability and cash flow.

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**Liquidity risk**

It is of critical importance for the Volvo Group to assure a sufficient payment capability over time, to continuously manage demands and expectations from external stakeholders.

Sudden changes in the business cycle, unforeseen events within the financial markets, changes in the Volvo Group's access to financial markets, and changes in customers' appetite for financing from the Group, may stress the Group's liquidity preparedness.

Failure to properly manage the Group's liquidity risks, may cause material adverse impact on earnings capability and financial standing.

*Comment*

The Volvo Group ensures sound financial preparedness by always keeping a certain portion of its sales in liquid assets. A sound balance between short- and long-term debt maturities as well as long-term committed credit facilities and cash, are intended to secure liquidity preparedness and thus the Volvo Group's payment capability.

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**Impairment**

The Volvo Group has substantial values in goodwill and other intangible assets on its balance sheet. Please see Note 12 Intangible assets. The size of the surplus values differ between the operating segments areas and they are, to a varying degree, sensitive to changes in the business environment. Instability in the business recovery and volatility in interest and currency rates may lead to indications of impairment.

*Comment*

Goodwill is evaluated yearly or at any indication of impairment. Other intangible assets are evaluated in case of indication of impairment.

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## SUSTAINABILITY REPORTING

## INTEGRATED SUSTAINABILITY REPORTING

**T**he Volvo Group's mission is to drive prosperity through transport solutions. Environmental, social and financial sustainability aspects as well as ethical business conduct are integrated into the Volvo Group's overall strategy and business model and we have an integrated Annual and Sustainability Report where non-financial reporting requirements are included as an integral part of our financial and operational statements.

#### Non-financial reporting in accordance with the Swedish Annual Accounts Act

##### *Volvo's Business Model*

With business operations in more than 190 countries whereof many are classified as high risk countries from an environmental, human rights and/or corruption perspective we need to secure that we pursue our business operations in a responsible manner. Sustainability aspects and responsible business behavior are integrated into Volvo's business model and also incorporated into Volvo's policies and processes. In line with our decentralized business model each business area is responsible to ensure compliance with Volvo's minimum standards relating to responsible business behavior. Volvo's strategy and business model are further described on pages 8–63.

##### *Volvo Group Policies*

The Volvo Group Code of Conduct is a Group-wide policy that sets the standards on how we conduct business – ethically and in compliance with applicable laws and regulations. It applies everywhere we operate, for our employees and everyone else who works on our behalf. The Code of Conduct is complemented by other policies that describe in more detail how we address its minimum standards. The Volvo Group also has a number of policies which sets out the Volvo Group's minimum requirements and standards relating to the environment, employees, social factors, human rights and anti-corruption, see the index on the next page. Such minimum requirements and standards apply for all our business operations in all parts of the world. Our policies are in some areas complemented with mandatory compliance programs to ensure compliance with legal requirements and policy commitments, see page 40–41. In line with our decentralized business model our various business areas are free to complement existing policies and compliance programs with more stringent requirements on environmental sustainability, social sustainability and responsible business behavior for their respective business area.



##### *Risks and mitigations*

The Volvo Group works with enterprise risk management (ERM) which is a systematic and structured process to assess, report, analyze and follow-up the risks that might impact the Volvo Group's business operations. Hence, many of Volvo's sustainability and responsible business related risks and mitigations are reported as part of the general risk analysis, see pages 102–109. The index on the next page includes a more detailed overview on essential risks and mitigations relating to the environment, employees, social factors, human rights and corruption in line with the non-financial reporting requirements under the Swedish Annual Accounts Act. We do not believe that we have any other non-financial factors that are material for our business operations in the areas of the environment, employees, social factors, human rights or anti-corruption.

##### *Key Performance Indicators*

In line with our integrated sustainability reporting, KPI's in relation to the environment, employees, social factors, human rights and corruption are integrated into our overall report, see further the index on the next page.

##### **GRI Report**

In addition to this integrated Annual and Sustainability Report, the Volvo Group has prepared a separate GRI Report. ■



	Policies	Essential risks	Mitigation activities	KPI's
<b>Environment</b>	<ul style="list-style-type: none"> <li>Environmental Policy</li> <li>Volvo Group Code of Conduct</li> <li>Supplier Code of Conduct</li> </ul>	<ul style="list-style-type: none"> <li>Environmental impact by our products</li> <li>Environmental impact by our operations</li> <li>Environmental impact by our value chain (suppliers, business partners and customers)</li> <li>Scarce materials and minerals</li> </ul>	<ul style="list-style-type: none"> <li>Product development and new technologies: 20–31, 48–49</li> <li>Resource efficiency and increased circularity: 62–63</li> <li>Environmental governance of our own operations: 56–59</li> <li>Sustainable Purchasing Program: 54–55</li> <li>Responsible sales: 61</li> <li>Training: 55, 66</li> <li>Partnerships: 55</li> </ul>	<ul style="list-style-type: none"> <li>Product emissions: 35, 58</li> <li>Product recyclability rate: 62</li> <li>Energy use and sources: 56–58</li> <li>Energy efficiency: 35, 57–58</li> <li>CO2 emissions scope 1 and 2: 57–58</li> <li>Supplier self-assessments and audits: 54–55</li> <li>ISO Certifications: 54, 56</li> </ul>
<b>Employees &amp; Social Factors</b>	<ul style="list-style-type: none"> <li>Volvo Group Code of Conduct</li> <li>Health and Safety Policy</li> </ul>	<ul style="list-style-type: none"> <li>Health and Safety</li> <li>Diversity and inclusion</li> <li>Competence development and employment</li> </ul>	<ul style="list-style-type: none"> <li>Employee management: 65–66</li> <li>Health and Safety: 66–68</li> <li>Labor Relations: 68</li> <li>Inclusion and diversity: 69</li> <li>Grievance mechanisms: 40</li> <li>Training: 40, 66</li> </ul>	<ul style="list-style-type: none"> <li>Employee turnover: 65</li> <li>Gender diversity: 69</li> <li>Lost time accident rate (LTAR): 66</li> <li>Whistle blower cases: 40</li> </ul>
<b>Human Rights</b>	<ul style="list-style-type: none"> <li>Health and Safety Policy</li> <li>Supplier Code of Conduct</li> <li>Compliance Policy</li> </ul>	<ul style="list-style-type: none"> <li>Adverse human rights impacts in our own operations</li> <li>Adverse human rights impacts in our supply chain or linked to our business partners</li> <li>Adverse human rights impacts linked to the use of our products</li> </ul>	<ul style="list-style-type: none"> <li>Human rights management: 42–43</li> <li>Sustainable purchasing Process: 54–55</li> <li>Sustainable minerals Program: 55</li> <li>Responsible sales: 61</li> <li>Grievance mechanisms: 40</li> <li>Training: 55, 61, 66</li> <li>Societal engagement and partnerships: 35, 37, 46</li> </ul>	<ul style="list-style-type: none"> <li>Supplier self-assessments and audits: 54–55</li> <li>Whistle blower cases: 40</li> </ul>
<b>Anti-corruption</b>	<ul style="list-style-type: none"> <li>Code of Conduct</li> <li>Compliance Policy</li> <li>Anti-Corruption Due Diligence Policy</li> </ul>	<ul style="list-style-type: none"> <li>Corrupt practices in relation to suppliers, business partners customers and others</li> </ul>	<ul style="list-style-type: none"> <li>Compliance program: 40</li> <li>Due diligence of business partners: 40</li> <li>Whistleblower process: 40</li> <li>Training: 40</li> </ul>	<ul style="list-style-type: none"> <li>Whistle blower cases: 40</li> </ul>

# GROUP PERFORMANCE 2019

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## FINANCIAL STATEMENTS



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# NOTES TO FINANCIAL STATEMENTS

Amounts in SEK M unless otherwise specified. The amounts within parentheses refer to amounts for year 2018.

## 1 ACCOUNTING POLICIES

The consolidated financial statements for AB Volvo and its subsidiaries have been prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), as adopted by the European Union, EU. This Annual Report is prepared in accordance with IAS 1 Presentation of Financial Statements and the Swedish Annual Accounts Act. In addition, RFR 1 Supplementary Rules for Groups has been applied, which is issued by the Swedish Financial Reporting Board.



### VOLVO GROUP'S ACCOUNTING POLICIES

The Volvo Group describes the accounting policies in conjunction with each note in the aim of providing enhanced understanding of each accounting

area. The Volvo Group focuses on describing the accounting choices made within the framework of the prevailing IFRS standard and avoids repeating the actual text of the standard, unless the Volvo Group considers it particularly important to the understanding of the note's content. The following symbols **I/S** and **B/S** show if amounts in the notes can be found in the income statement or balance sheet. The total amount in tables and statements might not always summarize as there are rounding differences. The aim is to have each line item corresponding to the source and it might therefore be rounding differences in the total. Refer to the table below to see the note in which each accounting policy is applicable and the relevant IFRS standard with material impact.

Accounting policies	Note	IFRS standard
Assets and liabilities held for sale and discontinued operations	3, Acquisitions and divestments of shares in subsidiaries	IFRS 5, IFRS 13
Acquisitions and divestments	3, Acquisitions and divestments of shares in subsidiaries	IFRS 3
Joint ventures	5, Investments in joint ventures, associated companies and other shares and participations	IFRS 11, IFRS 12, IAS 28
Associated companies	5, Investments in joint ventures, associated companies and other shares and participations	IFRS 12, IAS 28
Other shares and participations	5, Investments in joint ventures, associated companies and other shares and participations	IFRS 7, IFRS 9, IFRS 13, IAS 28, IAS 32, IAS 36
Operating segments	6, Segment reporting	IFRS 8
Revenue	7, Revenue	IFRS 9, IFRS 15, IFRS 16
Financial income and expenses	9, Other financial income and expenses	IFRS 9
Income taxes	10, Income taxes	IAS 12
Non-controlling interest	11, Non-controlling interest	IFRS 10, IFRS 12
Research and development	12, Intangible assets	IAS 23, IAS 36, IAS 38
Goodwill	12, Intangible assets	IFRS 3, IAS 36, IAS 38
Tangible assets	13, Tangible assets	IFRS 13, IFRS 16, IAS 16, IAS 23, IAS 36, IAS 40
Leasing	14, Leasing	IFRS 16
Inventories	17, Inventories	IAS 2
Earnings per share	19, Equity and number of shares	IAS 33
Pensions and similar obligations	20, Provisions for post-employment benefits	IAS 19
Residual value risks	21, Other provisions	IFRS 15, IAS 37
Product warranty	21, Other provisions	IAS 37
Restructuring costs	21, Other provisions	IAS 19, IAS 37
Extended coverage and service contracts	21, Other provisions	IFRS 15, IAS 37
Insurance operations	21, Other provisions	IFRS 4
Contingent liabilities	24, Contingent liabilities	IAS 37
Transactions with related parties	25, Transactions with related parties	IAS 24
Government grants	26, Government grants	IAS 20
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Cash flow statement	29, Cash flow	IAS 7
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	15, Customer-financing receivables	IFRS 7, IFRS 9, IFRS 13, IFRS 16, IAS 32
	16, Receivables	IFRS 7, IFRS 9, IFRS 13, IAS 32
	18, Cash and cash equivalents	IFRS 7, IFRS 9, IFRS 13, IAS 32
	22, Liabilities	IFRS 7, IFRS 9, IFRS 13, IAS 32
	30, Financial instruments	IFRS 7, IFRS 9, IFRS 13, IAS 32





## Consolidated financial statements

### Principles for consolidation

The consolidated financial statements comprise the parent company, subsidiaries, joint ventures and associated companies. Intra-group transactions as well as gains on transactions with joint ventures and associated companies are eliminated in the consolidated financial statements.

» **Read more in Note 3** Acquisitions and divestment of shares in subsidiaries.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations, about definitions of subsidiaries, joint ventures and associated companies.

» **Read more in Note 11** Non-controlling interest.

### Translation to Swedish kronor when consolidating companies that have other functional currencies

The functional currency of each Volvo Group company is determined based on the primary economic environment in which the company operates. The primary economic environment is normally in which the company primarily generates and expends cash. The functional currency are in most cases, the currency in the country where the company is located. AB Volvo's and the Volvo Group's presentation currency is SEK. In preparing the consolidated financial statements, items in the income statements of foreign subsidiaries are translated to SEK using monthly average exchange rates. Balance sheet items are translated into SEK using exchange rates at year end (closing rate). Exchange differences are recognized in other comprehensive income and accumulated in equity.

The accumulated translation differences related to a certain subsidiary, joint venture or associated company are reversed to the income statement as a part of the gain/loss arising from disposal of the company or repayment of capital contribution from the company.

### Receivables and liabilities in foreign currency

Receivables and liabilities in currencies other than the functional currency of the reporting entity (foreign currencies) are translated to the functional currency using the closing rate. Exchange rate gains and losses arising from operating assets and liabilities impact operating income while exchange rate gains and losses arising from financial assets and liabilities impact financial income and expenses. Interest-bearing financial assets and liabilities are defined as items included in the net financial position of the Volvo Group (see section Key ratios). Exchange rate differences on loans and other financial instruments in foreign currency, which are used to hedge net assets in foreign subsidiaries and associated companies, are offset against translation differences in equity of the respective companies.

» **Read more in Note 4** Goals and policies in financial risk management, about currency exposure and currency risk management.

The most important exchange rates used in the consolidated financial statements are shown in table 1:1.

Exchange rates		Average rate		Closing rate as of Dec 31	
Country	Currency	2019	2018	2019	2018
Australia	AUD	6.5724	6.4954	6.5125	6.3245
Brazil	BRL	2.4007	2.3875	2.2979	2.3164
Canada	CAD	7.1308	6.7139	7.1283	6.5922
China	CNY	1.3691	1.3139	1.3333	1.3068
Euro Zone	EUR	10.5888	10.2607	10.4336	10.2753
Great Britain	GBP	12.0658	11.5973	12.2145	11.3482
Japan	JPY	0.0868	0.0787	0.0853	0.0812
Norway	NOK	1.0747	1.0693	1.0579	1.0245
South Africa	ZAR	0.6548	0.6585	0.6668	0.6213
South Korea	KRW	0.0081	0.0079	0.0081	0.0080
United States	USD	9.4604	8.6995	9.3171	8.9710

1:1

### New accounting policies 2019

As from January 1, 2019, the Volvo Group applies the following new accounting standards and interpretations:

#### IFRS 16 Leases

IFRS 16 is a new accounting standard for lease accounting and is applied from January 1, 2019. The major impact of the new standard for the Volvo Group and the effect of implementation are disclosed in note 31.

#### IFRIC 23 Uncertainty over Income Tax Treatments

IFRIC 23 is a new interpretation for how to account for uncertain income tax treatments and is applied from January 1, 2019. The major impact of the new interpretation for the Volvo Group and the effect of implementation are disclosed in note 31.

Other new or revised accounting standards or interpretations are not considered to have a material impact on the Volvo Group's financial statements.


### New accounting policies 2020 and later

There are no new or revised accounting standards or interpretations that have been published which are effective from 2020 and later that are considered to have a material impact on the Volvo Group's financial statements.



## 2 KEY SOURCES OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

The Volvo Group's most significant accounting policies are described together with the applicable note, read more in note 1 Accounting Policies for a specification. The preparation of AB Volvo's Consolidated Financial Statements requires the use of estimates and assumptions that may affect the recognized amounts of assets and liabilities at the date of the financial statements. In addition, the recognized amounts of net sales and expenses during the periods presented are affected. In preparing the financial statements, management has made its best judgments of certain amounts included in the financial statements, materiality taken into account. Actual results may differ from previously made estimates. In accordance with IAS 1, the company is required to disclose the assumptions and other major sources of estimation uncertainties that, if actual results differ, may have a material impact on the financial statements.

 The sources of estimation uncertainty and critical judgments identified by the Volvo Group and which are considered to fulfill these criteria are presented in connection to the items considered to be affected. The table 2:1 discloses where to find these descriptions.

### Source of estimation uncertainty and critical judgments

	Note
Sales with residual value commitments and variable sales price	7, Revenue
Deferred taxes and uncertainty over income tax treatments and claims	10, Income taxes
Impairment of goodwill and other intangible assets	12, Intangible assets
Impairment of tangible assets and residual value risks	13, Tangible assets
Measurement of lease liabilities and right-of-use assets	14, Leasing
Allowance for expected credit losses	15, Customer-financing receivables 16, Receivables
Inventory obsolescence	17, Inventories
Assumptions when calculating post-employment benefits	20, Provisions for post-employment benefits
Provisions for product warranty and provisions for legal proceedings	21, Other provisions

2:1

## 3

## ACQUISITIONS AND DIVESTMENTS OF SHARES IN SUBSIDIARIES



## ACCOUNTING POLICY

**Recognition of acquisitions and divestments**

All acquisitions and divestments are recognized in accordance with the acquisition method. Volvo Group measures acquired identifiable assets, tangible and intangible, and liabilities at fair value. Any surplus amount from the purchase price, possible non-controlling interest and fair value of previously held equity interests at the acquisition date compared to the Volvo Group's share of acquired net assets is recognized as goodwill. Any deficit amount, known as gain from a bargain purchase, is recognized in the income statement.

For acquisitions done in stages, a business combination occurs only on the date control is achieved, which is also the time when goodwill is calculated. Transactions with the non-controlling interest are recognized as equity as long as control of the subsidiary is retained. For each business combination, the Volvo Group decides whether the non-controlling interest shall be valued at fair value or at the non-controlling interest's proportionate share of the net assets of the acquiree. All acquisition-related costs are expensed. Companies acquired during the year are consolidated as of the date of acquisition. Companies that have been divested are included in the consolidated financial statements up to and including the date of the divestment. Divestment of operations with the main purpose to dispose intangible and tangible assets is treated as disposal of intangible and tangible assets.

**Assets and liabilities held for sale and discontinued operations**

In a global group like the Volvo Group, processes are continuously ongoing regarding the sale of assets or groups of assets at minor values. When the criteria for being classified as an assets and liabilities held for sale are fulfilled and the asset or group of assets are of significant value, the asset or group of assets, both current and non-current, and the related liabilities are recognized on separate lines in the balance sheet. The asset or group of assets are measured at the lower of its carrying amount and fair value after deductions for selling expenses. The balance sheet items and the potential income effect resulting from the revaluation to fair value less selling expenses are, if related to Industrial Operations, normally recognized in the segment Group functions & Other, otherwise in the Financial Services segment. When the sale is completed the result is distributed to the relevant segments.

AB Volvo's holding of shares in subsidiaries as of December 31, 2019 is disclosed in note 13 for the Parent Company. Significant acquisitions, formations and divestments within the Volvo Group are listed below.

**Acquisitions during the period**

The Volvo Group has not made any acquisitions of subsidiaries during 2019 and 2018, which solely or jointly have had a significant impact on the Volvo Group's financial statements.

### Divestments during the period

The Volvo Group has made divestments during 2019 which resulted in a positive effect on operating income of SEK 1,606 M. The gain mainly pertains to sale of the majority of the Volvo Group's holding of shares in WirellessCar. The Volvo Group has not made any other acquisitions or divestments during 2019 that have had a significant impact on the Volvo Group. The Volvo Group did not make any divestments during 2018, which solely or jointly had a significant impact on the Volvo Group's financial statements.

The impact on the Volvo Group's balance sheet and cash flow statement in connection with the divestment of subsidiaries and other business units are specified in the following table:

Divestments	2019	2018
Property, plant and equipment	-1	-25
Assets under operating lease	-1	-
Inventories	-	-4
Accounts receivables	-133	-
Other receivables	-248	2
Cash and cash equivalents	-	-
Provisions	13	-
Trade payables	118	-
Other liabilities	146	-
Divested net assets	-106	-27
Goodwill	-22	-
<b>Total</b>	<b>-128</b>	<b>-27</b>
<b>Additional purchase price</b>	<b>-</b>	<b>-</b>
Cash and cash equivalents received	1,343	30
Cash and cash equivalents, divested companies	-	-
<b>Effect on Volvo Group cash and cash equivalents</b>	<b>1,343</b>	<b>30</b>
<b>Effect on Volvo Group net financial position</b>	<b>1,324</b>	<b>30</b>

3:1

### Assets and liabilities held for sale

As of December 31, 2019, the Volvo Group recognized assets and liabilities held for sale amounting to SEK 32,773 M (203) and SEK 10,413 M (-) respectively. The amounts increased during the year are mainly due to the intention to transfer ownership of the complete UD Trucks business globally from the Volvo Group to Isuzu Motors. No translation differences on foreign operations were recognized in other comprehensive income related to the reclassified assets and liabilities held for sale.

For the comparative year 2018, the Volvo Group recognized assets amounting to SEK 203 M as assets and liabilities held for sale. Those mainly pertained to planned property divestments. No translation differences on foreign operations were recognized in other comprehensive income related to the reclassified assets and liabilities held for sale.

Assets and liabilities held for sale in Industrial Operations has been reclassified within the segment Group functions & Other. Assets and liabilities held for sale in Financial Services has been reclassified within the segment Financial Services.

Assets and liabilities held for sale	Dec 31, 2019	Dec 31, 2018
Intangible assets	3,096	-
Tangible assets	11,831	203
Financial assets	4,324	-
Inventories	5,510	-
Accounts receivable	4,742	-
Other current receivables	3,269	-
<b>B/S Total assets</b>	<b>32,773</b>	<b>203</b>
Provisions	1,340	-
Other non-current liabilities	910	-
Trade payables	4,774	-
Other current liabilities	3,388	-
<b>B/S Total liabilities</b>	<b>10,413</b>	<b>-</b>

3:2

### Acquisitions and divestments after the end of the period

The Volvo Group has not made any acquisitions or divestments after the end of the period that have had a significant impact on the Volvo Group.

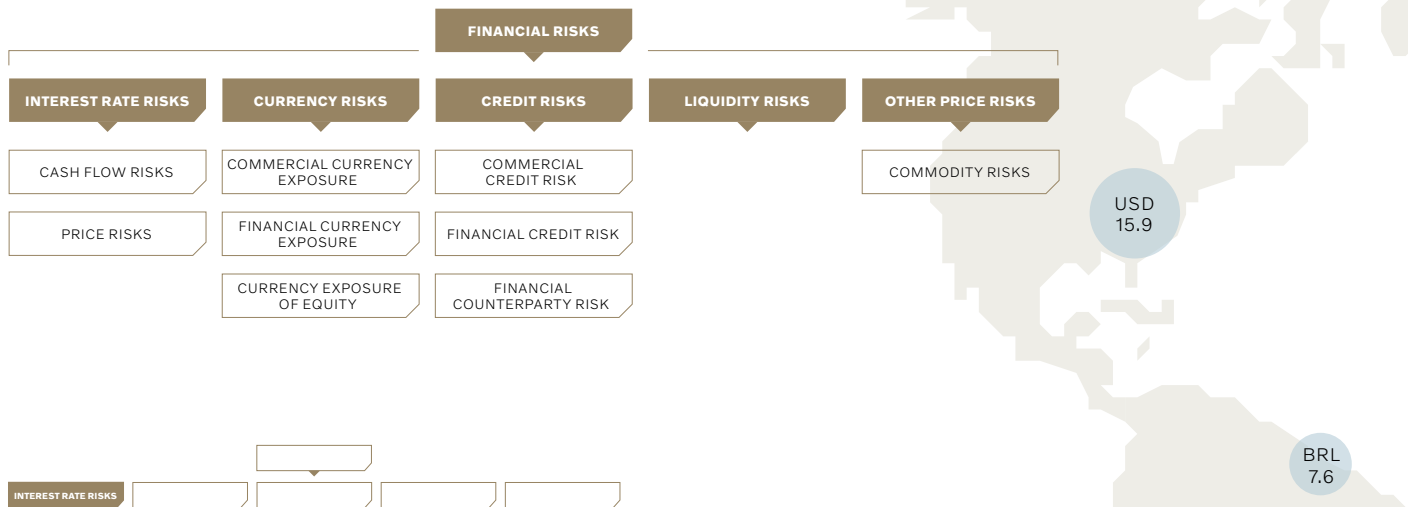
# 4 GOALS AND POLICIES IN FINANCIAL RISK MANAGEMENT

The Volvo Group's global operations expose the Group to financial risks in the form of interest rate risks, currency risks, credit risks, liquidity risks and other price risks. The board of AB Volvo has adopted a financial risk policy that regulates how these risks should be controlled and governed and defines roles and responsibilities within the Volvo Group. The financial risk policy also establishes principles for how financial activities shall be carried out, sets mandates and steering principles for the management of financial risks as well as defines the financial instruments to be used for mitigating these risks. The financial risk policy is reviewed on an annual basis. The

Volvo Group manages financial risk as an integrated element of the business operations where parts of the responsibility for the finance operation and financial risk management are centralized to Volvo Group Treasury, the internal bank of the Volvo Group.

» **Read more in Note 30** Financial instruments about accounting policies for financial instruments.

» **Read more** in section Financial Management, page 97 and section Risks and uncertainties, page 102 about financial risk management.



## INTEREST RATE RISKS A

Interest rate risk refers to the risk that changed interest rates will affect the Volvo Group's net income and cash flow (cash flow risk) or the fair value of financial assets and liabilities (price risk).

### POLICY

Matching the interest fixing terms of financial assets and liabilities reduces the exposure. Interest rate swaps are used to change/influence the interest fixing term for the Volvo Group's financial assets and liabilities. Currency interest rate swaps enable borrowing in foreign currencies from different markets without introducing currency risk. The Volvo Group may from time to time use other types of forward contracts (futures) and forward rate agreements (FRAs). Most of these contracts are used to hedge interest rate levels for current borrowing or investments.

#### Cash flow risks

The effect of changed interest rate levels on future currency and interest flows primarily pertains to Financial Services and Industrial Operations' net financial items. Financial Services measure the degree of matching

interest rate fixing on borrowing and lending. The calculation of the matching degree excludes equity, which amounted to 8% in Financial Services. At year end 2019, the degree of such matching ratio was 99% (100) in Financial Services which is in line with the Group policy. In addition to the financial assets in Financial Services, the Volvo Group's interest-bearing assets consisted primarily of cash and cash equivalents. On December 31, 2019 the average interest on Industrial Operations financial assets was 0.4% (0.6). The Industrial Operations results and profitability are closely aligned to the business cycle. Therefore in order to minimize the interest rate risk, outstanding loans had interest terms corresponding to an interest rate fixing of between one to three months. The average interest on Industrial Operations financial liabilities at year end amounted to 4.4% (4.5), including the Volvo Group's credit costs.

Table 4.1 shows the impact on income after financial items in Industrial Operations net financial position, excluding lease liabilities and pensions and similar obligations, if interest rates were to increase by 1 percentage point, assuming an average interest rate fixed term of three months on the liability side.<sup>1</sup> The impact on equity is earnings after tax.

#### Price risks C

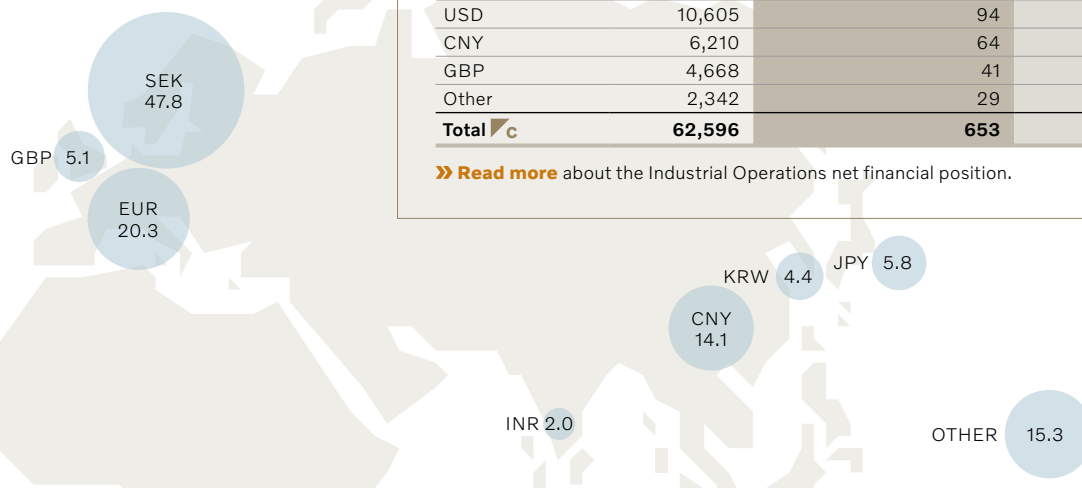
Exposure to price risk as a result of changed interest rate refers to financial assets and liabilities with a longer interest rate fixing term (fixed interest). This is not a risk for Industrial Operations since all outstanding loans are signed with a short interest rate fixing.

<sup>1</sup> The sensitivity analysis on interest rate risk is based on simplified assumptions. It is not unlikely for market interest rates to change by one percentage point on an annual basis. However, in reality, these rates often rise or decline at different points in time. The sensitivity analysis also assumes a parallel deferment of the return curve, and that the interest on assets and liabilities will be equally impacted by changes in market interest rates. Accordingly, the impact of real interest rate changes may differ from the analysis presented in table 4.1.

» **Read more in Note 20** Provisions for post-employment benefits regarding sensitivity analysis on the defined benefit obligations when changes in the applied assumptions for discount rate and inflations are made.



The Volvo Group's  
net assets in different  
currencies (SEK bn) =



Risk net financial position Dec 31, 2019 SEK M	Net financial position excl. pensions and lease liabilities	Impact on income after financial items if interest rate rises 1% A (Interest rate risks)	Impact on net financial position if SEK appreciates against other currencies 10% B (Currency risks)
SEK	42,212	453	–
JPY	–14,236	–124	1,424
EUR	10,795	95	–1,079
USD	10,605	94	–1,060
CNY	6,210	64	–621
GBP	4,668	41	–467
Other	2,342	29	–234
<b>Total C</b>	<b>62,596</b>	<b>653</b>	<b>–2,038</b>

» Read more about the Industrial Operations net financial position.

4:1



## CURRENCY RISKS B

The balance sheet may be affected by changes in different exchange rates. Currency risks in the Volvo Group's operations are related to changes in the value of contracted and expected future payment flows (commercial currency exposure), changes in the value of loans and investments (financial currency exposure) and changes in the value of assets and liabilities in foreign subsidiaries (currency exposure of equity).



## POLICY

The aim of the Volvo Group's currency risk management is to secure cash flow from firm flows through currency hedges pursuant to the established Financial risk policy, and to minimize the exposure of financial items in the Volvo Group's balance sheet. Below is a presentation on how this work is conducted for commercial and financial currency exposure, and for currency exposure of equity.

### Volvo Group's outstanding derivatives hedging commercial currency risks December 31, 2019

Millions	USD/SEK	USD/KRW	GBP/SEK	EUR/USD	USD/BRL
Due date 2020	228	156	107	–24	13
<b>Total local currency</b>	<b>228</b>	<b>156</b>	<b>107</b>	<b>–24</b>	<b>13</b>
Average contract rate	9.49	1,171.41	12.24	1.14	3.82
<b>Market value of outstanding derivatives, SEK M</b>	<b>47</b>	<b>31</b>	<b>5</b>	<b>–3</b>	<b>7</b>

4:2

» **Goals and policies in financial risk management (cont.)****Sensitivity analysis<sup>1</sup>**

<b>Risk currency exposure 2019</b>	Transaction exposure from operating net flows	Impact on operating income if currency rate appreciates against all other currencies by 10% ■ B (Currency risks)
SEK bn		
SEK	-53	-5.3
KRW	-7	-0.7
EUR	7	0.7
GBP	9	0.9
USD	12	1.2

The deficit in transaction exposure in SEK is mainly generated from flows in USD, GBP, EUR, NOK and ZAR against SEK.

4:3

**Commercial currency exposure***Transaction exposure from commercial flows*

The Volvo Group conducts manufacturing in 18 countries around the globe and more than 95% of net sales are generated in countries other than Sweden. Transaction exposure from commercial flows in foreign currency is generated from internal purchases and sales between manufacturing entities and market companies and external sales and purchases in foreign currency around the globe. As the predominant parts of the operations in the Volvo Group are situated outside Sweden, the fluctuations in currency rates affecting the transaction flows in foreign currency are in many cases not against SEK. Volvo Group's transaction exposure in key currencies is presented in graph 4:5. The graph represents the transaction exposure from commercial operating net cash flows in foreign currency, expressed as net surpluses or deficits in key currencies. The deficit in SEK and KRW is mainly an effect of manufacturing costs in the plants in Sweden and South Korea, but limited external revenues in those currencies. The surplus in EUR on the other hand, is the net of significant gross volumes of sales and purchases made by many entities around the globe in EUR. The surplus in USD is mainly generated from external sales to entities in the USA and emerging markets. The surplus in GBP is generated from external sales to the UK.

The hedging of the Volvo Group's commercial currency exposure is executed centrally. The Volvo Group's consolidated currency portfolio exposure is the value of forecasted flows in foreign currency. The Volvo Group only hedge the part of the forecasted portfolio that is considered highly probable to occur, i.e. firm flows, where the main parts will be realized within six months. The Volvo Group uses forward contracts and currency options to hedge the portion of the value of forecasted future payment flows in foreign currency. The hedged amount of firm flows for all periods fall within the framework of the Volvo Group's Financial risk policy. Table 4:2 shows outstanding derivatives for the hedging of commercial currency risks.

*Translation exposure from the consolidation of operating income in foreign subsidiaries*

In conjunction with the translation of operating income in foreign subsidiaries, the Volvo Group's income is impacted if currency rates change. The Volvo Group does not hedge this risk. Graph 4:7 shows the translation effect in key currencies when consolidating operating income for 2019 in foreign subsidiaries in Industrial Operations.

» **Read more** in section Currency exposure of equity.

*Sensitivity analysis for transaction exposure<sup>1</sup>*

The table 4:3 illustrates the impact on operating income if key currencies for Volvo Group appreciate by 10% against all other currencies. Hedge accounting is not applied on derivatives hedging cash flows in foreign currency. As a consequence the impact on equity equals the impact on operating income before tax.

*Volvo Group currency review*

The tables and graphs 4:4 4:5 4:6 4:7 and 4:8 illustrate the transaction exposure and currency impact on operating income from commercial net flows in foreign currency, translation effect when consolidating operating income in foreign subsidiaries and currency impact on sales in key currencies.

» **Read more** about Volvo Group transaction exposure in section Commercial currency exposure above.

**Financial currency exposure**

Loans and investments in the Volvo Group's subsidiaries are performed mainly in local currencies through Volvo Group Treasury, which minimizes individual companies' financial currency exposure. Volvo Group Treasury uses various derivatives to facilitate lending and borrowing in different currencies without increasing the risk for the Volvo Group. The net financial position of the Volvo Group is affected by currency fluctuations since financial assets and liabilities are distributed among the Volvo Group companies that conduct their operations using different currencies.

Table 4:1 discloses the impact on income after financial items on Industrial Operations net financial position, excluding pensions and similar net obligations, if SEK were to strengthen by 10%.

**Currency exposure of equity**

The carrying amount of assets and liabilities in foreign subsidiaries are affected by current exchange rates in conjunction with the translation of assets and liabilities to SEK. To minimize currency exposure of equity, the size of equity in foreign subsidiaries is continuously optimized with respect to commercial and legal conditions. Currency hedging of equity may occur in cases where a foreign subsidiary is considered overcapitalized. Net assets in foreign subsidiaries, associated companies and joint ventures amounted at year end 2019 to SEK 90 billion (80). The need to undertake currency hedging relating to investments in associated companies, joint ventures and other companies is assessed on a case-by-case basis.

On the map on the previous pages the Volvo Group's net assets in different currencies (SEK bn) are displayed.

» **Read more in Note 30** Financial instruments about Volvo Group's policy choice on hedge accounting.

<sup>1</sup> The sensitivity analysis on currency rate risks is based on simplified assumptions. It is not unlikely for a currency to appreciate by 10% in relation to other currencies. In reality however, all currencies usually do not change in the

same direction at any given time, so the actual effect of exchange rate changes may differ from the sensitivity analysis.

Please refer to tables 4:1 4:3

### The Volvo Group's currency review

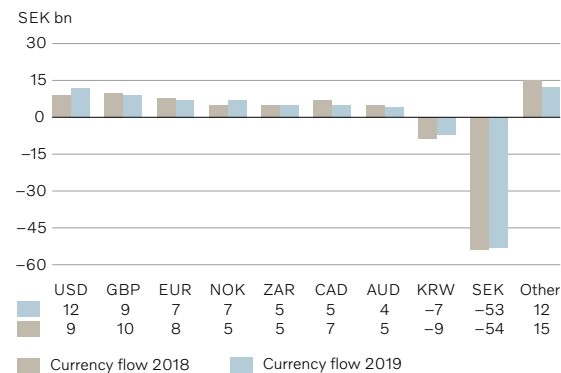
When the Volvo Group communicates the currency impact on operating income, the following factors are included:

Currency impact on operating income, Volvo Group, SEK billion	2019	2018	Change
Net flows in foreign currency			2.0
Realized and unrealized gains and losses on hedging contracts	-0.0	-0.0	-0.0
Unrealized gains and losses on receivables and liabilities in foreign currency	-0.1	-0.4	0.3
Translation effect on operating income in foreign subsidiaries			2.0
<b>Total currency impact on operating income Volvo Group</b>			<b>4.3</b>

Currency impact on net flows in foreign currency is detailed in graph 4:6 and Translation effect on operating income in foreign subsidiaries is detailed in graph 4:7 in key currencies.

4:4

### Transaction exposure from commercial net flows in 2019 and 2018

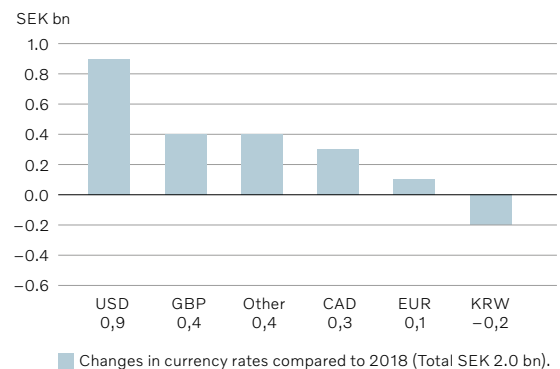


The graph above represents the transaction exposure from commercial operating net cash flows in foreign currency, expressed as net surpluses or deficits in key currencies.

>> Read more in section Commercial currency exposure.

4:5

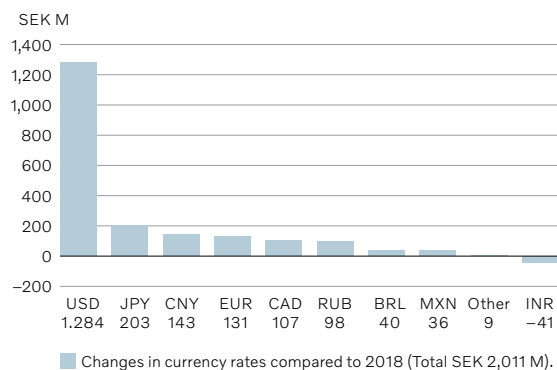
### Currency impact on operating income from net flows in foreign currency 2019 versus 2018



Currency effect on operating income from net flows in foreign currency in Volvo Group is presented in the graph above.

4:6

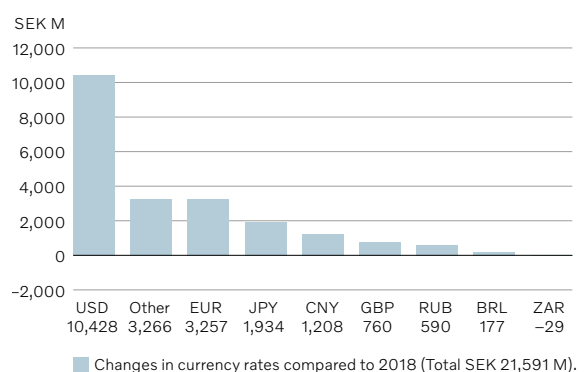
### Translation effect on operating income in 2019 versus 2018



Translation effect when consolidating operating income in foreign subsidiaries for Volvo Group is presented in the graph above.

4:7

### Currency impact on net sales in 2019 versus 2018



Currency effect on net sales from inflows in foreign currency and translation effect when consolidating net sales in foreign subsidiaries for Volvo Group is presented in the graph above.

4:8 &gt;&gt;

» **Goals and policies in financial risk management (cont.)****CREDIT RISKS**

Credit risk is defined as the risk that the Volvo Group does not receive payment for recognized accounts receivables and customer-financing receivables (commercial credit risk), that the Volvo Group's investments are unrealizable (financial credit risk) and that potential profit is not realized due to the counterparty not fulfilling its part of the contract when using derivative instruments (financial counterparty risk).

**POLICY**

The objective of the Volvo Group's credit risk management is to define, measure and monitor the credit exposure in order to minimize the risk of losses deriving from credit to customers and suppliers, financial credit risk, counterparty risk and customer finance activities within Financial Services.

**Commercial credit risk**

The Volvo Group's credit granting is steered by group policies and customer-classification rules. The credit portfolio should contain a distribution among different customer categories and industries. The credit risk is managed through active credit monitoring, follow-up routines and, where applicable, product repossession. Moreover, regular monitoring ensures that necessary allowances are made for expected credit losses on financial assets. Risk management practices for Financial Services are presented in note 15 Customer-financing receivables and for Industrial Operations in note 16 Receivables. Moreover, note 15 includes information on gross exposure for customer-financing receivables by past due status and in note 16 accounts receivables, a gross exposure for accounts receivables by past due status is presented in relation to allowance for expected credit losses. The customer-financing receivables in the Volvo Group amounted to net SEK 143 billion (127) on December 31, 2019. The credit risk of this portfolio is distributed over a large number of retail customers and dealers. Collateral is provided in the form of the financed products. In the credit granting the Volvo Group strives for a balance between risk exposure and expected return.

The Volvo Group's accounts receivables as of December 31, 2019 amounted to net SEK 38 billion (42).

» **Read more in Note 15** Customer-financing receivables about Volvo Group's concentration of credit risk in Financial Services.

» **Read more in Note 16** Receivables.

**Financial credit risk**

The Volvo Group's financial assets are to a large extent managed by Volvo Group Treasury. All investments must meet the requirements of high liquidity and low credit risk. According to the Volvo Group's financial risk policy, this includes using counterparties for investments and derivative transactions with a credit rating better or equivalent to A- from one of the well-established credit rating institutions or similar.

Cash and cash equivalents including marketable securities as of December 31, 2019 amounted to SEK 62 billion (47) and consists primarily of bank account positions.

» **Read more in Note 18** Cash and cash equivalents.

**Financial counterparty risk**

The use of derivatives involves a counterparty risk, in that a potential loss may not be possible to offset (in full or in part) against a potential gain if the counterparty fails to fulfill its part of the contract. The Volvo Group is actively working with limits per counterpart in order to reduce risk for high net amounts towards individual counterparts. To reduce the exposure further the Volvo Group enters into master netting agreements, so called ISDA agreements, with all counterparts eligible for derivative transactions. The netting agreements provide the possibility for assets and liabilities to be offset under certain circumstances, such as in the case of the counterpart's insolvency. A Credit Support Annex (CSA) often accompanies the ISDA agreement. The CSA stipulates the terms and conditions under which the two parties are required to make cash transfers to each other in order to further reduce the exposure from the net open positions. The netting agreements have no effect on the income statement or the financial position of the Volvo Group, since derivative transactions are accounted for on a gross basis. Table 4:9 shows the effect of netting agreements and cash transfers on the Volvo Group's gross exposure from outstanding interest and currency risk derivatives as per December 31, 2019.

» **Read more in Note 30** Financial instruments about the Volvo Group's gross exposure from positive derivatives per type of instrument.

**The impact from netting agreements and cash transfers on the Volvo Group's gross exposure from derivatives as per Dec 31, 2019**

	Gross amount	Netting agreements	Cash transfers	Net position	Change
Interest and currency risk derivatives reported as assets	2,015	-1,409	-376	230	89%
Interest and currency risk derivatives reported as liabilities	2,469	-1,409	-775	285	88%



## LIQUIDITY RISKS



## LIQUIDITY RISKS

Liquidity risk is defined as the risk that the Volvo Group would be unable to finance or refinance its assets or fulfill its payment obligations.



## POLICY

The Volvo Group ensures sound financial preparedness by always keeping a certain percentage of its sales in liquid assets, mainly as bank account positions in banks rated at least A– from one of the well-established credit rating institutions or similar. A sound balance between current and non-current debt maturities, as well as non-current committed credit facilities, is intended to secure liquidity preparedness, and thus the Volvo Group's payment capability.

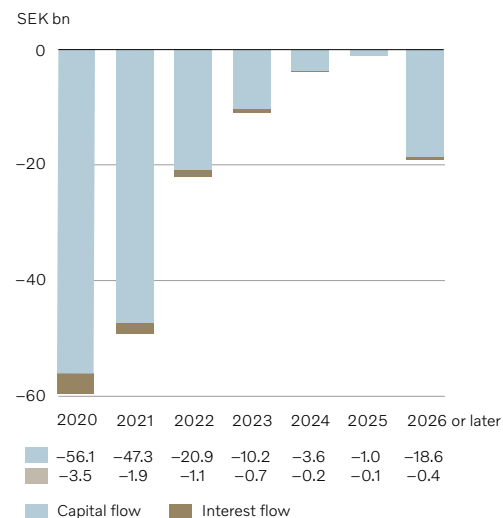
The Volvo Group's cash and cash equivalents amounted to SEK 62 billion (47) on December 31, 2019. In addition to this, granted but unutilized credit facilities amounted to SEK 43 billion (44). Graph 4:10 discloses expected future cash flows related to financial liabilities. Capital flow refers to expected payments of loans, lease liabilities and derivatives, see note 22 Liabilities. Expected interest flow refers to the future interest payments on loans, lease liabilities and derivatives based on interest rates anticipated by the market. The interest flow is recognized within cash flow from operating activities. The maturity structure of the unutilized credit facilities is also disclosed in note 22, in table 22:3. The predominant part of expected future cash flows that expire within 2020 and 2021 is an effect of the Volvo Group's normal business cycle, with shorter duration in the portfolio within Financial Services compared to Industrial Operations.

Financial Services measure the degree to which the duration of borrowing and lending matches. The calculation of the matching degree excludes equity, which amounted to 8% in Financial Services. At year-end 2019, the degree of such matching was 99% (100) for the segment Financial Services, which was in line with the Volvo Group's policy. Volvo Group Treasury has, for practical as well as business reasons, the mandate to mismatch their portfolio for Financial Services between a matching ratio of 80–120%. At year-end 2019, the matching ratio was 95% (93). Any gains or losses from the mismatch impact the segment Group functions & other within industrial Operations.

The hybrid bond in the Volvo Group amounting to EUR 1.5 billion was issued in 2014 in order to further strengthen the Volvo Group's balance sheet and prolong the maturity structure of the debt portfolio. The hybrid bond is classified as a loan with an original duration of 61.6 years, subordinated to all other financial liabilities currently outstanding.

>> Read more in Note 14 Leasing about the maturity for non-current lease liabilities in table 14:5.

**Future cash flow including lease liabilities and derivatives related to non-current and current financial liabilities<sup>1</sup>**



4:10

<sup>1</sup> In addition to derivatives included in graph 4:10 there are also derivatives in the Volvo Group related to financial liabilities with a positive fair value recognized as assets, which are expected to give a future capital flow of SEK 1.3 billion (2.9) and a future interest flow of SEK 0.2 billion (0.0).

## OTHER PRICE RISKS



## OTHER PRICE RISKS

## Commodity risks

Commodity risk refers to the risk that changed commodity prices will affect the consolidated earnings within the Volvo Group. Procurement of commodities such as steel, precious metals and electricity are made in the Volvo Group on a regular basis where prices are set in the global markets.



## POLICY

Changes in commodity prices are included in the product cost calculation. Increased commodity prices are therefore reflected in the sales price of the Volvo Group's final products. Purchasing agreements with commodity suppliers may also be long-term in nature or structured in a way to decrease the volatility in commodity prices.

## 5 INVESTMENTS IN JOINT VENTURES, ASSOCIATED COMPANIES AND OTHER SHARES AND PARTICIPATIONS



### ACCOUNTING POLICY

#### *Subsidiaries*

The Volvo Group has production facilities in 18 countries and sales of products in more than 190 markets, which means that the Volvo Group has subsidiaries in many parts of the world. A subsidiary is defined as an entity controlled by the Volvo Group. A subsidiary is controlled when the parent company has power over the investee, exposes over or holds rights to variable returns from its involvement with the investee and holds the ability to use its power over the investee to affect the amount of the investor's return. Most of the Volvo Group's subsidiaries are 100% owned and are therefore considered to be controlled by the Volvo Group. For some subsidiaries there are restrictions on the Volvo Group's ability to access or use cash or cash equivalents from these subsidiaries.

» Read more in Note 11 Non-controlling interest.

» Read more in Note 13 Investments in shares and participations in the parent company about the composition of the Volvo Group.

» Read more in Note 18 Cash and cash equivalents.

#### *Joint ventures*

Joint ventures are companies over which the Volvo Group has controlling influence together with one or more external parties. Joint ventures are recognized by applying equity method accounting. The Volvo Group has holdings in a few joint ventures with VE Commercial Vehicles, Ltd., (VECV) being the significant holding. The investment in VECV is of a business related nature and aims at strengthening the Volvo Group's position in India. VECV is included in the Trucks segment.

#### *Associated companies*

Associated companies are companies in which the Volvo Group has a significant influence. A strong indication of such influence is when the Group's holding is at least 20% but less than 50% of the voting rights. Holdings in associated companies are recognized in accordance with the equity method accounting. The ownership in the Chinese automotive manufacturer Dongfeng Commercial Vehicles Co., Ltd (DFCV) is classified as an associated company and is included in the Trucks segment. The Volvo Group reduced their shares in subsidiary WirelessCar during 2019 and the ownership is now classified as an associated company.

#### *Equity method*

The Volvo Group's share of the companies' income/loss recognized according to the equity method is included in the Volvo Group's income statement as income/loss from investments in joint ventures and associated companies. Where appropriate, the income has been reduced by depreciation of surplus values and the effect of applying different accounting policies has been taken into account. Income from companies recognized in accordance with the equity method is included in operating income since the Volvo Group's investments are business related in nature. For practical reasons, some of the associated companies are included in the consolidated financial statements with a certain time lag, normally up to one quarter. Dividends from joint ventures and associated companies are not included in the consolidated income. The carrying amount of investments in joint ventures and associated companies are affected by the Volvo Group's share of the company's net income, less depreciation of surplus values and dividends received. Investments in joint ventures and associated companies are also affected by the Volvo Group's share of the company's other comprehensive income and by the translation difference from translating the company's equity in the consolidation of the Volvo Group. When applying the equity method and associates or joint ventures recognize losses, additional impairment losses might be recognized given any indication of impairment. For instance a significant or prolonged decline in the fair value of the shares is an indication of impairment. However, investments accounted for in accordance with the equity method cannot amount to a negative carrying value and losses are therefore not adjusted for if the holding is of a negative amount. Additional losses are provided for to the extent that the Volvo Group has incurred legal or constructive obligations to make payments on behalf of the joint venture or the associated company.

#### *Other shares and participations*

Other shares and participations recognizes holding of shares in which the Volvo Group does not hold a significant influence. This generally means that the Volvo Group's holding of shares corresponds to less than 20% of the voting rights. Listed shares are recognized at fair value through other comprehensive income since the shares are not held for trading. For unlisted shares and participations, a fair value cannot be reasonably measured, hence these are measured at amortized cost. Earned or paid interest attributable to these assets is recognized in the income statement as part of net financial items, in accordance with the effective interest method. Dividends received attributable to these assets are recognized as income from other investments within operating income.

» Read more in Note 30 Financial instruments, regarding classification and valuation of financial instruments.

### Joint ventures

The Volvo Group's investments in joint ventures are listed below.

Investments in joint ventures	Dec 31, 2019 Percentage holding	Dec 31, 2019 Carrying value	Dec 31, 2018 Percentage holding	Dec 31, 2018 Carrying value
VE Commercial Vehicles, Ltd., (VECV) <sup>1</sup>	45.6	2,854	45.6	2,715
Other holdings in joint ventures <sup>2</sup>		1		–
<b>Investments in joint ventures</b>		<b>2,855</b>		<b>2,715</b>

5:1

1 VE Commercial Vehicles, Ltd., is considered to be a joint venture as the Volvo Group and Eicher Motors Ltd. have signed an agreement which states that common agreement is needed for important matters related to the governance of VECV.

2 Other holdings in joint ventures include investments in SOPROVI Algérie SPA and PT UD Astra Motor Indonesia. Part of other holdings in joint ventures have been reclassified to assets held for sale. » Read more in Note 3 Acquisitions and divestments of shares in subsidiaries.

The following tables present summarized financial information for the Volvo Group's joint ventures:

Summarized income statements	2019			2018		
	VECV	Other joint ventures	Total	VECV	Other joint ventures	Total
Net sales	12,853	232	13,084	14,764	–	14,764
Operating income <sup>1</sup>	381	–6	375	851	–	851
Interest income and similar credits	96	1	97	106	–	106
Interest expense and similar charges	–35	0	–35	–24	–	–24
Other financial income and expenses	–2	–	–2	–1	–	–1
Income taxes	–152	1	–151	–301	–	–301
<b>Income for the period<sup>2</sup></b>	<b>287</b>	<b>–3</b>	<b>284</b>	<b>631</b>	<b>–</b>	<b>631</b>
<b>Other comprehensive income<sup>3</sup></b>	<b>–5</b>	<b>–</b>	<b>–5</b>	<b>0</b>	<b>–</b>	<b>0</b>
<b>Total comprehensive income</b>	<b>282</b>	<b>–3</b>	<b>280</b>	<b>631</b>	<b>–</b>	<b>631</b>

5:2

1 Depreciation and amortization of SEK 503 M (423) are included within operating income.

2 Income for the period in joint ventures includes depreciation of surplus values.

3 Including the Volvo Group's share of OCI related to joint ventures. Translation differences from translating joint ventures' equity in the Volvo Group are excluded.

Summarized balance sheets	Dec 31, 2019			Dec 31, 2018		
	VECV	Other joint ventures	Total	VECV	Other joint ventures	Total
Non-current assets	6,421	13	6,434	5,314	–	5,314
Marketable securities, cash and cash equivalents	1,249	16	1,266	1,229	–	1,229
Other current assets	4,541	152	4,693	6,133	–	6,133
<b>Total assets</b>	<b>12,211</b>	<b>181</b>	<b>12,393</b>	<b>12,676</b>	<b>–</b>	<b>12,676</b>
Equity <sup>1</sup>	6,259	77	6,337	5,948	–	5,948
Non-current financial liabilities	91	–	91	13	–	13
Other non-current liabilities	354	–	354	466	–	466
Current financial liabilities	3,475	75	3,550	3,795	–	3,795
Other current liabilities	2,032	29	2,061	2,454	–	2,454
<b>Total equity and liabilities</b>	<b>12,211</b>	<b>181</b>	<b>12,393</b>	<b>12,676</b>	<b>–</b>	<b>12,676</b>

5:3

1 Including the translation differences from translating joint ventures' equity in the Volvo Group.

Net financial position for the joint ventures (excluding post-employment benefits) amounted to SEK 974 M (888) as of December 31, 2019.

As of December 31, 2019, the Volvo Group's share of contingent liabilities in its joint ventures amounted to SEK 110 M (143). Dividend received from VECV amounted to SEK 78 M (70).





### Associated companies

The Volvo Group's investments in associated companies are listed below.

Investments in associated companies	Dec 31, 2019 Percentage holding	Dec 31, 2019 Carrying value	Dec 31, 2018 Percentage holding	Dec 31, 2018 Carrying value
Dongfeng Commercial Vehicles Co., Ltd (DFCV)	45.0	9,349	45.0	7,973
Other holdings in associated companies <sup>1</sup>		751		447
<b>Investments in associated companies</b>		<b>10,100</b>		<b>8,420</b>

5:4

1 Other holdings in associated companies include the investment in two dealers in Japan, Blue Chip Jet II HB and WirelessCar.

The following tables present summarized financial information for the Volvo Group's associated companies:

Summarized income statements	2019			2018		
	DFCV	Other associated companies	Total	DFCV	Other associated companies	Total
Net sales	61,210	3,431	64,641	53,261	3,993	57,254
Operating income	3,272	53	3,325	2,367	114	2,481
<b>Income for the period<sup>1</sup></b>	<b>3,038</b>	<b>38</b>	<b>3,076</b>	<b>1,867</b>	<b>109</b>	<b>1,976</b>
<b>Other comprehensive income<sup>2</sup></b>	<b>2</b>	<b>–</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total comprehensive income</b>	<b>3,040</b>	<b>38</b>	<b>3,078</b>	<b>1,867</b>	<b>109</b>	<b>1,976</b>

5:5

1 Income for the period in associated companies includes depreciation/amortization of surplus values and internal transactions.

2 Including the Volvo Group's share of other comprehensive income related to associated companies. Translation differences from translating the associated companies' equity in the Volvo Group are excluded.

Summarized balance sheets	Dec 31, 2019			Dec 31, 2018		
	DFCV	Other associated companies	Total	DFCV	Other associated companies	Total
Non-current assets	20,681	1,159	21,841	18,173	1,668	19,841
Current assets	49,349	2,195	51,544	36,540	3,807	40,347
<b>Total assets</b>	<b>70,030</b>	<b>3,355</b>	<b>73,385</b>	<b>54,713</b>	<b>5,475</b>	<b>60,188</b>
Equity	20,039	1,368	21,407	17,997	2,199	20,196
Non-current liabilities	4,986	331	5,317	2,367	491	2,858
Current liabilities	45,005	1,656	46,660	34,350	2,784	37,134
<b>Total equity and liabilities</b>	<b>70,030</b>	<b>3,355</b>	<b>73,385</b>	<b>54,713</b>	<b>5,475</b>	<b>60,188</b>

5:6

Dividend of SEK 392 M (336) was received from DFCV during 2019.



Income/loss from investments in joint ventures and associated companies	2019	2018
<b>Income/loss joint ventures</b>		
VECV	135	286
Other companies	-2	-
<b>Subtotal</b>	<b>133</b>	<b>286</b>
<b>Income/loss associated companies</b>		
DFCV <sup>1</sup>	1,692	840
Other companies	35	1
<b>Subtotal</b>	<b>1,727</b>	<b>842</b>
<b>Revaluation, write-down and gain on divestment of shares associated companies</b>		
Other companies <sup>2</sup>	-	821
<b>Subtotal</b>	<b>-</b>	<b>821</b>
<b>I/S Income/loss from investments in joint ventures and associated companies<sup>3</sup></b>	<b>1,860</b>	<b>1,948</b>

5:7

1 Income/loss includes an internal profit elimination of net SEK 26 M (0) and an adjustment to Volvo Group Accounting policies of SEK 334 M (0).

2 During 2018, the Volvo Group divested the share of ownership in Inner Mongolia North Hauler Joint Stock Co., Ltd. with a gain of SEK 818 M.

3 Income/loss from investments in joint ventures include the Volvo Group's share of depreciation of surplus values of SEK 0 M (12) and associated companies include depreciation of surplus values of SEK 39 M (39).

#### Other shares and participations

The carrying amount of the Volvo Group's holding of shares and participations in other companies as of December 31, 2019, is disclosed in the table below.

» Read more in Note 30 Financial Instruments, regarding classification and valuation of financial instruments.

Holding of shares in listed and non-listed companies	Dec 31, 2019 Carrying value	Dec 31, 2018 Carrying value
Holdings in Japanese companies	0	495
Holdings in other listed companies	0	0
<b>Holding of shares in listed companies<sup>1</sup></b>	<b>0</b>	<b>496</b>
Holding of shares in non-listed companies	158	244
<b>B/S Other shares and participations</b>	<b>158</b>	<b>740</b>

5:8

1 Changes in fair value is measured through other comprehensive income and amounts to SEK 48 M (34).

# 6

## SEGMENT REPORTING



### ACCOUNTING POLICY

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing financial performance of the operating segments, has been identified as the Group Executive Board that makes strategic decisions.

The Volvo Group comprises nine business areas: Volvo Trucks, Mack Trucks, Renault Trucks, UD Trucks & JVs, Volvo Construction Equipment, Volvo Buses, Volvo Penta, Arquus and Volvo Financial Services.

Each business area, except for the truck brands and Arquus, is seen as a separate segment. Arquus is part of the segment Group functions & Other.

The truck brands are seen as one segment since the operations are highly integrated, strategic allocation of resources are done to the total segment and the independence for each truck brand are lower compared to other segments. As from January 1, 2020 a new business area, Volvo Autonomous Solutions, has been created and the financial result will be reported as part of the Trucks segment.

The Volvo Group has shared operations in both the Trucks segment and in the segment Group functions & Other. Shared operations for production, development and logistics for powertrain and parts are included in the Trucks segment. Volvo Group IT and Volvo Group Real Estate are seen as business support functions and are part of Group functions & Other. The cost of these operations is shared between the different business areas based on utilization according to principles set by the Volvo Group.

2019	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. elim.	Industrial Operations	Financial Services	Eliminations	Volvo Group
Net sales, external customers	275,178	88,400	30,083	12,732	11,005	417,398	14,590	–	431,987
Net sales, internal	1,469	205	936	555	–2,202	964	281	–1,252	–7
<b>I/S Net sales</b>	<b>276,647</b>	<b>88,606</b>	<b>31,019</b>	<b>13,287</b>	<b>8,803</b>	<b>418,361</b>	<b>14,870</b>	<b>–1,252</b>	<b>431,980</b>
Expenses	–246,937	–76,695	–29,690	–11,415	–8,713	–373,450	–12,104	1,245	–384,308
<b>I/S Income from investments in joint ventures and associated companies</b>	<b>1,841</b>	<b>–</b>	<b>8</b>	<b>4</b>	<b>6</b>	<b>1,859</b>	<b>–</b>	<b>–</b>	<b>1,859</b>
<b>I/S Operating income</b>	<b>31,552</b>	<b>11,910</b>	<b>1,337</b>	<b>1,876</b>	<b>96</b>	<b>46,771</b>	<b>2,766</b>	<b>–6</b>	<b>49,531</b>
<b>I/S Interest income and similar credits</b>						<b>320</b>	<b>–</b>	<b>0</b>	<b>320</b>
<b>I/S Interest expense and similar charges</b>						<b>–1,673</b>	<b>0</b>	<b>0</b>	<b>–1,674</b>
<b>I/S Other financial income and expense</b>						<b>–1,346</b>	<b>–</b>	<b>–</b>	<b>–1,345</b>
<b>I/S Income after financial items</b>						<b>44,071</b>	<b>2,767</b>	<b>–6</b>	<b>46,832</b>
<b>Other segment information</b>									
Depreciation, amortization and impairment	–13,905	–2,213	–752	–427	1,500	–15,797	–4,788	–	–20,585
Restructuring costs	–176	1	–28	–	–1	–204	–	–	–204
Gains/losses from divestments	–	–	–5	–	1,639	1,634	–	–	1,634
Investments in in-/tangible assets	10,574	1,317	434	538	1,061	13,924	10,008	–	23,932
<b>B/S Investments in joint ventures and associated companies</b>	<b>12,549</b>	<b>–</b>	<b>75</b>	<b>35</b>	<b>297</b>	<b>12,955</b>	<b>–</b>	<b>–</b>	<b>12,955</b>
<b>B/S Assets held for sale<sup>1</sup></b>						<b>28,427</b>	<b>4,345</b>	<b>–</b>	<b>32,773</b>
<b>B/S Liabilities held for sale<sup>1</sup></b>						<b>–5,927</b>	<b>–4,486</b>	<b>–</b>	<b>–10,413</b>

2018	Trucks	Con- struction Equipment	Buses	Volvo Penta	Group func- tions & Other incl. elim.	Industrial Operations	Financial Services	Elimina- tions	Volvo Group
Net sales, external customers	249,815	84,061	24,941	13,267	5,945	378,030	12,804	–	390,834
Net sales, internal	542	176	885	474	–1,788	289	266	–555	–
<b>I/S Net sales</b>	<b>250,358</b>	<b>84,238</b>	<b>25,826</b>	<b>13,741</b>	<b>4,157</b>	<b>378,320</b>	<b>13,070</b>	<b>–555</b>	<b>390,834</b>
Expenses	–231,944	–72,935	–25,250	–11,401	–6,671	–348,201	–10,659	555	–358,305
<b>I/S</b> Income from investments in joint ventures and associated companies	1,128	821	–1	2	–1	1,948	–	–	1,948
<b>I/S Operating income</b>	<b>19,541</b>	<b>12,125</b>	<b>575</b>	<b>2,341</b>	<b>–2,515</b>	<b>32,067</b>	<b>2,411</b>	<b>–</b>	<b>34,478</b>
<b>I/S</b> Interest income and similar credits						199	–	–	199
<b>I/S</b> Interest expense and similar charges						–1,658	0	–	–1,658
<b>I/S</b> Other financial income and expense						–870	–	–	–870
<b>I/S Income after financial items</b>						<b>29,738</b>	<b>2,411</b>	<b>–</b>	<b>32,148</b>
<b>Other segment information</b>									
Depreciation, amortization and impairment	–12,840	–1,858	–505	–250	1,662	–13,792	–4,648	–	–18,440
Restructuring costs	1	10	–	–	–	11	–41	–	–29
Gains/losses from divestments	4	–	–	–	2	6	–	–	6
Investments in in-/tangible assets	8,006	832	347	527	1,021	10,733	10,184	–	20,916
<b>B/S</b> Investments in joint ventures and associated companies	10,966	–	60	32	77	11,135	–	–	11,135
<b>B/S</b> Assets held for sale <sup>1</sup>						203	–	–	203
<b>B/S</b> Liabilities held for sale <sup>1</sup>						–	–	–	–

6:2

<sup>1</sup> Reclassifications of assets and liabilities has been made to assets and liabilities held for sale.

**Read more in Note 3** Acquisitions and divestments of shares in subsidiaries about assets held for sale.

Reporting by market	Net sales		Non-current assets <sup>2</sup>	
	2019	2018	2019	2018
Europe	163,748	160,591	77,047	70,953
of which Sweden	10,208	9,866	25,315	25,665
of which France	33,955	31,195	11,661	12,111
of which the UK	18,729	18,598	9,509	5,441
North America	131,310	106,948	21,151	19,689
of which USA	103,166	84,639	19,231	17,966
South America	31,222	21,138	2,991	2,710
of which Brazil	20,427	12,582	2,460	2,264
Asia	79,951	76,976	5,990	17,215
of which China	29,535	27,214	2,259	1,888
of which Japan	20,905	18,227	174 <sup>1</sup>	10,782
Other markets	25,750	25,182	3,331	2,178
<b>I/S B/S Total</b>	<b>431,980</b>	<b>390,834</b>	<b>110,510</b>	<b>112,745</b>

6:3

<sup>1</sup> Reclassifications of assets and liabilities has been made to assets and liabilities held for sale.

**Read more in Note 3** Acquisitions and divestments of shares in subsidiaries about assets held for sale.

<sup>2</sup> Non-current assets include tangible and intangible assets excluding goodwill.

The reporting of net sales by market is based on where the delivery of the goods or services took place.

# 7

## REVENUE



### ACCOUNTING POLICY

The recognized net sales in Industrial Operations pertain to revenues from sales of vehicles and services. Revenue from vehicles and services are recognized when control has been transferred from Volvo Group to the customer. Control refers to the customers' ability to use vehicles or services in its operations and to obtain the associated cash flow related to the use. Vehicles and services are sold separately or as a combined offer. In combined offers where the vehicle and services are separable from each other and the customer can benefit from the vehicle and the service independently, the transaction price is allocated between vehicles and services based on stand-alone selling price according to price lists.

The recognized net sales in Financial Services pertain to interest income related to finance leases and installment credits as well as income from operating lease contracts. Interest income are recognized during the underlying contract period and income from operating leasing is recognized over the leasing period.

#### Vehicles

Vehicles include sales of new vehicles, machines and engines as well as sales of used vehicles, machines, trailers, superstructures and special vehicles. A standard contractual warranty is included as part of the sales, read more in note 21 Other provisions about product warranty. The customer can pay for the vehicle at the point of sale or defer the payment by entering into agreements such as installment credits and finance lease.

Revenue is recognized when the control of the vehicle has been transferred to the customer, normally at one point in time which is when the vehicle has been delivered to the customer. The value of rebates, returns and variable sales price have been considered as part of the revenue recognition.

If the sale of the vehicle is combined with a residual value commitment (buybacks and tradebacks) the criterion of transferring control is based on if the customer has a significant economic incentive to exercise the option to return the vehicle or not. A significant economic incentive exists if the repurchase price is higher than the assessed fair market value i.e. net realizable value at the end of the residual value commitment period, or if the historical returns indicate that it is probable that the customer will return the vehicle at the end of the commitment period. Thus, the control has not been transferred and the sales transaction is recognized as an operating lease transaction. The revenue and expense are recognized over the residual value commitment period in the income statement. Assets under operating leases, a residual value liability, and a deferred lease income are recognized in the balance sheet. The asset is depreciated over the commitment period and the deferred lease income is recognized as revenue over the same period. The residual value liability amount remains unchanged until the end of the commitment period. If the vehicle is returned at the end of the commitment period, the residual value liability is paid to the customer and the vehicle is reclassified from assets under operating lease to inventory.

» Read more in Note 14 Leasing about lease income on assets under operating lease.

If the customer is not considered to have a significant economic incentive to return the vehicle, the sales transaction is recognized in accordance with the right of return model. Revenue corresponding to the sales amount

less the buyback amount is recognized at the initial sale, as well as a proportionate share of cost of goods sold. The remaining revenue is recognized as a refund liability and the remaining cost of goods sold as a right of return asset during the commitment period. If the vehicle is not returned the refund liability is recognized as revenue and the right of return asset is recognized as cost of goods sold at the end of the commitment period.

#### Services

Services include sale of spare parts, maintenance services, repairs, extended coverage and other aftermarket products. The control of the service has been transferred to the customer when the Volvo Group incurs the associated cost to deliver the service and the customer can benefit from the use of the delivered services. For spare parts, revenue is normally recognized at one point time, which is when it is delivered to the customer. For maintenance services and other aftermarket products, revenue is recognized over time, i.e. normally during the contract period. When payment for maintenance contracts is received in advance, the payment is recognized as a contract liability.

Services also includes sales in Financial Services related to finance lease, installment credits and operating leases. During 2019, revenue from Financial Services operations amounted to SEK 14,870 M (13,070).

» Read more in Note 6 Segment reporting regarding net sales by segment and market.

» Read more in Note 14 Leasing about lease income on assets under operating lease and finance income on customer-financing receivables.



### SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

#### Sales with residual value commitments

When the Volvo Group enters into sales transactions of vehicles with residual value commitments (buybacks and tradebacks) the judgment whether control has been transferred from Volvo Group to the customer and at what point in time revenue shall be recognized is critical. The judgment made is when a significant economic incentive exists or not for the customer to return the vehicle at the end of the commitment period. The assessment of significant economic incentive is performed at the inception of the contract and the outcome at the end of the commitment period can differ from the initial assessment. Factors that are considered and requires judgment is the assessed fair market value i.e. net realizable value at the end of the residual value commitment period and historical returns.

» Read more in Note 13 Tangible assets for a description of residual value risks and the assessment of fair market value.

#### Variable sales price

In some sales transactions, the sales price is variable such as residual value guarantees. In assessing the variable sales price, the expected value method is used and revenue is recognized when it is highly probable that a reversal will not occur. Both the expected value method and the assessment of highly probable requires judgments to be able to make estimates. The estimates are made at the contract start with continuous assessment at each reporting period.



<b>Disaggregation of revenue</b>									
2019	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. elim	Industrial Operations	Financial Services	Eliminations	Volvo Group
<b>Net sales per product group</b>									
Vehicles	213,071	76,506	25,600	9,698	7,682	332,558	–	–1,170	331,388
Services	63,575	12,099	5,419	3,588	1,122	85,804	14,870	–81	100,593
<b>Net sales</b>	<b>276,647</b>	<b>88,606</b>	<b>31,019</b>	<b>13,287</b>	<b>8,803</b>	<b>418,361</b>	<b>14,870</b>	<b>–1,252</b>	<b>431,980</b>
<b>Net sales per geographical region</b>									
Europe	112,125	30,300	7,369	6,671	2,521	158,985	6,279	–1,516	163,748
North America	85,731	17,404	15,543	3,180	3,996	125,855	5,534	–78	131,310
South America	23,753	2,532	3,281	319	–147	29,739	1,555	–72	31,221
Asia	37,610	33,932	2,617	2,439	2,315	78,914	1,010	26	79,951
Africa and Oceania	17,427	4,437	2,209	679	117	24,869	492	389	25,750
<b>Net sales</b>	<b>276,647</b>	<b>88,606</b>	<b>31,019</b>	<b>13,287</b>	<b>8,803</b>	<b>418,361</b>	<b>14,870</b>	<b>–1,252</b>	<b>431,980</b>
<b>Timing of revenue recognition</b>									
Revenue of vehicles and services recognized at the point of delivery	256,923	86,819	30,355	13,287	6,749	394,132	–	95	394,228
Revenue of vehicles and services recognized over contract period	19,725	1,786	664	0	2,054	24,230	14,870	–1,347	37,752
<b>Net sales</b>	<b>276,647</b>	<b>88,606</b>	<b>31,019</b>	<b>13,287</b>	<b>8,803</b>	<b>418,361</b>	<b>14,870</b>	<b>–1,252</b>	<b>431,980</b>

7:1

<b>Disaggregation of revenue</b>									
2018	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. elim	Industrial Operations	Financial Services	Eliminations	Volvo Group
<b>Net sales per product group</b>									
Vehicles	192,157	72,797	20,943	10,410	3,049	299,356	0	–459	298,897
Services	58,201	11,441	4,883	3,330	1,108	78,963	13,070	–96	91,937
<b>Net sales</b>	<b>250,358</b>	<b>84,238</b>	<b>25,826</b>	<b>13,741</b>	<b>4,157</b>	<b>378,320</b>	<b>13,070</b>	<b>–555</b>	<b>390,834</b>
<b>Net sales per geographical region</b>									
Europe	111,237	27,291	7,036	7,487	2,089	155,140	6,063	–613	160,591
North America	70,233	15,575	13,244	2,912	419	102,383	4,600	–35	106,948
South America	16,021	2,304	1,393	299	–102	19,914	1,276	–52	21,138
Asia	36,664	33,781	2,094	2,443	1,195	76,177	800	–1	76,976
Africa and Oceania	16,203	5,287	2,060	599	556	24,705	332	145	25,182
<b>Net sales</b>	<b>250,358</b>	<b>84,238</b>	<b>25,826</b>	<b>13,741</b>	<b>4,157</b>	<b>378,320</b>	<b>13,070</b>	<b>–555</b>	<b>390,834</b>
<b>Timing of revenue recognition</b>									
Revenue of vehicles and services recognized at the point of delivery	232,876	82,716	25,300	13,741	2,366	356,999	0	–389	356,610
Revenue of vehicles and services recognized over contract period	17,481	1,522	526	–	1,791	21,320	13,070	–166	34,224
<b>Net sales</b>	<b>250,358</b>	<b>84,238</b>	<b>25,826</b>	<b>13,741</b>	<b>4,157</b>	<b>378,320</b>	<b>13,070</b>	<b>–555</b>	<b>390,834</b>

7:2





<b>Contract and right of return assets</b>	Dec 31, 2019	Of which due within 12 months	Of which due after 12 months	Dec 31, 2018	Dec 31, 2017
Contract assets	6,423	4,313	2,110	3,748	2,585
Right of return assets	1,280	157	1,123	1,655	1,801
Parts return assets	165	119	46	48	181
<b>Total</b>	<b>7,868</b>	<b>4,589</b>	<b>3,279</b>	<b>5,451</b>	<b>4,567</b>

7:3

Contract assets are recognized within other receivables and include revenue that has been recognized but not yet invoiced for work performed.

Right of return assets and parts return assets represents the product cost for the assets that might be returned to the Volvo Group.

<b>Contract and refund liabilities</b>	Dec 31, 2019	Of which due within 12 months	Of which due after 12 months	Dec 31, 2018	Dec 31, 2017
Contract liabilities					
<i>Deferred service revenue</i>	16,419	3,371	13,049	14,270	12,229
<i>Advances from customers</i>	7,707	5,493	2,215	6,526	4,986
<i>Other deferred income</i>	1,427	1,184	243	1,083	1,457
<i>Accrued expenses for dealer bonuses and rebates</i>	6,659	6,647	12	6,223	5,772
Refund liabilities	1,726	461	1,265	1,912	2,332
<b>Total</b>	<b>33,938</b>	<b>17,155</b>	<b>16,784</b>	<b>30,014</b>	<b>26,775</b>

7:4

Contract liabilities are recognized within other liabilities and include advance payments received from customers, e.g. advance payments for service contracts and extended coverage, for which revenue is recognized when the service is provided. Refund liabilities related to the right to return products and residual value guarantees are included with an amount that is expected to be paid to the customer if the vehicle or spare part is returned. In service contracts, the revenue expected to be recognized over the remaining term of the contract for services not yet delivered

amounted to SEK 14,207M (19,408) as of December 31, 2019. Approximately 31% are expected to be recognized as revenue during 2020 and the remaining 69% as revenue during 2021–2023. The change in contract and refund liabilities are due to increased sales of service contract and extended coverage. During 2019, revenue has been recognized with SEK 9,480 M (13,091) that was included in the contract liabilities at the beginning of the period.

## 8 OTHER OPERATING INCOME AND EXPENSES

<b>Other operating income and expense</b>	2019	2018
Gains/losses on divestment of Group companies <sup>1</sup>	1,634	6
Change in allowances and write-offs for doubtful customer-financing receivables <sup>2</sup>	–729	–538
Change in allowances and write-offs for other doubtful receivables <sup>3</sup>	–204	–179
Damages and litigations <sup>4</sup>	–673	–687
Restructuring costs	–204	–29
Volvo profit sharing program	–728	–846
Other income and expenses <sup>5</sup>	683	0
<b>I/S Total</b>	<b>–221</b>	<b>–2,273</b>

8:1

1 Including capital gain on sale of the majority of Volvo Group's holding of shares in WirelessCar of SEK 1,621 M

» Read more in Note 3 Acquisitions and divestments of shares in subsidiaries, about gains/losses on divestment of Group companies.

2 » Read more in Note 15 Customer-financing receivables.

3 » Read more in Note 16 Receivables.

4 Including costs for legal advisors for claims related to the EU antitrust investigation (2016).

5 Includes mainly capital gains from sale of real estate of SEK 707 M

» Read more in Note 4 Goals and policies in financial risk management regarding the company's management of credit risk and credit reserves.

## 9 OTHER FINANCIAL INCOME AND EXPENSES



### ACCOUNTING POLICY

In Other financial income and expenses unrealized revaluation on derivatives used to hedge interest rate exposure as well as realized result and unrealized revaluation on derivatives used to hedge future cash flow exposure in foreign currency are recognized. The derivatives are recognized at fair value through the income statement and no hedge accounting is applied. The unrealized revaluation on derivatives used to hedge interest rate exposure was mainly related to the debt portfolio within Industrial Operations and customer-financing portfolio within Financial Services.

» **Read more in Note 1** Accounting policies about receivables and liabilities in foreign currency.

» **Read more in Note 30** Financial Instruments regarding the accounting policy for financial assets at fair value through the income statement.

Other financial income and expense	2019	2018
Unrealized revaluation of derivatives used to hedge interest rate exposure	-439	-185
Realized result and unrealized revaluation on derivatives used to hedge future cash flow exposure in foreign currency	-452	-384
<b>Financial instruments at fair value through income statement</b>	<b>-892</b>	<b>-570</b>
Exchange rate gains and losses on financial assets and liabilities	-86	-140
Financial income and expenses related to taxes	-103	64
Costs for Treasury function, credit facilities, etc.	-265	-224
<b>1/5 Total<sup>1</sup></b>	<b>-1,345</b>	<b>-870</b>

9:1

<sup>1</sup> Other financial income and expense attributable to financial instruments amounted to SEK -978 M (-710). The amount is specified in note 30 Financial Instruments in table 30:3.

## 10 INCOME TAXES



### ACCOUNTING POLICY

Income tax for the period includes current and deferred taxes. Current taxes are calculated on the basis of the tax regulations prevailing in the countries where the group companies have operations.

Deferred taxes are recognized on differences that arise between the taxable value and carrying value of assets and liabilities as well as on tax-loss carryforwards. Deferred tax assets are recognized to the extent it is probable that they will be utilized against future taxable profits.

Deferred tax liabilities related to temporary differences on investments in subsidiaries, joint ventures and associated companies are recognized in the balance sheet except when the Volvo Group controls the timing of the reversal of the temporary difference related to accumulated undistributed earnings and it is probable that a reversal will not be done in the foreseeable future.

Tax laws in Sweden and certain other countries allow companies to defer payment of taxes through allocations to untaxed reserves. In the Volvo Group financial statements, untaxed reserves give rise to temporary differences which are recognized as deferred tax liabilities.

Tax liabilities are recognized for income tax charges that are probable as a result of identified risks. Hence, when it is probable that the taxation authority or court will not accept an uncertain income tax treatment under tax law, adjustments of the tax liability are made for the estimated outcome. Tax claims for which no adjustment of the tax liability is considered required are generally reported as contingent liabilities.

» **Read more in Note 24** Contingent Liabilities.



### SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

#### Deferred taxes

The Volvo Group recognizes deferred tax assets related to substantial tax-loss carryforwards that are assessed as being probable to be utilized due to sufficient taxable profits generated in the coming years. The judgment is based on the possibility to offset tax assets and tax liabilities and that a significant part of tax-loss carryforwards are related to countries with long or indefinite periods of utilization. In order to determine the probability of utilization of such tax-loss carryforwards, business plans are used.

Valuation allowances are recognized for deferred tax assets that are not expected to be realized based on current forecast. In the event that actual results differ from the forecast or if the forecast for future periods is adjusted, changes in the valuation allowance may be required. This could have a significant impact on the financial position and the income for the period.

#### Uncertainty over income tax treatments and claims

The Volvo Group regularly evaluates income tax positions to determine if a tax liability or a contingent liability shall be recognized. The judgment is based on several factors, such as changes in facts and circumstances, the progress of the case and experience in similar cases. The actual outcome of income tax positions may deviate from the expected outcome and materially affect future financial statements.



Distribution of Income taxes	2019	2018
Current taxes relating to the period	-9,809	-9,028
Adjustment of current taxes for prior periods	1,016	184
Deferred taxes originated or reversed during the period	-981	1,921
Remeasurements of deferred tax assets	-563	138
<b>I/S Total income taxes</b>	<b>-10,337</b>	<b>-6,785</b>

10:1

The Swedish corporate income tax rate amounted to 21% (22) in 2019. The table below explains the major reasons for the difference between the Swedish corporate income tax rate and the Volvo Group's effective tax rate, based on income after financial items.

Reconciliation of effective tax rate, %	2019	2018
<b>Swedish corporate income tax rate</b>	<b>21</b>	<b>22</b>
Difference between corporate tax rate in Sweden and other countries	2	1
Non-taxable income	-4	-3
Non-deductible expenses	0	1
Current taxes related to prior years	0	-1
Remeasurement of deferred taxes	2	-1
Other differences	0	1
<b>Effective tax rate for the Volvo Group</b>	<b>22</b>	<b>21</b>

10:2

The effective tax rate for the Volvo Group, as of December 31, 2019, was impacted mainly by the non-taxable capital gain related to the divestment of the majority of the Volvo Group's holding shares in WirelessCar as well as tax settlements.

Specification of deferred tax assets and liabilities	Dec 31, 2019	Dec 31, 2018
Deferred tax assets:		
Unused tax-loss carryforwards	2,547	2,560
Other unused tax credits	78	81
Intercompany profit in inventories	1,570	1,686
Allowance for inventory obsolescence	684	663
Valuation allowance for doubtful receivables	1,130	1,118
Provisions for warranties <sup>1</sup>	3,756	4,493
Provisions for residual value risks	312	189
Lease liabilities <sup>2</sup>	1,422	-
Provisions for post-employment benefits	4,511	3,801
Provisions for restructuring measures	39	17
Land	1,290	1,275
Other deductible temporary differences	6,287	5,910
<b>Deferred tax assets before deduction for valuation allowance</b>	<b>23,626</b>	<b>21,793</b>
Valuation allowance	-689	-714
<b>Deferred tax assets after deduction for valuation allowance</b>	<b>22,937</b>	<b>21,080</b>
Netting of deferred tax assets and liabilities	-9,695	-7,574
<b>B/S Deferred tax assets, net</b>	<b>13,242</b>	<b>13,505</b>
Deferred tax liabilities:		
Accelerated depreciation on property, plant and equipment	1,914	1,804
Accelerated depreciation on leasing assets	2,808	2,851
Right-of-use assets, leased <sup>2</sup>	1,376	-
LIFO valuation of inventories	361	343
Capitalized product and software development	2,570	2,363
Adjustment to fair value at corporate acquisitions/divestments	38	41
Untaxed reserves	2,239	1,382
Provisions for post-employment benefits	24	81
Other taxable temporary differences	2,713	2,837
<b>Deferred tax liabilities</b>	<b>14,043</b>	<b>11,702</b>
Netting of deferred tax assets and liabilities	-9,700	-7,574
<b>B/S Deferred tax liabilities, net</b>	<b>4,343</b>	<b>4,128</b>
<b>Deferred tax assets and liabilities, net<sup>3</sup></b>	<b>8,899</b>	<b>9,377</b>

10:3

1 Includes the tax impact of a provision made in 2018 of SEK 7 billion for estimated costs to address the issue of an emission control component. » Read more in Note 21 Other provisions.

2 » Read more in Note 31 Changes in Volvo Group financial reporting 2019. As from January 1, 2019 the Volvo Group applies IFRS 16 Leases.

3 The deferred tax assets and liabilities are recognized in the balance sheet partially on a net basis, after taking into account offsetting possibilities. Deferred tax assets and liabilities have been measured at the tax rates that are expected to be applied during the period when the asset is realized or the liability is settled, according to the tax rates and tax regulations that have been resolved or enacted at the balance sheet date.



# 11 NON-CONTROLLING INTEREST

The total valuation allowance for deferred tax assets amounted to SEK 689 M (714) as of December 31, 2019. Most of the allowance, SEK 530 M (583), consisted of allowance for unused tax-loss carryforwards, mainly related to Japan.

As of December 31, 2019, the Volvo Group's gross unused tax-loss carryforwards amounted to SEK 9,243 M (9,088) pertaining to deferred tax assets of SEK 2,547 M (2,560) recognized in the balance sheet. After deduction for valuation allowance, deferred tax assets attributable to unused tax-loss carryforwards amounted to SEK 2,018 M (1,977) of which SEK 1,173 M (934) pertained to France and SEK 397 M (491) to Japan.

The gross unused tax-loss carryforwards expired according to the following table.

Due date, unused tax-loss carryforwards gross	Dec 31, 2019	Dec 31, 2018
after 1 year	1,490	365
after 2 years	430	1,677
after 3 years	415	394
after 4 years	347	450
after 5 years	415	328
after 6 years or more <sup>1</sup>	6,145	5,874
<b>Total</b>	<b>9,243</b>	<b>9,088</b>

10:4

<sup>1</sup> Tax-loss carryforwards with long or indefinite periods of utilization were mainly related to France. Tax-loss carryforwards with indefinite periods of utilization amounted to SEK 5,790 M (5,368) which corresponded to 63% (59) of the total unused tax-losses carryforward.

Changes in deferred tax assets and liabilities, net	2019	2018
<b>Deferred tax assets and liabilities, net, opening balance</b>	<b>9,377</b>	<b>6,777</b>
Transition effect IFRS 9 <sup>1</sup>	–	129
<b>Opening balance</b>	<b>9,377</b>	<b>6,906</b>
Recognized in Income statement	–1,544	2,059
Recognized in Other comprehensive income, whereof:		
Remeasurements of defined-benefit pension plans	807	–47
Remeasurements of holdings of shares at fair value	–4	6
Translation differences and other changes	263	453
<b>Deferred tax assets and liabilities, net, as of December 31</b>	<b>8,899</b>	<b>9,377</b>

10:5

<sup>1</sup> The opening balance for 2018 is restated due to the implementation of IFRS 9.

The cumulative amount of undistributed earnings in foreign subsidiaries, which the Volvo Group currently intends to indefinitely reinvest outside of Sweden and which no deferred income tax have been accounted for, amounted to SEK 30 billion (29) at year end. Undistributed earnings pertaining to countries where the dividends are not taxable are excluded.

» Read more in Note 4 Goals and policies in financial risk management about how the Volvo Group handles equity currency risk.



## ACCOUNTING POLICY

Non-controlling interest is a limited ownership of shares and voting rights in a subsidiary, thereby also limited rights to the subsidiary's equity. Non-controlling interest equity is presented separately from the Parent Company's equity. In acquisitions, non-controlling interests are valued either at fair value or to a proportionate share of the acquired company's net assets. Ownership changes in non-controlling interests, not resulting in change of control, is recognized within equity.

The Volvo Group has a few non-wholly owned subsidiaries, of which one is considered to be significant. Shandong Lingong Construction Machinery Co. (Lingong), in China, has a non-controlling interest holding of 30% of the shares and voting rights, which is considered significant for the Volvo Group. During 2019, the profit allocated to the non-controlling interest in Lingong amounted to SEK 614 M (464). The accumulated amount allocated to the non-controlling interest within equity of Lingong amounts to SEK 3,043 M (2,400).

The following table presents summarized financial information for Shandong Lingong Construction Machinery Co.

Summarized income statement	2019	2018
Net sales	20,851	17,107
Operating income	2,358	1,738
<b>Income for the period</b>	<b>2,046</b>	<b>1,548</b>
Other comprehensive income <sup>1</sup>	97	196
<b>Total comprehensive income for the period<sup>1</sup></b>	<b>2,143</b>	<b>1,744</b>
Dividends paid to non-controlling interest	–	–

11:1

Summarized balance sheet	Dec 31, 2019	Dec 31, 2018
Non-current assets	3,334	2,978
Marketable securities, cash and cash equivalents	5,239	3,648
Current assets	13,325	11,328
<b>Total assets</b>	<b>21,898</b>	<b>17,953</b>
Non-current liabilities	217	153
Current liabilities	11,536	9,798
<b>Total liabilities</b>	<b>11,753</b>	<b>9,952</b>
Equity attributable to:		
Owners of AB Volvo <sup>1</sup>	7,101	5,601
Non-controlling interest <sup>1</sup>	3,043	2,400

11:2

<sup>1</sup> Includes exchange differences from translating equity in foreign subsidiaries in the Volvo Group.

# 12

## INTANGIBLE ASSETS



### ACCOUNTING POLICY

Volvo Group applies the cost method for recognition of intangible assets, consisting of goodwill, capitalized product and software development and other intangible assets.

#### Goodwill

Goodwill is recognized as an intangible asset with indefinite useful life. For non-depreciable assets such as goodwill, impairment tests are performed annually, as well as if there are indications of impairments during the year. Goodwill is allocated and tested at the level of cash-generating units which are identified as the Volvo Group's operating segments. If the carrying amount of the tested cash-generating unit exceeds the calculated recoverable amount, an impairment loss is recognized for the difference. The recoverable amount for a cash-generating unit is determined on the basis of value in use. The Volvo Group's valuation model is based on a discounted cash flow model, with a forecast period of four years. The valuation is based on a business plan which is an integral part of the Volvo Group's financial planning process and represents management's best estimate of the development of the Group's operations. Assumption of 2% (2) long-term market growth beyond the forecast period and the Group's expected performance in relation to this environment is a basis for the valuation. In the model, the Volvo Group is expected to maintain stable capital efficiency over time. Other parameters considered in the calculation are operating income, mix of products and services, expenses and level of capital expenditures. The Volvo Group uses a discount rate at 10% (12) before tax for 2019.

In 2019, the calculated value of Volvo Group's operations exceeded the carrying amount for all operating segments, thus no impairment was recognized. The Volvo Group has also analyzed whether a negative adjustment of 1% on the used assumptions would result in impairment for goodwill, however none of the operating segments would be impaired as a result of this analysis. The operating parameters applied in the valuation are based on management's strategy and could indicate higher value than historical performance for each operating segment. Furthermore, the Volvo Group is operating in a cyclical industry why performance could vary over time.

The surplus values differ between the operating segments why they are sensitive to changes in the assumptions described above to a varying degree. Therefore, the Volvo Group continuously follows the performance of the operating segments whose surplus value is dependent on the fulfillment of the Volvo Group's assessments. Instability in the recovery of the market and volatility in interest and currency rates may lead to indications of a need for impairment. The most important factors for the future operations of the Volvo Group are described in the Volvo Group operating segment section, as well as in the Risk management section.

#### Research and development

Expenditures for the development of new products and software are recognized as intangible assets if such expenditures, with a high degree of certainty, will result in future financial benefits for the company. Intangible assets is amortized over the estimated useful life of the assets.

The rules require stringent criteria to be met for these development expenditures to be recognized as assets. For example, it must be possible to prove the technical functionality of a new product or software prior to its development expenditure being recognized as an asset. In normal cases, this means that expenditures are capitalized only during the industrialization phase of a product development project. Other research and development costs are recognized in the income statement as incurred.

The Volvo Group has developed a process for conducting product development projects, which has six phases focused on separate parts of the project. Every phase starts and ends with a reconciliation point, known as a gate, for which the criteria must be met for the project's decision making committee to allow the project to progress to the next phase. During the industrialization phase, the industrial system is prepared for serial production and the product is launched. A corresponding process is developed for software development.

#### Other intangible assets

Other intangible assets include trademarks, distribution networks, licenses and other rights. When participating in industrial projects in partnership with other companies the Volvo Group in certain cases pays an entrance fee to participate. These entrance fees are capitalized as intangible assets.

#### Amortization and impairment with finite useful life

Intangible assets other than goodwill are amortized on a straight line basis over their estimated useful life. Amortization is based on the cost of the assets, adjusted by impairments when applicable and estimated useful lives. Amortization is recognized in the respective function to which it belongs, meaning that amortization of product development is part of the research and development expenses in the income statement. Impairment tests for amortizable assets are performed if there are indications of impairment. In addition, for capitalized development cost for products and software not yet in use, impairment tests are performed annually. If the recoverable amount of the asset is less than the carrying amount, an impairment is recognized and the carrying amount of the asset is reduced to the recoverable amount. The recoverable amount is the higher of the fair value less costs of disposal and the value in use. The value in use is measured as the discounted future cash flows, which the asset is expected to generate either by itself or from the lowest cash-generating unit to which the asset belongs.

#### Amortization periods

Trademarks	Max 5 years
Distribution networks	10 years
Product and software development	3 to 8 years



### SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

#### Impairment of goodwill and other intangible assets

Impairment testing of goodwill and capitalized development cost not yet in use are performed annually and in case of indication of impairment. Other intangible assets, with finite useful lives, are tested in case of indication of impairment. When conducting impairment tests, estimates have to be made to determine the recoverable amounts of cash-generating units. The recoverable amount is based upon management's projections of future cash flows, which are generally based on internal business plans and forecasts. While management believes that estimates of future cash flows and other assumptions made are reasonable, there are uncertainties which could materially affect the valuations. As described in the accounting policy for goodwill, surplus values differ between the operating segments and they are, to a varying degree, sensitive to changes in assumptions and the business environment.

Intangible assets, acquisition costs	Goodwill	Capitalized product and software development	Other intangible assets	Total intangible assets
<b>Opening balance 2018</b>	<b>22,853</b>	<b>45,266</b>	<b>8,109</b>	<b>76,228</b>
Investments <sup>1</sup>	0	3,732	13	3,745
Sales/scraping	0	-327	-43	-370
Acquired and divested operations <sup>2</sup>	114	0	0	114
Translation differences	1,240	475	424	2,139
Reclassification at divestment <sup>2</sup>	-	-	-	-
Reclassifications and other	-72	-24	8	-88
<b>Acquisition cost as of Dec 31, 2018</b>	<b>24,135</b>	<b>49,122</b>	<b>8,511</b>	<b>81,768</b>
Investments <sup>1</sup>	-	3,772	174	3,946
Sales/scraping	-	-28	-17	-45
Acquired and divested operations <sup>2</sup>	-38	-	0	-38
Translation differences	628	314	212	1,153
Reclassification at divestment <sup>2</sup>	-1,720	-4,754	-2,876	-9,349
Reclassifications and other	-24	5	-48	-67
<b>Acquisition cost as of Dec 31, 2019</b>	<b>22,981</b>	<b>48,431</b>	<b>5,956</b>	<b>77,369</b>

12:1

Intangible assets, accumulated amortization and impairment	Goodwill	Capitalized product and software development	Other intangible assets	Total intangible assets
<b>Opening balance 2018</b>	<b>71</b>	<b>34,150</b>	<b>6,113</b>	<b>40,334</b>
Amortization	-	2,739	285	3,024
Impairment	-	0	0	0
Sales/scraping	-	-323	-43	-366
Acquired and divested operations <sup>2</sup>	-	-	-	-
Translation differences	-	475	264	739
Reclassification at divestment <sup>2</sup>	-	-	-	-
Reclassifications and other	-71	-2	6	-67
<b>Accumulated amortization and impairment as of Dec 31, 2018</b>	<b>-</b>	<b>37,039</b>	<b>6,625</b>	<b>43,664</b>
Amortization	-	2,680	283	2,963
Impairment	-	0	0	0
Sales/scraping	-	-31	-17	-47
Acquired and divested operations <sup>2</sup>	-	-	0	0
Translation differences	-	293	133	425
Reclassification at divestment <sup>2</sup>	-	-4,447	-1,806	-6,254
Reclassifications and other	-	0	-50	-50
<b>Accumulated amortization and impairment as of Dec 31, 2019</b>	<b>-</b>	<b>35,533</b>	<b>5,168</b>	<b>40,700</b>
<b>B/S Net value in balance sheet as of December 31, 2018<sup>3</sup></b>	<b>24,135</b>	<b>12,083</b>	<b>1,886</b>	<b>38,104</b>
<b>B/S Net value in balance sheet as of December 31, 2019<sup>3</sup></b>	<b>22,981</b>	<b>12,899</b>	<b>788</b>	<b>36,668</b>

12:2

1 Including capitalized borrowing costs of SEK 0 M (0).

2 >> Read more in Note 3 Acquisitions and divestments of shares in subsidiaries, for a description of acquired and divested operations as well as assets and liabilities held for sale.

3 Acquisition costs less accumulated amortization and impairments.

Goodwill per operating segment	Dec 31, 2019	Dec 31, 2018
Trucks	11,983	13,301
Construction Equipment	9,198	8,988
Buses	1,083	1,044
Other operating segments	717	802
<b>Total goodwill value</b>	<b>22,981</b>	<b>24,135</b>

12:3

# 13

## TANGIBLE ASSETS



### ACCOUNTING POLICY

The Volvo Group applies the cost method for measurement of tangible assets, consisting of property, plant, equipment and investment property as well as assets under operating leases.

Buildings includes owner-occupied properties and investment properties. Investment properties are properties owned for the purpose of obtaining rental income and appreciation in value. Investment properties are recognized at cost. For disclosure purposes, information regarding the estimated fair value of investment properties is based on an internal discounted cash flow projection as relevant observable market inputs for the assets are not available. The required return is based on current property market conditions for comparable properties in comparable locations. Hence, the applied valuation method to measure fair value is classified as level 3 of the fair value hierarchy and there have not been any changes in valuation method during the year. Land contains land and land improvements. Machinery and equipment consists of production related assets such as machinery, type-bound tools and other equipment. Construction in progress are assets under construction and advanced payments. Right-of-use assets relates to lease contracts with the Volvo Group as a lessee.

Assets under operating leases are mainly owned by the Volvo Group. These transactions are accounted for as operating lease transactions and consists of contractual operating lease agreements with customers within Financial Services and rental fleet which are assets used in a fleet for rental business within Industrial Operations. Some rental fleet assets are leased by the Volvo Group and later sub-leased to customers as operating leases. Sales with residual value commitments within Industrial Operations are also recognized within assets under operating leases.

» **Read more in Note 7** Revenue about sales with residual value commitments.

» **Read more in Note 14** Leasing about right-of-use assets and assets under operating leases.

#### Depreciation and impairment

Property, plant, equipment and investment property are depreciated over their estimated useful lives. Land is not depreciated. Depreciation is recognized on a straight-line basis based on the cost of the assets, adjusted by residual value when applicable, and estimated useful lives. Right-of-use assets are generally depreciated over the lease term on a straight-line basis. Assets under operating leases are depreciated on a straight-line basis over the contract period. During the contract period, the depreciable amount is adjusted through the income statement to correspond to estimated future net realizable value to continuously reflect potential residual value risks at the end of the contract period. Depreciation is recognized in the respective function to which it belongs. Impairment tests are performed if there are indications of impairment by calculating a recoverable amount which is the higher of the asset's fair value less cost of disposal and its value in use.

#### Depreciation periods

Type-bound tools	3 to 8 years
Operating leases, rental fleet	3 to 5 years
Sales with residual value commitments	3 to 5 years
Machinery and equipment	5 to 20 years
Buildings and investment properties	20 to 50 years
Land improvements	20 years

13:1



### SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

#### Impairment of tangible assets

Impairment tests are performed if there is any indication that a tangible asset has been impaired. The impairment tests are based on estimation of the recoverable amount of the asset, or the cash-generating unit to which the asset belongs. To determine the recoverable amount, projections of future cash flows are used, which are based upon internal business plans and forecasts. While management believes that estimates of future cash flows and other assumptions made are reasonable, there are uncertainties which could materially affect the valuations.

#### Residual value risks

Volvo Group is exposed to residual value risks related to assets under operating leases which is the risks that the Volvo Group in the future would have to dispose used vehicles at a loss if the price development of these products is worse than what was expected when the contracts were entered. The assessment of residual value risks is based upon an estimation of the used vehicle's future net realizable value (fair market value). The estimated future net realizable value of the vehicles at the end of the contract period is monitored individually on a continuing basis. Thus, a decline in prices for used vehicles may negatively affect the Volvo Group's operating income. High inventories in the truck industry and the construction equipment industry and low demand may have a negative impact on the prices of new and used vehicles. In monitoring estimated net realizable value of each vehicle included as assets under operating leases, management considers current price-level of the used product model. The price level are impacted by value of optional equipment, mileage, current condition, future price deterioration due to expected change of market conditions, alternative distribution channels, inventory lead-time, repair and reconditioning costs, handling costs, indirect costs associated with the sale of used vehicles and legislative demands.



### Reclassifications

Reclassifications and other presented in the tables 13:2 and 13:3 mainly consist of construction in progress, rental fleet and assets related to sales with residual value commitments (buyback or tradebacks).

For construction in progress, reclassification occurs when the asset is available for use by transferring the assets to the respective category within property, plant and equipment.

For rental fleet and sales with residual value commitments, reclassification occurs when the vehicle is sold or rented out to customers by transferring the vehicle from inventory to assets under operating leases. If the vehicle is returned by the end of the residual value commitment period or the leasing period, the vehicle is reclassified back to inventory.

### Investment properties

The acquisition value of investment properties at year-end amounted to SEK 91 M (70). Reclassifications amounted to SEK 0 M (0). Accumulated depreciation amounted to SEK 28 M (43) at year-end, of which SEK 4 M (2) refers to 2019. The net carrying value amounted to SEK 63 M (27). The estimated fair value of investment properties amounted to SEK 94 M (63) at year-end and 98% (98) of the area available for lease was leased out during the year. Operating income was affected by rental income from investment properties that amounted to SEK 11 M (7) and direct costs that amounted to SEK 7 M (1).

Tangible assets, Acquisition cost	Property, plant, equipment and investment property					Assets under operating leases <sup>1</sup>			Total tangible assets
	Buildings	Land	Machinery and equip- ment	Construc- tion in progress	Right- of-use assets <sup>1</sup>	Operating leases	Rental fleet	Sales w. residual value commit- ments <sup>2</sup>	
<b>Opening balance 2018</b>	<b>36,957</b>	<b>11,772</b>	<b>80,672</b>	<b>4,081</b>	<b>–</b>	<b>30,087</b>	<b>5,271</b>	<b>24,850</b>	<b>193,690</b>
Investments	434	239	1,927	4,443	–	10,133	–	1	17,177
Sales/scraping	–282	–246	–1,507	–7	–	–9,545	0	0	–11,587
Acquired and divested operations <sup>3</sup>	–26	–10	4	–	–	–	–	–	–32
Translation differences	1,653	807	2,575	76	–	1,406	165	1,076	7,758
Reclassified at divestment <sup>3</sup>	–58	–120	0	–	–	–	–	–	–178
Reclassifications and other	745	72	1,920	–2,792	–	–249	660	–694	–338
<b>Acquisition costs as of Dec 31, 2018</b>	<b>39,423</b>	<b>12,514</b>	<b>85,591</b>	<b>5,801</b>	<b>–</b>	<b>31,832</b>	<b>6,096</b>	<b>25,233</b>	<b>206,490</b>
Transition effect IFRS 16 <sup>4</sup>	–715	–78	–501	–	7,503	–	–	–	6,209
Investments	502	335	2,198	5,094	1,914	9,944	0	0	19,987
Sales/scraping	–284	–284	–3,474	–5	–200	–11,268	0	0	–15,514
Acquired and divested operations <sup>3</sup>	–	–	–8	–	–34	–	–	–	–43
Translation differences	1,264	643	1,644	29	189	1,069	210	304	5,352
Reclassified at divestment <sup>3</sup>	–9,074	–6,297	–9,073	–79	–830	–	–	–188	–25,540
Reclassifications and other	1,729	128	2,084	–3,954	164	826	–963	–49	–34
<b>Acquisition costs as of Dec 31, 2019</b>	<b>32,847</b>	<b>6,962</b>	<b>78,460</b>	<b>6,887</b>	<b>8,706</b>	<b>32,402</b>	<b>5,343</b>	<b>25,301</b>	<b>196,908</b>

13:2

1 » Read more in Note 14 Leasing about right-of-use assets and assets under operating leases.

2 » Read more in Note 7 Revenue about sales with residual value commitments.

3 » Read more in Note 3 Acquisitions and divestments of shares in subsidiaries, for a description of acquired and divested operations as well as assets and liabilities held for sale.

4 » Read more in Note 31 Changes in Volvo Group Financial Reporting 2019. The opening balance for 2019 is restated due to the implementation of IFRS 16.

Tangible assets, Accumulated depreciation and impairments	Property, plant, equipment and investment property					Assets under operating leases <sup>1</sup>			Total tangible assets
	Buildings	Land	Machinery and equip- ment	Construc- tion in progress	Right- of-use assets <sup>1</sup>	Operat- ing leases	Rental fleet	Sales w. residual value commit- ments <sup>2</sup>	
<b>Opening balance 2018</b>	<b>18,759</b>	<b>1,265</b>	<b>60,097</b>	<b>15</b>	<b>–</b>	<b>8,765</b>	<b>1,471</b>	<b>8,381</b>	<b>98,753</b>
Transition effect IFRS 9 <sup>5</sup>	–	–	–	–	–	–77	–	–	–77
Depreciation	1,378	98	4,865	–	–	4,704	839	2,977	14,861
Impairment	–	24	–4	–	–	–	0	535	555
Sales/scraping	–212	–52	–1,392	–	–	–4,158	0	–	–5,814
Acquired and divested operations <sup>3</sup>	–12	0	–7	–	–	0	–	–	–19
Translation differences	941	57	1,997	–	–	444	44	401	3,884
Reclassified at divestment <sup>3</sup>	–36	0	0	–	–	–	–	–	–36
Reclassifications and other	–13	–2	–110	–	–	–35	–624	–3,610	–4,394
<b>Accumulated depreciation and impairments as of Dec 31, 2018</b>	<b>20,805</b>	<b>1,390</b>	<b>65,446</b>	<b>15</b>	<b>–</b>	<b>9,643</b>	<b>1,730</b>	<b>8,685</b>	<b>107,714</b>
Transition effect IFRS 16 <sup>4</sup>	–219	–10	–279	–	508	–	–	–	0
Depreciation	1,436	101	4,736	–	2,125	4,708	1,016	2,554	16,676
Impairment	5	–2	0	–	0	0	27	916	946
Sales/scraping	–201	–23	–3,299	–	–92	–5,105	–	–	–8,720
Acquired and divested operations <sup>3</sup>	0	–	–8	–	–3	0	–	–	–11
Translation differences	663	32	1,225	–	–3	323	64	111	2,415
Reclassified at divestment <sup>3</sup>	–5,443	–199	–7,641	–	–379	–	–	–47	–13,710
Reclassifications and other	21	10	–164	–	–188	231	–1,308	–3,829	–5,226
<b>Accumulated depreciation and impairments as of Dec 31, 2019</b>	<b>17,068</b>	<b>1,299</b>	<b>60,016</b>	<b>15</b>	<b>1,968</b>	<b>9,800</b>	<b>1,529</b>	<b>8,391</b>	<b>100,084</b>
<b>B/S Net value in balance sheet as of Dec 31, 2018<sup>6</sup></b>	<b>18,618</b>	<b>11,124</b>	<b>20,145</b>	<b>5,786</b>	<b>–</b>	<b>22,189</b>	<b>4,366</b>	<b>16,548</b>	<b>98,776</b>
<b>B/S Net value in balance sheet as of Dec 31, 2019<sup>6</sup></b>	<b>15,779</b>	<b>5,663</b>	<b>18,444</b>	<b>6,872</b>	<b>6,738</b>	<b>22,602</b>	<b>3,814</b>	<b>16,910</b>	<b>96,822</b>

13:3

1 >> Read more in Note 14 Leasing about right-of-use assets and assets under operating leases.

2 >> Read more in Note 7 Revenue about sales with residual value commitments.

3 >> Read more in Note 3 Acquisitions and divestments of shares in subsidiaries, for a description of acquired and divested operations as well as assets and liabilities held for sale.

4 >> Read more in Note 31 Changes in Volvo Group Financial Reporting 2019. The opening balance for 2019 is restated due to the implementation of IFRS 16.

5 The opening balance for 2018 is restated due to the implementation of IFRS 9.

6 Acquisition costs less accumulated depreciation and impairments.

# 14 LEASING



## ACCOUNTING POLICY

### *Volvo Group as the lessor*

Leasing contracts are defined in two categories, operating and finance leases, depending on the contracts' financial implications.

Operating leases are offered from Financial Services (contractual operating leases) and from Industrial Operations (rental fleet agreements). Sales with residual value commitments (buybacks and tradebacks) are also accounted for as operating lease transactions when the customer has a significant economic incentive to exercise the option to return the vehicle and the control has therefore not been transferred to the customer. Operating lease agreements are recognized as tangible assets in assets under operating leases and are valued at cost less accumulated depreciation and impairment, if needed. The cost of an asset comprises the acquisition value and any initial direct costs related to the contract. Depreciation of the asset is recognized on a straight-line basis over the contract period. During the period the depreciable amount is adjusted through the income statement by depreciations or write-downs to correspond to the estimated realizable value at the end of the contract period. Lease income is equally distributed over the contract period and recognized within net sales.

» Read more in Note 7 Revenue, about sales with residual value commitments.

» Read more in Note 13 Tangible assets, about residual value risks related to assets under operating lease.

Finance lease contracts are offered from Financial Services. As Industrial Operations manufacture the vehicles which are leased from Financial Services to the customers, the Volvo Group is acting as a manufacturer lessor. Hence, a finance lease asset gives rise to a selling profit which is recognized within Industrial Operations. Finance lease contracts are recognized as non-current and current customer-financing receivables within Financial Services. The asset is measured at an amount equal to the net investment in the finance lease contract corresponding to the gross investment (future minimum lease payments and unguaranteed residual value) discounted with the rate in the finance lease contract and reduced by unearned finance income and allowance for expected credit losses. Assessment of allowance for expected credit losses is reflected in the valuation of customer-financing receivables and recognized at initial recognition and reassessed during the contract period. Lease income is recognized as interest income within net sales in Financial Services. Variable lease payments not dependent on an index or rate are recognized as income as they occur. Payments received from finance lease contracts are distributed between interest income and amortization of the receivable.

» Read more in Note 15 Customer-financing receivables, about finance lease contracts.

### *Volvo Group as the lessee*

Lease contracts are recognized as right-of-use (RoU) assets as well as interest-bearing lease liabilities in the balance sheet. Lease liabilities are recognized within other loans and are measured by the present value of future lease payments. The lease payments are discounted by using a rate reflecting what the Volvo Group would have to pay to borrow funds to acquire a similar asset, with similar collateral and similar term. RoU assets are presented as tangible assets and are valued at cost less accumulated

depreciation and impairment, if needed. The cost of a RoU asset contains the initial amount of the lease liability adjusted for any lease payments made before the commencement date, less any lease incentives received. Moreover, any initial direct costs are included as well as an estimate of costs to be incurred in dismantling, removing or restoring the underlying asset. The leased asset is depreciated on a straight-line basis over the lease term, or over the useful life of the underlying asset if the ownership is transferred to the Volvo Group at the end of the lease term. The lease expense is recognized as depreciation of the asset within operating income and interest expense within the finance net. Payments made are distributed between interest paid and amortization of the lease liability.

Lease contracts with the Volvo Group as the lessee are primarily contracts of real estate (such as office buildings, warehouses and dealer premises), company cars and production related assets. For real estate and company car leases, service components are normally a considerable portion of the contracts and are therefore separated. Thus, the service components are recognized as operating expenses and not included in the RoU asset and the lease liability. For other lease contracts, both the leased asset and services are included in the RoU asset and the lease liability.

If a lease contract includes variable lease payments not dependent on an index or rate, or include a low value asset or has a lease term that is twelve months or less, the lease payments are recognized as operating expenses as they occur.



## SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

### *Measurement of lease liabilities and right-of-use assets*

When entering a lease contract, judgments related to contract scope, lease term and interest rate used when discounting future lease payments are made which affects the measurement of the lease liability and RoU asset.

Assessment of contract scope includes judgments whether a leased asset and/or a service component is identified in the contract. In combined contracts, the total contract amount is allocated between the leased asset and the service by using a market stand-alone price.

When determining the lease term of a contract, judgments are also required. The lease term includes the non-cancellable period. If the Volvo Group is reasonably certain to use an option to extend the lease, or not to use an option to terminate the lease in advance, this is also considered. The contracts contain a range of different conditions. Extension and termination options are mainly related to real estate leases. Thus, all relevant facts and circumstances that create an economic incentive to include optional periods are evaluated. The importance of the underlying asset in the operations and its location, availability of suitable alternatives, significant leasehold improvements, level of rentals in optional periods compared to market rates as well as past practice are examples of factors included in the assessment. Lease terms are negotiated on an individual basis and are reassessed if an option is exercised.

Judgments are also required to determine the interest rate when discounting future lease payments and whether the interest rate implicit in the lease can be readily determined and thereby used, or if the Volvo Group's incremental borrowing rate should be used.



### Volvo Group as the lessor

Lease income	Dec 31, 2019
<b>Finance leases</b>	
Finance income on customer-financing receivables	2,738
<b>Total</b>	<b>2,738</b>
<b>Operating leases</b>	
Lease income on assets under operating lease	12,305
<b>Total</b>	<b>12,305</b>

14:1

During 2019, the selling profit for vehicles subject to finance lease contracts amounted to SEK 3,959 M and was recognized within Industrial Operations.

As of December 31, 2019, future lease income from non-cancellable finance and operating leases (minimum lease fees excluding sales with residual value commitments) amounted to SEK 75,198 M (75,833).

>> Read more in Note 15 Customer-financing receivables about finance leases.

Maturity analysis of lease payments receivable	Finance leases	Operating leases
2020	21,310	9,041
2021	14,394	6,685
2022	9,361	4,121
2023	4,773	1,815
2024	1,995	774
2025 or later	627	303
<b>Total undiscounted lease payments</b>	<b>52,459</b>	<b>22,739</b>
Unguaranteed residual value	473	
Unearned finance income	-3,230	
Allowance for expected credit losses	-1,027	
<b>Customer-financing receivables (current and non-current)</b>	<b>48,675</b>	

14:2

### Volvo Group as the lessee

As from January 1, 2019, IFRS 16 Leases was applied retrospectively but prior period reported financial information was not restated. Hence, the opening balance for 2019 was adjusted in accordance with the new standard. Thus, the part of the tables attributable to 2018 is in accordance with the former lease accounting standard IAS 17, valid until December 31, 2018, and the part of the tables attributable to 2019 is in accordance with IFRS 16, valid as from January 1, 2019. As an effect of the implementation of the new accounting standard for leases, RoU assets and interest-bearing lease liabilities increased as lease contracts are recognized in the balance sheet.

>> Read more in Note 31 Changes in Volvo Group Financial Reporting 2019. The opening balance for 2019 is restated due to the implementation of IFRS 16.

A reconciliation of the future rental payments for operating leases as of December 31, 2018 and interest-bearing lease liabilities as of January 1, 2019 is presented in table 14:3. The Volvo Group used a weighted average incremental borrowing rate of 4.21% when calculating the lease liabilities recognized in the balance sheet at the date of transition.

### Reconciliation of lease liabilities at transition to IFRS 16

<b>Future rental payments for operating leases as of December 31, 2018</b>	<b>7,993</b>
Contracts not included in lease liabilities, such as short-term leases, leases of low value assets and service contracts	-977
<b>Operating lease obligations as of December 31, 2018 (gross)</b>	<b>7,016</b>
Discounting effects	-807
<b>Operating lease obligations as of December 31, 2018 (net, discounted)</b>	<b>6,209</b>
Finance lease liabilities as of December 31, 2018	960
<b>Lease liabilities as of January 1, 2019</b>	<b>7,169</b>

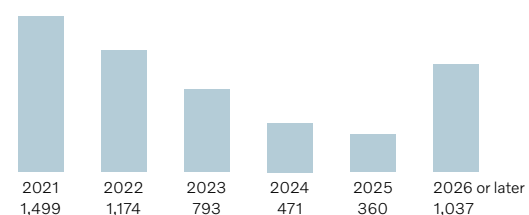
14:3

Finance lease liabilities	Dec 31, 2018
Non-current finance lease liabilities	761
Current finance lease liabilities	199
<b>Total finance lease liabilities</b>	<b>960</b>

Lease liabilities	Dec 31, 2019
Non-current lease liabilities	5,334
Current lease liabilities	1,755
<b>Total lease liabilities</b>	<b>7,089</b>

14:4

### Non-current lease liabilities maturities, SEK M



14:5

During 2019, total cash outflows related to leases amounted to SEK 3,283 M, with a distribution of SEK 1,249 M within operating cash flow and SEK 2,034 M within financing activities.



**Carrying amount of assets subject to finance leases  
as of Dec 31, 2018**

	Buildings	Land	Machinery and equipment	Asset under operating lease and rental fleet <sup>1</sup>	Total
Acquisition cost	715	78	501	397	<b>1,691</b>
Accumulated depreciation	-219	-10	-279	-136	<b>-644</b>
<b>Carrying amount in balance sheet as of Dec 31, 2018</b>	<b>495</b>	<b>68</b>	<b>222</b>	<b>261</b>	<b>1,047</b>

**Carrying amount of right-of-use assets  
as of Dec 31, 2019**

	Buildings	Land	Machinery and equipment	Company cars	Asset under operating lease and rental fleet <sup>1</sup>	Total
<b>Acquisition cost</b>						
Opening balance 2019	5,535	419	920	629	397	<b>7,900</b>
Additions to right-of-use assets <sup>2</sup>	1,013	93	-281	378	21	<b>1,224</b>
<b>Acquisition cost as of Dec 31, 2019</b>	<b>6,548</b>	<b>512</b>	<b>639</b>	<b>1,007</b>	<b>418</b>	<b>9,124</b>
<b>Accumulated depreciation</b>						
Opening balance 2019	-219	-10	-271	-8	-136	<b>-644</b>
Depreciation	-1,112	-58	64	-354	5	<b>-1,455</b>
<b>Accumulated depreciation as of Dec 31, 2019</b>	<b>-1,331</b>	<b>-68</b>	<b>-207</b>	<b>-362</b>	<b>-131</b>	<b>-2,099</b>
<b>Carrying amount in balance sheet as of Dec 31, 2019</b>	<b>5,217</b>	<b>444</b>	<b>432</b>	<b>645</b>	<b>287</b>	<b>7,025</b>

14:6

1 Refer to the assets leased by the Volvo Group which are later sub-leased to customers as operating lease.

2 Additions to RoU assets for the year ended December 31, 2019 mainly relate to new lease contracts signed.

**Recognized in the income statement**

2019

Interest expense on lease liabilities within Financial Services	-1
Depreciation of right-of-use assets	-2,187
Short term lease expense	-785
Low value asset expense	-116
Variable lease expense	-33
Income from sub-leasing right-of-use assets	145
Gain or losses on right-of-use assets	24
<b>Recognized in operating income</b>	<b>-2,952</b>
Interest expense on lease liabilities within Industrial Operations	-338
<b>Recognized in net financial items</b>	<b>-338</b>

**Rental expenses**

2018

Finance leases:	
Contingent rents	-8
Operating leases:	
Contingent rents	-32
Rental payments	-2,102
Sub-lease payments	42
<b>Total</b>	<b>-2,100</b>

14:7

# 15 CUSTOMER-FINANCING RECEIVABLES



## ACCOUNTING POLICY

Installment credits, dealer financing and other receivables within customer-financing receivables are held as part of a business model whose objective is of collecting contractual cash flows. The contractual cash flows are solely payments of principal and interest and are valued at amortized cost in accordance with the effective interest method. Finance lease contracts are valued at amortized cost, for further information on recognition and classification see note 14 Leasing.

The Volvo Group is applying the simplified expected credit loss model for customer-financing receivables, under which the loss allowance is measured at an amount equal to lifetime expected credit losses. The allowance is recorded at initial recognition and is reassessed during the contract period.

Interest income on customer-financing receivables is recognized within net sales, mainly within Financial Services. Changes to the allowance for expected credit losses are recognized in other operating income and expense.



## SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

### Allowance for expected credit losses

The assessment of allowances for expected credit losses on customer-financing receivables is dependent on estimates including assumptions regarding past dues, repossession rates and the recovery rate on the underlying collateral. No significant changes in estimation techniques or important assumptions have been made during the year.

A collective assessment is made for customer-financing receivables that are not credit impaired. The assets are grouped based on shared risk characteristics such as type of customer, geographical area, initial credit risk rating, collateral type and date of initial recognition to evaluate the credit losses collectively. Historical information regarding credit loss experience is used to forecast future losses, adjusted for current and forecasted conditions in the different regions based on management's evaluation of macro-level and portfolio-level factors, such as GDP, oil prices, unemployment rates etc.

An individual assessment is made for credit impaired customer-financing receivables based on the financial condition of the customers and the value of the underlying collateral and guarantees. The Volvo Group considers a financial asset credit impaired if it meets one or more of the following criteria; when there are indications that the customer is unlikely to pay, such as bankruptcy filing, unauthorized transfer of collateral, at surrender of collateral etc. or, at the latest, when the customer fails to make contractual payment within 90 days of when the receivable falls due.

### Risk management practices

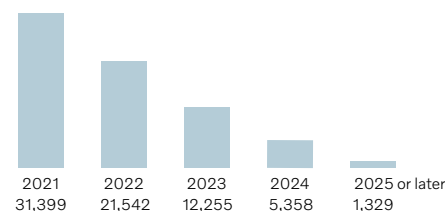
Other than the dealer financing, customer-financing receivables extend over several years, but normally require the customers to make monthly payments throughout the term to reduce the outstanding exposure. The customer-financing receivables are secured by the financed commercial vehicles and equipment. However, in the case of customer default, the value of the repossessed commercial vehicles and equipment may not necessarily cover the outstanding financed amount. In order to mitigate this risk, Financial Services has strong portfolio management processes based on prudent credit approval, active monitoring of individual loan performance, utilization of in-house and external collections, portfolio segmentation analysis, and on-going monitoring of the economic, political

Non-current customer-financing receivables	Dec 31, 2019	Dec 31, 2018
Installment credits	41,212	34,763
Finance leases	29,682	30,167
Other receivables	989	1,218
<b>B/S Non-current customer-financing receivables<sup>1</sup></b>	<b>71,883</b>	<b>66,148</b>

1 A reclassification has been made during 2019 to assets held for sale of SEK 2,740 M, » **Read more in Note 3** Acquisitions and divestments of shares in subsidiaries.

The effective interest rate for non-current customer-financing receivables amounted to 4.98% (4.81) as of December 31, 2019.

### Non-current customer-financing receivables maturities, SEK M



Current customer-financing receivables	Dec 31, 2019	Dec 31, 2018
Installment credits	21,732	19,703
Finance leases	18,993	17,630
Dealer financing	28,654	21,721
Other receivables	1,719	1,725
<b>B/S Current customer-financing receivables<sup>1</sup></b>	<b>71,099</b>	<b>60,779</b>

1 A reclassification has been made during 2019 to Assets held for sale of SEK 1,405 M, » **Read more in Note 3** Acquisitions and divestments of shares in subsidiaries.

The effective interest rate for current customer-financing receivables amounted to 4.85% (4.82) as of December 31, 2019.

Credit risk in customer-financing receivables	Dec 31, 2019	Dec 31, 2018
Customer-financing receivables gross	145,326	129,115
Allowance for expected credit losses for customer-financing receivables	-2,343	-2,187
Whereof allowance for credit impaired	-361	-329
Whereof allowance for not credit impaired	-1,982	-1,859
<b>Customer-financing receivables, net of allowance</b>	<b>142,982</b>	<b>126,927</b>

and industry conditions in each market. In addition, other credit enhancements such as down payments, personal guarantees, credit insurance, liens on other property owned by the borrower etc. may be required at the time of origination or when there are signs of impairment. When customer-financing receivables exceed 90 days of overdue collateral repossession is initiated, although there may be circumstances where repossession is initiated earlier. When the collateral is repossessed, the net realizable value is established and transferred to inventory and becomes part of the Volvo Group's normal business activity of selling used vehicles and equipment and the expected loss on the customer-financing receivable is written off. If repossession has not occurred on customer-financing receivables exceeding 180 days of overdue the expected loss on the receivable is written off. Financial Services continues to engage in enforcement activity on all customer financing-receivables written off during the year to attempt to recover the contractual amount not previously received from the customer.

During 2019 certain financial assets have been renegotiated in situations where the customer's default was due to a temporary or correctable situation but this has not had any significant impact on either the credit risk or the income statement. Renegotiated assets continue to be monitored closely for on-going payment performance and signs of impairment.

» **Read more in Note 4** Goals and policies in financial risk management, for a description of credit risks, interest risks and currency risks.

As of December 31, 2019, the total allowances for expected credit losses in Financial Services amounted to 1.51% (1.63) of the total credit portfolio in the segment. This reserve ratio is used as an important measure for Financial Services and includes operating leases and inventory. Allowances for expected credit losses for customer-financing receivables has increased since the beginning of the year from SEK 2,187 M to SEK 2,343 M primarily due to the overall increase in the customer-financing portfolio. During the year, economic conditions in certain segments have continued to show improvement, having a slightly offsetting effect on the overall allowance level.

» **Read more in Note 30** Financial instruments, for information on the gain or loss recognized in the operating income arising from derecognition of customer-financing receivables in table 15:3.

Table 15:6 represents the gross credit exposure on customer-financing receivables within the Volvo Group per age interval. The lifetime expected credit loss allowance for customer-financing receivables not credit impaired amounted to SEK 1,982 M (1,859) and allowance for customer-financing receivables credit impaired amounted to SEK 361 M (329), included in tables 15:4 and 15:5. The remaining exposure was secured

Change of allowance for expected credit losses for customer-financing receivables	2019		2018	
	Not credit impaired	Credit impaired	Not credit impaired	Credit impaired
<b>Closing balance previous year</b>	<b>1,859</b>	<b>329</b>	<b>1,277</b>	<b>299</b>
Transition effect IFRS 9 <sup>1</sup>	–	–	397	–
<b>Opening balance</b>	<b>1,859</b>	<b>329</b>	<b>1,674</b>	<b>299</b>
New valuation allowance charged to income	642	217	522	150
Reversal of valuation allowance charged to income	–40	–90	–45	–62
Utilization of valuation allowance related to actual losses	–0	–532	–	–331
Movements between not credit impaired/credit impaired <sup>2</sup>	–430	430	–257	257
Translation differences	71	11	38	16
Reclassification <sup>3</sup>	–11	–3	–	–
Syndication transactions and other	–109	–1	–73	–1
<b>Allowance for expected credit losses for customer-financing receivables as of December 31</b>	<b>1,982</b>	<b>361</b>	<b>1,859</b>	<b>329</b>

15:5

- 1 The opening balance for 2018 is restated due to the implementation of IFRS 9.
- 2 When a receivable becomes credit impaired a transfer of allowance is made to allowance for credit impaired receivables.
- 3 A reclassification has been made during 2019 to Assets held for sale of SEK 14 M, » **Read more in Note 3** Acquisitions and divestments of shares in subsidiaries.

by liens on the financed commercial vehicles and equipment and, in certain circumstances, other credit enhancements such as personal guarantees, credit insurance, liens on other property owned by the borrower etc. Collaterals taken in possession that meet the criteria for recognition in the balance sheet amounted to SEK 278 M (147) as of December 31, 2019.

Customer-financing receivables Gross exposure	Dec 31, 2019					Dec 31, 2018				
	Not due	1–30	31–90	>90	Total	Not due	1–30	31–90	>90	Total
Customer-financing receivables total	130,818	10,223	3,017	1,268	<b>145,326</b>	118,172	7,390	2,241	1,312	<b>129,115</b>
Whereof not credit impaired	130,606	9,172	2,366	218	<b>142,362</b>	117,955	6,632	1,713	531	<b>126,831</b>
Whereof credit impaired	213	1,051	651	1,049	<b>2,963</b>	217	758	528	781	<b>2,284</b>

15:6



### Concentration of credit risk

#### Customer concentration

The ten largest customers within Financial Services account for 6.8% (6.1) of the total asset portfolio. The rest of the portfolio is attributable to a large number of customers and the credit risk is therefore spread across many customers.

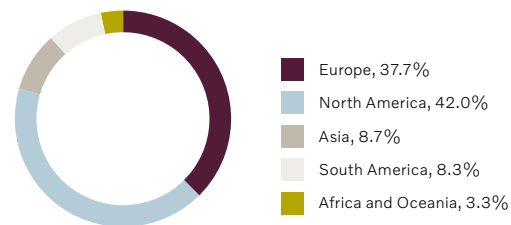
#### Concentration by geographical market

Graph 15:7 discloses the concentration of Financial Services portfolio divided into geographical markets.

» **Read more in Note 4** Goals and policies in financial risk management about credit risks.

» **Read more in the Board of Directors' report** about Financial Services' development during the year.

Geographic market, percentage of customer-financing portfolio (%)



15:7

## 16 RECEIVABLES



### ACCOUNTING POLICY

Receivables are recognized at amortized cost. Changes to the allowance for expected credit losses for accounts receivables are recognized in other operating income and expense.

The Volvo Group is applying the simplified expected credit loss model for accounts receivables, under which the loss allowance is measured at an amount equal to lifetime expected credit losses. The allowance is recorded at initial recognition and is reassessed during the contract period.

» **Read more in Note 30** Financial Instruments in section derecognition of financial assets, for receivables subject to discounting activities.



### SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

#### Allowance for expected credit losses

Accounts receivables are short term by nature and consequently the risk assessment horizon is short. A collective assessment is made on accounts receivables not credit impaired. Historical information regarding credit loss experience is used to forecast future losses, adjusted for current and forecasted conditions. An individual assessment is made on credit impaired accounts receivables based on the financial condition of the customer.

#### Risk management practices

Credit risks are managed through active credit monitoring and follow-up routines in accordance with the Volvo Group Credit management directive. This directive includes different steps to perform when an invoice is not paid at due date. When a credit risk is verified, for example through a bank-

ruptcy, or when an allowance has been unchanged for two years and it can be demonstrated that all required steps have been performed the allowance is reversed and the accounts receivables are written off. Apart from certain exceptions the Volvo Group continues to engage in enforcement activity even after a write-off in order to recover the contractual amount not previously received.

During 2019 certain receivables have been renegotiated but this has not had a significant impact on either the credit risk or the income statement. Renegotiated receivables continue to be closely monitored for on-going payment performance and signs of impairment.

As of December 31, 2019, the total allowance for expected credit losses for accounts receivables amounted to 2.64% (2.83) of total accounts receivables.

» **Read more in Note 4** Goals and policies in financial risk management, regarding credit risk.

Non-current receivables	Dec 31, 2019	Dec 31, 2018
Other interest-bearing receivables <sup>1</sup>	229	357
Interest and currency risk derivatives <sup>2</sup>	1,106	1,624
Contract and right of return assets <sup>3</sup>	3,279	4,394
Other receivables	4,645	3,656
<b>Non-current receivables</b>	<b>9,259</b>	<b>10,031</b>

16:1

1 The amount is the non-current part of other interest-bearing receivables in note 30 Financial Instruments, table 30:1.

2 The amount is the non-current part of Interest and currency risk derivatives in note 30, table 30:1.

3 » **Read more in Note 7** Revenue, about contract and right of return assets.

<b>Current receivables</b>	Dec 31, 2019	Dec 31, 2018
Other interest-bearing receivables <sup>1</sup>	1,275	183
Accounts receivables <sup>2</sup>	37,723	41,906
Prepaid expenses and accrued income	3,030	3,144
VAT receivables	3,223	3,311
Interest and currency risk derivatives <sup>3</sup>	909	2,183
Contract and right of return assets <sup>4</sup>	4,589	1,056
Other receivables	7,465	7,363
<b>Current receivables, after deduction of allowance for expected credit losses on accounts receivables</b>	<b>58,214</b>	<b>59,146</b>

16:2

- 1 The amount is the current part of other interest-bearing receivables in note 30 Financial Instruments, table 30:1.
- 2 A reclassification has been made during 2019 to assets held for sale of SEK 4,742 M, » [Read more in Note 3](#) Acquisitions and divestments of shares in subsidiaries.
- 3 The amount is the current part of Interest and currency risk derivatives in note 30 Financial instruments, table 30:1.
- 4 » [Read more in Note 7](#) Revenue, about contract and right of return assets.

<b>Change of allowance for expected credit losses on accounts receivables</b>	2019	2018
<b>Closing balance previous year</b>	<b>1,221</b>	<b>1,156</b>
Transition effect IFRS 9 <sup>1</sup>	–	26
<b>Opening balance</b>	<b>1,221</b>	<b>1,182</b>
New allowance charged to income	380	309
Reversal of allowance charged to income	–173	–144
Utilization of allowance related to actual losses	–121	–153
Translation differences	34	27
Reclassifications, etc <sup>2</sup>	–320	0
<b>Allowance for expected credit losses on accounts receivables as of December 31</b>	<b>1,021</b>	<b>1,221</b>

16:3

- 1 The opening balance for 2018 is restated due to the implementation of IFRS 9.
- 2 Includes reclassification to other non-current receivables (SEK –277 M) and reclassification to assets held for sale (SEK –37 M), » [Read more in Note 3](#) Acquisitions and divestments of shares in subsidiaries

» [Read more in Note 30](#) Financial Instruments.

<b>Age analysis of accounts receivables</b>	Dec 31, 2019					Dec 31, 2018				
	Not Due	1–30	31–90	>90	<b>Total</b>	Not Due	1–30	31–90	>90	<b>Total</b>
Accounts receivables gross	35,406	1,281	625	1,433	<b>38,744</b>	39,057	1,843	723	1,503	<b>43,127</b>
Allowance for expected credit losses on accounts receivables	–285	–19	–52	–664	<b>–1,021</b>	–480	–11	–37	–693	<b>–1,221</b>
<b>B/S Accounts receivables net</b>	<b>35,121</b>	<b>1,262</b>	<b>572</b>	<b>768</b>	<b>37,723</b>	<b>38,577</b>	<b>1,832</b>	<b>686</b>	<b>810</b>	<b>41,906</b>

16:4



# 17 INVENTORIES



## ACCOUNTING POLICY

Inventories are recognized at the lower of cost and net realizable value.

The cost is established by using the first-in, first-out principle (FIFO) and is based on the standard cost method, including costs for all direct manufacturing expenses and the attributable share of capacity and other manufacturing-related costs. The standard costs are tested regularly and adjustments are made based on current conditions. Costs for research and development, selling, administration and financial expenses are not included.

Net realizable value is calculated as the selling price less costs attributable to the sale.



## SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

### *Inventory obsolescence*

The calculation of net realizable value involves estimation of a future sales price, which is dependent on several parameters, such as market demand, model changes and development of used products prices. If the net realizable value is lower than cost, a valuation allowance is established for inventory obsolescence.

Inventory	Dec 31, 2019	Dec 31, 2018
Finished products	34,368	40,440
Production materials, etc.	22,277	25,343
<b>B/S Inventory<sup>1</sup></b>	<b>56,644</b>	<b>65,783</b>

17:1

1 A reclassification has been made to assets held for sale amounting to SEK 5,510 M. » **Read more in Note 3** Acquisitions and divestments of shares in subsidiaries, about assets held for sale.

The total inventory value, net of inventory obsolescence allowance, was SEK 56,644 M (65,783) as of December 31, 2019. Inventories recognized as cost of sold products during the period amounted to SEK 311,495M (281,072).

Change in allowance for inventory obsolescence	2019	2018
<b>Opening balance</b>	<b>3,926</b>	<b>3,489</b>
Change in allowance for inventory obsolescence charged to income	722	432
Scrapping	-414	-370
Translation differences	109	133
Reclassifications etc.	-40	242
<b>Allowance for inventory obsolescence as of December 31</b>	<b>4,303</b>	<b>3,926</b>

17:2

# 18

## CASH AND CASH EQUIVALENTS



### ACCOUNTING POLICY

Cash and cash equivalents include highly liquid interest-bearing securities that are considered easily convertible to cash. These include marketable securities and reverse repurchase agreements, with a date of maturity within three months at the time of investment. Interest-bearing securities with a date of maturity exceeding three months at the time of investment are recognized as marketable securities.

» Read more in Note 30 Financial instruments, about accounting policies for financial instruments.

Cash and cash equivalents as of December 31, 2019, include SEK 2.4 billion (1.9) that is not available for use by the Volvo Group and SEK 9.1 billion (5.6) where other limitations exist, mainly cash and cash equivalents in countries where exchange controls or other legal restrictions apply. Therefore it is not possible to immediately use these cash and cash equivalents in other parts of the Volvo Group, however there is normally no limitation to use them for the Volvo Group's operation in the respective country.

Cash and cash equivalents	Dec 31, 2019	Dec 31, 2018
Cash in banks	49,030	38,804
Marketable securities with original duration less than 3 months <sup>1</sup>	2,925	1,271
Time deposits in banks	9,505	5,831
Reverse repurchase agreements <sup>2</sup>	–	1,027
<b>B/S Cash and cash equivalents</b>	<b>61,461</b>	<b>46,933</b>

18:1

1 Additionally the Volvo Group recognized outstanding marketable securities with original duration exceeding 3 months of SEK 200 M (160) in government securities as of December 31, 2019.

2 A reverse repurchase agreement is a financial transaction where one party commits to buy securities from a counterpart with the agreement to sell back the securities at an agreed price at a set future date.

# 19

## EQUITY AND NUMBER OF SHARES



### ACCOUNTING POLICY

Earnings per share before dilution is calculated as income for the period, attributable to the owners of AB Volvo, divided by AB Volvo's average number of outstanding shares for the fiscal year. Diluted earnings per share is calculated as income for the period attributable to the owners of AB Volvo, divided by AB Volvo's average number of outstanding shares for the fiscal year, including the average number of shares that would be issued as an effect of ongoing share-based incentive programs. If during the year there were potential shares redeemed or expired, they are also included in the average number of shares used to calculate the earnings per share after dilution.

The share capital of the parent company is divided into two series of shares, A and B. Both series carry the same rights, except that each Series A share carries the right to one vote and each Series B share carries the right to one tenth of a vote. The shares' quota value is SEK 1.20.

Cash dividend 2019, decided by the Annual General Meeting 2018, amounted to SEK 5.00 (4.25) per share and an extraordinary dividend amounted to SEK 5.00 (–), generating a total amount of SEK 20,335 M (8,636).

During 2019 AB Volvo, free of charge, transferred 537,726 treasury B-shares, with a total quota value of 645,271 SEK to participants in the long-term share-based incentive program for senior executives in the Volvo Group. This allotment is a final settlement of the debt of shares related to the long-term share-based incentive program. The transferred treasury shares represent an insignificant part of the total share capital in AB Volvo. During 2019 the long-term share-based incentive program was finalized.

During 2019 AB Volvo converted a total of 1,193,358 Series A shares to Series B shares.

Unrestricted equity in the parent company as of December 31, 2019 amounted to SEK 31,319 M (37,032).

» **Read more in Note 27** Personnel about the Volvo Group share-based incentive program.

### Change in other reserves

Holding of  
shares at  
fair value

Opening balance 2019	226
Other changes	–
Fair value adjustments regarding holdings in Japanese companies	10
Fair value adjustments regarding other companies	0
<b>Balance as of December 31, 2019</b>	<b>236</b>

19:1

### Information regarding number of shares

Dec 31,  
2019

Dec 31,  
2018

Own Series A shares	20,728,135	20,728,135
Own Series B shares	74,240,001	74,777,727
<b>Total own shares</b>	<b>94,968,136</b>	<b>95,505,862</b>
Own shares in % of total registered shares	4.46	4.49
Outstanding Series A shares	456,184,336	457,377,694
Outstanding Series B shares	1,577,267,748	1,575,536,664
<b>Total outstanding shares</b>	<b>2,033,452,084</b>	<b>2,032,914,358</b>
Total registered Series A shares	476,912,471	478,105,829
Total registered Series B shares	1,651,507,749	1,650,314,391
<b>Total registered shares</b>	<b>2,128,420,220</b>	<b>2,128,420,220</b>
Average number of outstanding shares	2,033,405,780	2,032,210,615

19:2

Share capital	Series A shares		Series B shares		Total	
	2019	2018	2019	2018	2019	2018
Outstanding shares opening balance	457,377,694	459,247,373	1,575,536,664	1,572,606,911	2,032,914,358	2,031,854,284
Allotment to long-term incentive program	–	–	537,726	1,060,074	537,726	1,060,074
Converting Series A shares to Series B shares	–1,193,358	–1,869,679	1,193,358	1,869,679	–	–
<b>Outstanding shares as of December 31</b>	<b>456,184,336</b>	<b>457,377,694</b>	<b>1,577,267,748</b>	<b>1,575,536,664</b>	<b>2,033,452,084</b>	<b>2,032,914,358</b>

19:3

### Information regarding shares

2019

2018

Number of outstanding shares, December 31, in millions	2,033	2,033
Average number of shares before dilution in millions	2,033	2,032
Shares that would be issued as an effect of ongoing share-based incentive programs, in millions	0	1
Average number of shares after dilution in millions	2,033	2,033
Average share price, SEK	139.93	147.98
Net income attributable to owners of AB Volvo	35,861	24,897
Basic earnings per share, SEK	17.64	12.25
Diluted earnings per share, SEK	17.64	12.24

19:4

# 20 PROVISIONS FOR POST-EMPLOYMENT BENEFITS



## ACCOUNTING POLICY

The Volvo Group's post-employment benefits, such as pensions, health-care and other benefits are mainly settled by means of regular payments to independent authorities or bodies that assume pension obligations and administer pensions through defined contribution plans.

The remaining post-employment benefits are defined benefit plans where the obligations remain within the Volvo Group and are secured by proprietary pension foundations. The Volvo Group's defined benefit plans relate mainly to subsidiaries in the USA and comprise both pensions and other benefits, such as healthcare. Other large-scale defined benefit plans apply to white collar employees in Sweden (mainly through the ITP pension plan) and employees in France, Great Britain and Belgium.

Actuarial calculations are made for all defined benefit plans in order to determine the present value of the obligation for benefits vested by its current and former employees. The actuarial calculations are prepared annually and are based upon actuarial assumptions that are determined at the balance sheet date each year. Changes in the present value of obligations due to revised actuarial assumptions and experience adjustments constitute remeasurements.

Provisions for post-employment benefits in the Volvo Group's balance sheet correspond to the present value of obligations at year-end, less fair value of plan assets. All changes in the net defined liability (asset) are recognized when they occur. Service cost and net interest expense (income) are recognized in the income statement, while remeasurements such as actuarial gains and losses are recognized in other comprehensive income. Special payroll tax is included in the pension liability in pension plans in Sweden and Belgium.

For defined contribution plans, expenses for premiums are recognized in the income statement as incurred.



## SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

### Assumptions when calculating post-employment benefits

Provisions and costs for post-employment benefits, mainly pensions and health care benefits, are dependent on actuarial assumptions. The actuarial assumptions and calculations are made separately for each defined benefit plan. The most significant assumptions are discount rate and inflation. Inflation assumptions are based on an evaluation of external market indicators. A sensitivity analysis is included in graph 20:6 and shows the effect on the defined benefit obligations if significant assumptions are changed. There are also other assumptions made such as salary increases, retirement rates, mortality rates, health care cost trends rates and other factors. The salary increase assumptions reflect the historical trend, the near-term and long-term outlook and assumed inflation. Retirement and mortality rates are based primarily on officially available mortality statistics. Healthcare cost trend assumptions are based on historical data as well as the near-term outlook and an assessment of likely long-term trends. The Volvo Group has engaged a global actuary in order to ensure that a professional assessment is made and that assumptions are consistently developed across jurisdictions. The actuarial assumptions are reviewed annually by the Volvo Group and modified when deemed appropriate.

The following tables disclose information about defined benefit plans. The Volvo Group recognizes the difference between the obligations and the plan assets in the balance sheet. The disclosures refer to assumptions applied for actuarial calculations, recognized costs during the financial year and the value of obligations and plan assets at year-end. The tables also include a reconciliation of obligations and plan assets during the year.

Assumptions applied for actuarial calculations	Dec 31, 2019	Dec 31, 2018
<b>Sweden</b>		
Discount rate, % <sup>1</sup>	1.70	2.50
Inflation, %	1.75	1.75
Expected salary increase, %	2.90	2.90
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	20.90/23.50	20.90/23.50
Retiring in 25 years (member age 40 today), year	22.70/24.60	22.70/24.60
<b>USA</b>		
Discount rate, % <sup>1,2</sup>	2.06–3.27	3.35–4.25
Inflation, %	2.20	2.20
Expected salary increase, %	3.00–4.10	2.70–3.50
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	20.67/22.44	20.78/22.63
Retiring in 25 years (member age 40 today), year	22.65/24.44	22.29/24.02
<b>France</b>		
Discount rate, % <sup>1</sup>	0.70–1.20	1.60–2.00
Inflation, %	1.50	1.50
Expected salary increase, %	3.00	3.00
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	19.22/23.05	19.22/23.05
Retiring in 25 years (member age 40 today), year	19.22/23.05	19.22/23.05
<b>Great Britain</b>		
Discount rate, % <sup>1</sup>	2.05	2.90
Inflation, %	2.75	3.15
Expected salary increase, %	0.00	0.00
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	21.71/23.51	21.71/23.51
Retiring in 25 years (member age 40 today), year	23.97/26.30	23.97/26.30
<b>Belgium</b>		
Discount rate, % <sup>1</sup>	1.10	1.91
Inflation, %	1.50	1.50
Expected salary increase, %	2.55	2.55
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	22.02/25.83	22.02/25.83
Retiring in 25 years (member age 40 today), year	22.02/25.83	22.02/25.83

20:1

- 1 The discount rate for each country is determined by reference to market yields on high quality corporate bonds. In countries where there is no functioning market in such bonds, the market yields on government bonds are used. The discount rate for the Swedish pension obligation is determined by extrapolating current market rates along the yield curve of mortgage bonds.
- 2 For all plans except three the discount rate used is within the range 2.92–3.27% (4.01–4.25).



&gt;&gt;

Summary of provisions for post-employment benefits	Dec 31, 2019	Dec 31, 2018
Obligations	-68,335	-57,260
Fair value of plan assets	50,010	42,327
<b>Net provisions for post-employment benefits</b>	<b>-18,325</b>	<b>-14,933</b>

20:2

Pension costs	2019	2018
Current year service costs	1,749	1,559
Interest costs	1,602	1,479
Interest income	-1,378	-1,253
Past service costs	70	-141
Gain/loss on settlements	3	-6
<b>Pension costs for the period, defined benefit plans</b>	<b>2,045</b>	<b>1,638</b>
Pension costs for defined contribution plans	2,986	2,697
<b>Total pension costs for the period</b>	<b>5,031</b>	<b>4,335</b>

20:3

Costs for the period, post-employment benefits other than pensions	2019	2018
Current year service costs	123	95
Interest costs	187	141
Interest income	-25	-2
Past service costs	6	2
Gain/loss on settlements	-	-
Remeasurements	30	12
<b>Total costs for the period</b>	<b>322</b>	<b>248</b>

20:4

	Sweden Pensions	USA Pensions	France Pensions	Great Britain Pensions	Belgium Pensions	USA Other benefits
Average duration of the obligations, years	23.9	11.7	13.9	18.6	13.5	10.4

20:5

The analysis below presents the sensitivity of the defined benefit obligations when changes in the applied assumptions for discount rate and inflation are made. The sensitivity analysis is based on a change in an assumption while holding all other assumptions constant. In practice,

this is not probable, and changes in some of the assumptions may be correlated. Depending on specific plan design and benefit formulas on each local plan, the sensitivity effect on the obligation differs for the respective assumptions.

Sensitivity analysis 2019	—	EFFECT ON OBLIGATION, SEK M	+
	<b>If discount rate increases 0.5%</b>		<b>If discount rate decreases 0.5%</b>
Sweden Pensions	-3,003		2,626
USA Pensions	-1,348		1,213
France Pensions	-209		193
United Kingdom Pensions	-784		689
Belgium Pensions	-261		228
USA Other benefits	-186		169
Other plans	-281		249
	<b>If inflation decreases 0.5%</b>		<b>If inflation increases 0.5%</b>
Sweden Pensions	-3,002		2,619
USA Pensions	0	0	
France Pensions	-2	2	
United Kingdom Pensions	-470		469
Belgium Pensions	-292		265
USA Other benefits	-18	16	
Other plans	-6	6	

20:6



**Obligations in defined benefit plans**

	Sweden Pensions	USA Pensions	France Pensions	Great Britain Pensions	Belgium Pensions	USA Other benefits	Other plans	Total
<b>Obligations opening balance 2018</b>	<b>17,260</b>	<b>18,211</b>	<b>2,947</b>	<b>6,994</b>	<b>2,531</b>	<b>3,478</b>	<b>3,554</b>	<b>54,976</b>
Acquisitions, divestments and other changes	0	-41	-147	-	-2	-	144	-46
Current year service costs	658	380	98	9	210	57	242	1,655
Interest costs	464	668	55	193	37	124	78	1,619
Past service costs	157	-	-345	21	-	-	28	-139
Settlements	-	-	-6	-	-	-	0	-7
Employee contributions	-	-	-	2	0	21	17	40
Remeasurements:								
– Effect of changes in demographic assumptions	-	-48	-40	-48	195	-45	-35	-22
– Effect of changes in financial assumptions	799	-981	-38	-208	-90	-185	-23	-726
– Effect of experience adjustments	185	114	-240	-	38	122	-38	181
Exchange rate translation	-	1,678	127	154	110	310	196	2,576
Benefits paid	-477	-1,210	-83	-326	-90	-373	-288	-2,846
<b>Obligations as of December 31, 2018</b>	<b>19,047</b>	<b>18,772</b>	<b>2,328</b>	<b>6,791</b>	<b>2,939</b>	<b>3,508</b>	<b>3,874</b>	<b>57,260</b>
of which								
Funded defined benefit plans	18,635	18,077	15	6,793	2,939	-	2,251	48,709
Acquisitions, divestments and other changes	-11	35	-2	-	-	0	284	305
Current year service costs	734	421	153	2	228	58	276	1,871
Interest costs	470	767	47	205	49	144	107	1,790
Past service costs	17	43	-11	-	-	0	26	75
Settlements	-103	-	-8	-	-	-	1	-110
Employee contributions	-	-	-	-	0	28	49	77
Remeasurements:								
– Effect of changes in demographic assumptions	-	-110	-14	-64	-	-214	-8	-409
– Effect of changes in financial assumptions	3,947	2,319	300	877	364	350	220	8,377
– Effect of experience adjustments	333	69	-29	-	85	-16	2	445
Exchange rate translation	-	679	35	510	40	135	111	1,509
Benefits paid	-470	-1,321	-65	-253	-144	-372	-229	-2,854
<b>Obligations as of December 31, 2019</b>	<b>23,964</b>	<b>21,675</b>	<b>2,733</b>	<b>8,068</b>	<b>3,562</b>	<b>3,620</b>	<b>4,713</b>	<b>68,335</b>
of which								
Funded defined benefit plans	-23,517	-21,816	-19	-8,262	-3,561	-	-2,790	-59,965

20:7

**Fair value of plan assets in funded plans**

	Sweden Pensions	USA Pensions	France Pensions	Great Britain Pensions	Belgium Pensions	USA Other benefits	Other plans	Total
<b>Plan assets opening balance 2018</b>	<b>12,207</b>	<b>17,488</b>	<b>10</b>	<b>7,241</b>	<b>2,264</b>	<b>-</b>	<b>1,542</b>	<b>40,753</b>
Acquisitions, divestments and other changes	-	-41	-	-	-2	-	-6	-49
Interest income	330	652	0	201	34	-	39	1,256
Settlements	-	-	-	-	-	-	0	0
Remeasurements	-483	-147	2	-367	-106	-	-25	-1,126
Employer contributions	-4	872	1	72	152	-	129	1,221
Employee contributions	-	-	-	2	0	21	16	40
Exchange rate translation	-	1,621	0	159	98	-	70	1,948
Benefits paid	-1	-1,175	-1	-326	-70	-21	-122	-1,716
<b>Plan assets as of December 31, 2018</b>	<b>12,048</b>	<b>19,270</b>	<b>13</b>	<b>6,983</b>	<b>2,370</b>	<b>-</b>	<b>1,643</b>	<b>42,327</b>
Acquisitions, divestments and other changes	0	2	-	0	-	33	289	323
Interest income	300	790	0	212	39	-	62	1,403
Settlements	-	-	-	-	-	-	-0	0
Remeasurements	1,407	2,693	-0	701	190	-	47	5,038
Asset ceiling	-	-	-	-193	-	-	-30	-223
Employer contributions	924	-	2	60	174	-	276	1,437
Employee contributions	-	-	-	-	0	-28	47	19
Exchange rate translation	-	700	0	530	33	0	47	1,309
Benefits paid	1	-1,153	-1	-253	-122	-17	-80	-1,624
<b>Plan assets as of December 31, 2019</b>	<b>14,680</b>	<b>22,301</b>	<b>15</b>	<b>8,040</b>	<b>2,685</b>	<b>-12</b>	<b>2,301</b>	<b>50,010</b>

20:8





<b>Net provisions for post-employment benefits</b>	Sweden Pensions	USA Pensions	France Pensions	Great Britain Pensions	Belgium Pensions	USA Other benefits	Other plans	Total
<b>Net provisions for post-employment benefits as of December 31, 2018</b>	<b>-6,999</b>	<b>497</b>	<b>-2,314</b>	<b>191</b>	<b>-570</b>	<b>-3,508</b>	<b>-2,230</b>	<b>-14,933</b>
of which reported as:								
<b>B/S</b> Net pension assets	-	1,223	-	321	-	-	5	<b>1,549</b>
<b>B/S</b> Provisions for post-employment benefits	-6,999	-726	-2,314	-130	-570	-3,508	-2,235	<b>-16,482</b>
<b>Net provisions for post-employment benefits as of December 31, 2019</b>	<b>-9,284</b>	<b>626</b>	<b>-2,718</b>	<b>-28</b>	<b>-877</b>	<b>-3,632</b>	<b>-2,412</b>	<b>-18,325</b>
of which reported as:								
<b>B/S</b> Net pension assets	-	-	-	140	-	1,518	5	<b>1,663</b>
<b>B/S</b> Provisions for post-employment benefits	-9,284	626	-2,718	-167	-877	-5,151	-2,417	<b>-19,988</b>

20:9

## Sweden

The main defined benefit plan in Sweden is the ITP2 plan and it is based on final salary. The plan is semi-closed, meaning that only new employees born before 1979 enters the ITP2 solution. The Volvo Group's pension foundation in Sweden was formed in 1996 to secure obligations relating to retirement pensions for white collar workers in Sweden in accordance with the ITP plan. Plan assets amounting to SEK 2,456 M were contributed to the foundation at its formation, corresponding to the value of the pension obligations at that time. Since its formation, net contributions of SEK 4,334 M, whereof SEK 924 M during 2019, have been made to the foundation. The plan assets in the Volvo Group's Swedish pension foundation are invested in Swedish and foreign stocks and mutual funds, and in interest-bearing securities and alternative assets, in accordance with a strategic allocation that is determined by the foundation's Board of Directors. As of December 31, 2019, the fair value of the foundation's plan assets amounted to SEK 14,662 M (12,030), of which 47% (46) was invested in equity instruments. At the same date, retirement pension obligations attributable to the ITP plan amounted to SEK 23,492 M (18,611).

Swedish companies can secure new pension obligations through balance sheet provisions or pension fund contributions. Furthermore, a credit insurance policy must be taken out for the value of the obligations. In addition to benefits relating to retirement pensions, the ITP plan also includes, for example, a collective family pension, which the Volvo Group finances through an insurance policy with the Alecta insurance company. According to an interpretation from the Swedish Financial Reporting Board, this is a multi-employer defined benefit plan. For the fiscal year 2019, the Volvo Group did not have access to information from Alecta that would have enabled this plan to be recognized as a defined benefit plan. Accordingly, the plan has been recognized as a defined contribution plan. The Volvo Group estimates it will pay premiums of about SEK 284 M to Alecta in 2020. The collective consolidation level measures the apportionable assets in relation to the insurance commitment. According to Alecta's consolidation policy for defined benefit pension insurance, the collective consolidation level is normally allowed to vary between 125% and 175%. Alecta's preliminary consolidation ratio amounts to 148% (142). If the consolidation level falls short or exceeds the normal interval, one measure may be to increase the contract price for new subscription or to introduce premium reductions.

The Volvo Group's share of the total saving premiums for ITP2 in Alecta as of December 31, 2019 amounted to 0.31% (0.33) and the share of the total number of active policy holders amounted to 1.76% (1.67).

All employees in Sweden benefit from a jubilee awards plan according to which they receive a certain number of shares after they have rendered 25, 35 and 45 years of services. This plan is accounted for as a share-based payment program.

» Read more in Note 27 Personnel about accounting policy on share-based payments.

## USA

In the USA, the Volvo Group has tax qualified pension plans, post-retirement medical plans and non qualified pension plans. The tax qualified pension plans are funded while the other plans are generally unfunded. There are five funded defined benefit plans, whereof one is closed, one is partially closed and three are open to new entrants. All plans are open for future accruals. The Volvo Group's subsidiaries in the USA mainly secure their pension obligations through transfer of funds to pension plans. The US Retirement Trust manages the assets related to the five funded plans. The strategic allocation of plan assets must comply with the investment policy as decided by the Board of Directors of the Trust. All members of the board are nominated by the company although each member is subject to strict regulatory requirements on fiduciary responsibility. At the end of 2019, the total value of pension obligations secured by pension plans of this type amounted to SEK 21,816 M (18,077). At the same point in time, the total value of the plan assets in these plans amounted to SEK 22,301 M (19,270), of which 12% (12) was invested in equity instruments. The regulations for securing pension obligations stipulate certain minimum levels concerning the ratio between the value of the plan assets and the value of the obligations. During 2019, the Volvo Group contributed SEK 0 M (872) to the US pension plans.

## France

In France, the Volvo Group has two types of defined benefit plans, Indemnité de Fin de Carrière (IFC) and jubilee awards plan. The plans are unfunded. The IFC is compulsory in France. The benefits are based on the Collective Bargaining Agreement applicable in the company, on the employee's seniority at retirement date and on the final pay. The benefit payment is due only if employees are working for the company when they retire. The jubilee award plan is an internal agreement and the benefit is based on the employee's seniority career at 20, 30, 35 and 40 years. As of December 31, 2019 the total value of pension obligations amounted to SEK 2,733 M (2,328).

### Great Britain

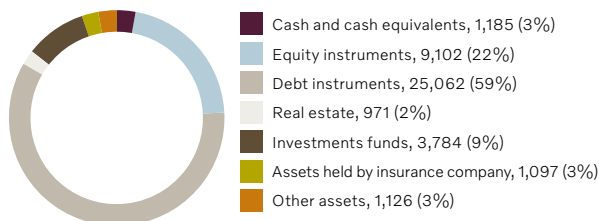
In Great Britain, the Volvo Group has five defined benefit pension plans, which are all funded. The pension funds are set up as separate legal entities, which are governed by a trustee board common for all schemes. The common trustee board is composed of representatives from the employees and an independent professional trustee. All plans are closed to new entrants and closed for future accruals to existing members.

The allocation of plan assets must comply with the investment strategy agreed between the company and the common trustee board. For three of the plans, if a net surplus is recognized in the balance sheet when the pension scheme runs-off, the Volvo Group has an unconditional right to the surplus of that plan or plans. For two plans this is not strictly legally the case and therefore an asset ceiling is applied.

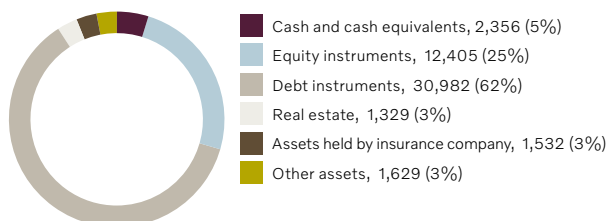
At the end of 2019, the total value of pension obligations amounted to SEK 8,068 M (6,791). The total value of the plan assets in these plans amounted to SEK 8,040 M (6,983).

During 2019, the Volvo Group has made extra contributions to the pension plans in Great Britain in the amount of SEK 60 M (72).

Plan assets by category as of December 31, 2018



Plan assets by category as of December 31, 2019



20:10

#### Fair value of plan assets

	Dec 31, 2019	Dec 31, 2018
Cash and cash equivalents	2,349	1,185
<i>With a quoted market price</i>		
Equity instruments	10,047	9,102
Debt instruments	30,288	25,062
Real estate	175	186
Derivatives	-19	-36
Investments funds	-	2,495
Other	1,610	1,108
<i>With an unquoted market price</i>		
Other	5,784	3,224
<b>Total</b>	<b>50,233</b>	<b>42,327</b>

20:11

### Belgium

In Belgium, the Volvo Group has four traditional defined benefit pension plans based on final salary, whereof one is closed to new entrants. All plans are open for future accruals. Two are funded via own pension fund and two are funded via the group insurance product referred to in Belgium as Branch 21. Benefits are paid as a lump sum at retirement. There is also a local profit sharing program whereby any pay-outs are contributed to a defined contribution pension plan managed by the own pension fund or through a group insurance. All defined contribution pension plans in Belgium have a statutory minimum return guarantee and are therefore accounted for as defined benefit. The strategic asset allocation of plan assets must comply with the investment policy as decided by the Board of Directors of the pension fund. All board members of the pension fund are nominated by the company. At the end of 2019, the total value of pension obligations amounted to SEK 3,562 M (2,939). At the same point in time the plan assets of these plans amounted to SEK 2,685 M (2,370). During 2019 the Volvo Group contributed SEK 174 M (152) to the Belgium pension plans.

### Investment strategy and risk management

The Volvo Group manages the allocation and investment of pension plan assets with the purpose of meeting the long term objectives. The main objectives are to meet present and future benefit obligations, provide sufficient liquidity to meet such payment requirements and to provide a total return that maximizes the ratio of the plan assets in relation to the plan liabilities by maximizing return on the assets at an appropriate level of risk. The final investment decision often resides with the local trustee, but the investment policy for all plans ensures that the risks in the investment portfolios are well diversified. The primary risk mitigating activity in the long run is to close defined benefit plans to new entrants or to future accruals for existing members and replace with defined contribution plans when and where possible. The risks related to already accrued pension obligations, e.g. longevity and inflation, as well as buy out premiums and matching strategies are monitored on an ongoing basis in order to further limit the Volvo Group's exposure where and when possible.

In the last couple of years, some of the defined benefit plans have been closed to new entrants and replaced by defined contribution plans in order to reduce risk for the Volvo Group.

In Sweden, the minimum funding target is decided by PRI Pensionsgaranti. This is mandatory in order to stay in the system and get insurance for the pension liability. The contributions usually represents one year's new accrued benefits plus any shortfall towards the minimum funding target, unless there is a surplus according to local scheme valuation principles.

In the USA, the minimum funding target is decided by the company in order to avoid penalties, keep flexibility and avoid extensive filing with the Internal Revenue Service and participants. The minimum contributions usually represent one year's accrued benefits plus a seventh of any deficit, unless a scheme is showing a surplus according to local scheme valuation principles.

In Great Britain there is no minimum funding ratio. There is a regulatory requirement for each scheme to perform triennial valuations whereby any scheme showing a deficit must develop a recovery plan that returns the scheme to a fully funded basis within a reasonable timeframe. The recovery plan shall be agreed with the company and submitted to the regulator for approval.

In Belgium the minimum funding level is regulated by law and monitored by the financial supervisory authority, FSMA. The framework for the minimum funding requirement is based on a discount rate, which is based on the expected return of the plan assets. The pension fund must be fully funded on this basis at all times. The contribution policy of the pension fund is designed to provide stability in contributions over the duration of the plan.

In 2020, the Volvo Group estimates to transfer an amount of SEK 0.5–1.5 billion to pension plans.

# 21

## OTHER PROVISIONS



### ACCOUNTING POLICY

Provisions are recognized in the balance sheet when a legal or constructive obligation exists as a result from a past event and it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. When these criteria are not met, a contingent liability may be recognized.

#### *Provisions for product warranty*

Provisions for product warranty are recognized as cost of sales and include contractual warranty, technical goodwill warranty (warranty cover in excess of contractual warranty or campaigns which is accepted as a matter of policy or normal practice in order to maintain a good business relation with the customer) and campaign warranty. Provisions for contractual warranty are recognized when the products are sold, while provisions for technical warranty are determined based on historical statistics. Provision for campaigns in connection with specific quality problems are recognized when the campaign is decided.

#### *Provisions for extended coverage*

An extended coverage is a product insurance sold to a customer to cover a product according to specific conditions for an agreed period as an additional insurance to the factory contractual warranty. The provision is intended to cover the risk that the expected cost of providing services under the extended coverage contract exceed the expected revenue.

#### *Provisions in insurance operations*

Volvo Group has a captive insurance company and the provisions in insurance operations are related to third party claims addressed to companies within the Volvo Group. The claims reserve also includes a provision for unreported losses based on past experience. The unearned premium reserve is reported as an accrued expense within other current liabilities.

#### *Provisions for restructuring costs*

A provision for decided restructuring measures is recognized when a detailed plan for the implementation of the measures is complete and when this plan is communicated to those who are affected. A provision and costs for termination benefits as a result of a voluntary termination program is recognized when the employee accepts the offer. Normally restructuring costs are included in other operating income and expenses.

#### *Provisions for residual value risks*

Residual value risks are the risks that the Volvo Group in the future would have to dispose used vehicles at a loss if the price development of these products is worse than expected when the contracts were entered. The residual value risks pertain to operating lease contracts and sales transactions with residual value commitments (buybacks and tradebacks) where the Volvo Group has a residual value commitment. The majority of these contracts are recognized as assets under operating leases or as right of return asset in the balance sheet. During the period, the depreciable amount is adjusted through the income statement to correspond to estimated future net realizable value to continuously reflect potential residual value risks at the end of the contract period.

» Read more in Note 13 Tangible assets about residual value risks.

Residual value commitments that are independent from the sales transaction are not recognized as assets under operating leases or as right of return in the balance sheet, hence the potential residual value risks related to these contracts are recognized as provisions. To the extent the residual value exposure does not meet the definition of a provision, the gross exposure is reported as a contingent liability.

» Read more in Note 24 Contingent liabilities.

#### *Provisions for service contracts*

Service contracts offer the customer preventive maintenance according to an agreed service plan. The provision is intended to cover the risk that the expected cost of providing services and repairs under the service contract exceeds the expected revenue.



### SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

The uncertainties about the amount or timing of outflows vary for different kind of provisions. Regarding provisions for product warranty, extended coverage, residual value risks and service contracts, the provisions are based on historical statistics and estimated future costs, why the provided amount has a high correlation with the outflow of resources. Regarding provisions for disputes, like tax and legal disputes, the uncertainty is higher.

#### *Provisions for product warranty*

Warranty provisions are estimated with consideration of historical statistics with regard to known changes in warranty claims, warranty periods, the average time-lag between faults occurring until claims are received by the company and anticipated changes in quality indexes. The actual outcome of product warranties may deviate from the expected outcome and materially affect the warranty costs and provisions in future periods. Refunds from suppliers, that decrease the Volvo Group's warranty costs, are recognized to the extent these are considered to be certain.

#### *Provisions for legal proceedings*

The Volvo Group regularly reviews the development of significant outstanding legal disputes in which the Volvo Group companies are parties, both regarding civil law and tax disputes, in order to assess the need for provisions and contingent liabilities in the financial statements. Among the factors that the Volvo Group considers in making decisions on provisions and contingent liabilities are the nature of the dispute, the amount claimed, the progress of the case, the opinions of legal and other advisers, experience in similar cases, and any decision of the Volvo Group's management as to how the Volvo Group intends to handle the dispute. The actual outcome of a legal dispute may deviate from the expected outcome of the dispute. The difference between actual and expected outcome of a dispute might materially affect future financial statements, with an adverse impact upon the Volvo Group's operating income, financial position and liquidity.

Provisions for legal disputes are included within other provisions in table 21:1.

» Read more in Note 24 Contingent liabilities.

	Carrying value as of Dec 31, 2018	Provisions	Reversals	Utilizations	Acquired and divested companies	Translation differences	Other reclassi- fications	Carrying value as of Dec 31, 2019	Of which due within 12 months	Of which due after 12 months
Provisions for product warranty <sup>1,2</sup>	19,484	12,248	-2,406	-9,820	-	344	-1,089	18,762	8,232	10,530
Provisions for extended coverage <sup>2,3</sup>	1,055	493	-400	-243	-	35	-321	619	138	481
Provisions in insurance operations	613	155	-26	-45	-	23	0	720	-	720
Provisions for restructuring costs	79	129	-27	-6	-	2	-6	170	152	18
Provisions for residual value risks	483	1,096	-523	-489	-	29	-36	559	279	281
Provisions for service contracts	502	437	-197	-314	-	23	-36	416	299	116
Other provisions <sup>4</sup>	5,821	4,896	-1,606	-3,312	-	111	-665	5,246	2,806	2,439
<b>B/S Total</b>	<b>28,037</b>	<b>19,455</b>	<b>-5,185</b>	<b>-14,228</b>	<b>-</b>	<b>566</b>	<b>-2,152</b>	<b>26,492</b>	<b>11,907</b>	<b>14,585</b>

21:1

1 Including a provision of SEK 7 billion for emission control component in 2018. For more information see below.

2 Other reclassifications includes reclassification to assets held for sale (SEK 1,120 M), **Read more in Note 3** Acquisitions and divestments of shares in subsidiaries.

3 Other reclassifications includes reclassification to deferred revenue extended coverage.

4 Other reclassifications includes reclassification to tax liability (SEK 295 M) and to assets held for sale (SEK 174 M).

The Volvo Group has detected that an emissions control component used in certain markets and models, may degrade more quickly than expected, affecting the vehicles emission performance negatively. The Volvo Group made a provision of SEK 7 billion which impacted the operating income for 2018, relating to the estimated costs to address the issue. Negative cash flow effects have started in 2019 and will gradually ramp up in the coming years. The Volvo Group will continuously assess the size of the provision as the matter develops.

Other provisions mainly includes provisions for legal disputes, provisions for externally issued credit guarantees and other provisions, unless separately specified and commented in the table and text.

Long-term provisions as above are expected to be settled within 2 to 3 years.



# 22

## LIABILITIES



### ACCOUNTING POLICY

Loans are valued at amortized cost using the effective interest rate method. A hybrid bond issued by the Volvo Group is classified as debt in the Volvo Group's accounts as it constitutes a contractual obligation to make interest payments and repay the nominal amount of the debt to the holder of the instrument.

» **Read more in Note 30** Financial instruments for accounting policies related to financial instruments.

### Non-current liabilities

The tables below disclose the Volvo Group's non-current liabilities with the largest loans listed by currency. Loans in the Volvo Group's subsidiaries are mainly denominated in local currencies through Volvo Group Treasury which minimizes the currency exposure in the individual companies. Volvo Group Treasury uses various derivatives to facilitate lending and borrowing in different currencies without increasing the risk for the Volvo Group.

» **Read more in Note 4** Goals and policies in financial risk management.

Non-current bond loans and other loans	Actual interest rate Dec 31, 2019, %	Effective interest rate Dec 31, 2019, %	Dec 31, 2019	Dec 31, 2018
Currency/start year/maturity				
<b>Bond loans</b>				
EUR 2012–2019/2021–2078 <sup>1</sup>	0.00–4.79	0.00–4.79	39,373	37,965
SEK 2018–2019/2021–2023	0.42–1.51	0.42–1.51	23,462	21,151
NOK 2019/2022–2024	2.58–2.85	2.61–2.88	1,587	–
HKD 2019/2024	2.31	2.31	866	–
USD 2019/2029	2.96	2.96	466	–
<b>B/S Total bond loans<sup>2,3</sup></b>			<b>65,754</b>	<b>59,115</b>
<b>Other loans</b>				
USD 2014–2019/2021–2024	2.09–3.03	2.31–3.25	12,936	11,086
EUR 2014–2018/2022–2025	0.00–2.34	0.00–2.34	6,919	6,864
CAD 2019/2021–2022	2.59–3.02	2.61–3.05	1,925	330
MXN 2017/2021	8.75	9.11	594	1,322
JPY 2010–2019/2024–2030	0.33–0.49	0.33–0.49	903	863
BRL 2013–2015/2024–2027	3.00–12.75	3.00–12.75	2,814	3,331
AUD 2017–2019/2021–2023	1.75–2.01	1.76–2.03	448	651
CNY 2017–2019/2021–2022	4.05–5.66	4.05–5.66	1,497	1,377
Loans in other currencies			972	738
Lease liabilities <sup>4</sup>			5,334	761
Revaluation of outstanding derivatives to SEK <sup>5</sup>			1,521	772
<b>B/S Total other loans<sup>2,3</sup></b>			<b>35,862</b>	<b>28,095</b>

22:1

Other non-current liabilities	Dec 31, 2019	Dec 31, 2018
Deferred leasing income <sup>6</sup>	5,123	4,829
Residual value liabilities <sup>6</sup>	9,829	9,556
Deferred service revenue <sup>6</sup>	13,049	11,362
Refund liabilities <sup>6</sup>	1,265	1,454
Advances from customers <sup>6</sup>	2,215	2,021
Outstanding interest and currency risk derivatives <sup>5</sup>	440	195
Other liabilities	4,390	3,533
<b>B/S Total other liabilities</b>	<b>36,311</b>	<b>32,949</b>

22:2

- 1 Including the hybrid bond of EUR 1,5 billion. This bond consists of two tranches, EUR 0.9 billion with a first call in 2020 and final maturity in 2075 and EUR 0.6 billion with a first call in 2023 and final maturity in 2078.
- 2 Loans to finance the credit portfolio in Financial Services amounted to SEK 50,142 M (43,743) in bond loans and SEK 28,538 M (25,264) in other loans.
- 3 Non-current loans of SEK 12,521 M (10,685) were secured by assets pledged. » **Read more in Note 23** Assets pledged.
- 4 » **Read more in Note 31** Changes in Volvo Group Financial Reporting 2019. The opening balance for 2019 is restated due to the implementation of IFRS 16. Part of lease liabilities were included in the 2018 annual report as finance leases.
- 5 » **Read more in Note 30** Financial instruments, table 30:1 regarding non-current part of outstanding interest and currency risk derivatives.
- 6 » **Read more in Note 7** Revenue regarding contract and refund liabilities, and sales with residual value commitments.

Maturity		
Year	Bond loans and other loans	Not utilized non-current credit facilities
2021	47,299	5,000
2022	20,883	1,522
2023	10,165	–
2024	3,637	36,518
2025	989	–
2026 or later	18,644	–
<b>Total</b>	<b>101,616</b>	<b>43,039</b>

22:3

» Read more in Note 14 Leasing, table 14:5 for maturities of non-current lease liabilities.

» Read more in Note 15 Customer-financing receivables, table 15:2 for maturities of non-current customer-financing receivables.

The Volvo Group issued a hybrid bond in 2014, amounting to EUR 1.5 billion with an original maturity of 61.6 years, in order to further strengthen the Volvo Group's balance sheet and prolong the maturity structure of the debt portfolio. The predominant part of non-current loans that mature in 2021 is an effect of the Volvo Group's normal business cycle, with shorter duration in the Financial Services portfolio compared to Industrial Operations.

Granted but not utilized credit facilities consist of stand-by facilities for loans. A fee is charged for granted credit facilities and recognized in the income statement within other financial income and expenses.

» Read more in Note 9 Other financial income and expenses.

#### Current liabilities

Current bond loans and other loans	Dec 31, 2019	Dec 31, 2018
Bond loans	31,759	26,657
<b>B/S Total bond loans<sup>1,2</sup></b>	<b>31,759</b>	<b>26,657</b>
Other loans	22,254	21,382
Lease liabilities <sup>3</sup>	1,755	199
Revaluation of outstanding derivatives to SEK <sup>4</sup>	367	408
<b>B/S Total other loans<sup>1,2</sup></b>	<b>24,377</b>	<b>21,989</b>

22:4

<sup>1</sup> Loans to finance the credit portfolio in Financial Services amounted to SEK 31,759 M (26,473) in bond loans and SEK 20,772 (16,545) in other loans.

## 23 ASSETS PLEDGED

Assets pledged	Dec 31, 2019	Dec 31, 2018
Property, plant and equipment mortgages	70	70
Assets under operating leases	317	241
Customer-financing receivables	20,834	15,677
<b>Total assets pledged</b>	<b>21,220</b>	<b>15,988</b>

23:1

<sup>2</sup> Current loans of SEK 5,516 M (4,688) were secured by assets pledged.

» Read more in Note 23 Assets pledged.

<sup>3</sup> » Read more in Note 31 Changes in Volvo Group Financial Reporting 2019. The opening balance for 2019 is restated due to the implementation of IFRS 16. Part of lease liabilities were included in the 2018 annual report as finance leases.

<sup>4</sup> » Read more in Note 30 Financial instruments, table 30:1 regarding current part of outstanding interest and currency risk derivatives.

Other current loans include current maturities of non-current loans of SEK 15,512 M (13,979).

Other current liabilities	Dec 31, 2019	Dec 31, 2018
Advances from customers <sup>1</sup>	5,493	4,505
Wages, salaries and withholding taxes	11,957	12,012
VAT liabilities	3,358	3,140
Accrued expenses for dealer bonuses and rebates <sup>1</sup>	6,647	6,211
Other accrued expenses	11,867	10,995
Deferred leasing income <sup>1</sup>	3,036	2,681
Deferred service revenue <sup>1</sup>	3,371	2,908
Other deferred income <sup>1</sup>	1,184	1,067
Residual value liabilities <sup>1</sup>	4,775	4,691
Refund liabilities <sup>1</sup>	461	458
Other financial liabilities	155	233
Interest and currency risk derivatives <sup>2</sup>	140	138
Other liabilities	5,059	4,961
<b>B/S Total other liabilities</b>	<b>57,502</b>	<b>53,999</b>

22:5

<sup>1</sup> » Read more in Note 7 Revenue regarding contract and refund liabilities, and sales with residual value commitments.

<sup>2</sup> » Read more in Note 30 Financial Instruments, table 30:1 regarding current part of outstanding interest and currency risk derivatives.

Table 22:5 presents the Volvo Group's other current liabilities. In addition to this, non interest-bearing current liabilities also include trade payables of SEK 66,866 M (73,630) and current tax liabilities of SEK 3,493 M (3,749). A reclassification has been made during 2019 from trade payables to liabilities held for sale of SEK 4,774 M, » Read more in Note 3 Acquisitions and divestments of shares in subsidiaries.

Non interest-bearing current liabilities amounted to SEK 138,267 M (131,378), or 71% (73) of the Volvo Group's total current liabilities.

Non-current and current loans of SEK 18,037 M (15,373) were secured by assets pledged to an amount of SEK 21,220 M (15,988).

Under the terms of asset-backed securitizations, SEK 17,766 M (15,144) of securities have been issued tied to US-based loans, secured by customer-financing receivables, SEK 20,834 M (15,677), recognized on the balance sheet with trucks and construction equipment assets as collaterals, whereof SEK 12,876 M (9,423) were signed in 2019.

» Read more in Note 22 Liabilities.

# 24

## CONTINGENT LIABILITIES



### ACCOUNTING POLICY

#### Contingent liabilities

A contingent liability is recognized for a possible obligation, for which it is not yet confirmed that a present obligation exists that could lead to an outflow of resources. Alternatively, there is a present obligation that does not meet the definitions of a provision or a liability as it is not probable that an outflow of resources will be required to settle the obligation or a sufficiently reliable estimate of the amount of the obligation cannot be made.

Contingent liabilities	Dec 31, 2019	Dec 31, 2018
Credit guarantees issued for customers and others	2,944	2,435
Tax claims	4,653	4,929
Residual value commitments	1,118	1,766
Other contingent liabilities	5,017	5,117
<b>Total contingent liabilities</b>	<b>13,732</b>	<b>14,247</b>

24:1

Total contingent liabilities at December 31, 2019, amounted to net SEK 13,732 M (14,247) and included no contingent assets.

*Credit guarantees issued* amounted to SEK 2,944 M (2,435). The recognized amount for credit guarantees corresponds to the gross exposure and has not been reduced by the value of counter guarantees received or other collaterals such as the right to repossess the products. The value of counter guarantees and other collaterals reducing the exposure is dependent on the development of used products prices and on the possibility to repossess the products.

A major part of the credit guarantees pertains to the credit guarantees related to Chinese dealers and retail customers within Construction Equipment. The increase compared to last year is mainly an effect of higher sales in Construction Equipment in China.

*Tax claims* amounted to SEK 4,653 M (4,929) and pertain to charges against the Volvo Group for which the criteria for recognizing a tax liability or a provision were not met. Global companies such as the Volvo Group are occasionally involved in tax processes of varying scope and in various stages. Volvo Group regularly assesses these tax processes. When it is probable that additional taxes must be paid and the outcome can be reasonably estimated, the required provision is made. Out of total tax claims, SEK 1.8 billion (1.8) is related to a transfer price audit in Brazil and SEK 1.2 billion (1.1) to a custom duties audit in India.

*Residual value commitments* amounted to SEK 1,118 M (1,766) and were attributable to sales transactions with residual value commitments (buy-backs and tradebacks) that are independent from the sales transaction and therefore not recognized as assets in the balance sheet. The amount corresponds to the gross exposure and has not been reduced by the estimated net selling price of used products taken as collaterals. To the extent the used products pertaining to those transactions are expected to be disposed at a loss, a provision for residual value risk is recognized.

» Read more in Note 21 Other provisions about provisions for residual value risks.

*Other contingent liabilities* amounted to SEK 5,017 M (5,117) and include for example bid and performance clauses and legal proceedings.

#### Legal proceedings

In January 2011, the Volvo Group and a number of other companies in the truck industry became part of an investigation by the European Commission regarding a possible violation of EU antitrust rules. The Volvo Group co-operated fully with the European Commission in the investigation. In July 2016, the Volvo Group reached a settlement with the European Commission in the investigation. Following the adoption of the European Commission's settlement decision, the Volvo Group has received and will be defending itself against numerous private damages claims brought by customers and other third parties alleging that they suffered loss by reason of the conduct covered in the decision. The claims are being brought in various countries by claimants either acting individually or as part of a wider group or class of claimants. Further claims are likely to be commenced. At this stage, it is not possible to make a reliable estimate of any liability that could arise from any such proceedings. An adverse outcome or outcomes of some or all of the litigation, depending on the nature and extent of such outcomes, may have a material impact on the Volvo Group's financial results.

The Volvo Group is also involved in a number of legal proceedings other than those described above. The Volvo Group's assessment is that such other legal proceedings in aggregate are not likely to entail any risk of having a material effect on the Volvo Group's financial position.

#### Detected premature degradation of emissions control component

The Volvo Group has detected that an emissions control component used in certain markets and models, may degrade more quickly than expected, affecting the vehicles emission performance negatively. The Volvo Group has made a provision that will be continuously assessed as the matter develops.

» Read more in Note 21 Other provisions.

# 25

## TRANSACTIONS WITH RELATED PARTIES



### ACCOUNTING POLICY

The Volvo Group engages in transactions with some of its related parties, such as associated companies, joint ventures and other related companies. The transactions arise in the ordinary course of business and are conducted on commercial terms and market prices. It mainly consist of sales of vehicles, parts, equipment and services as well as purchases of parts, engines and vehicles for resale. Transactions between AB Volvo and its subsidiaries have been eliminated in the Group and are not disclosed in this note. Transactions with Board of Directors or Group Executive Board consist of remunerations, which are disclosed in note 27 Personnel.

» Read more in **Note 5** Investments in joint ventures, associated companies and other shares and participations.

» Read more in **Corporate Governance Report** about Board of Directors and Group Executive Board.

The Volvo Group's transactions with related parties are presented in table 25:1 and 25:2.

	Sales of goods, services and other income		Purchases of goods, services and other expense	
	2019	2018	2019	2018
Associated companies	2,569	1,544	142	100
Joint ventures	1,709	1,695	891	1,023
Other related companies	105	96	864	853

25:1

	Receivables		Payables	
	31 Dec, 2019	Dec 31, 2018	Dec 31, 2019	Dec 31, 2018
Associated companies	595	290	73	33
Joint ventures	214	353	38	166
Other related companies	118	80	402	252

25:2

# 26

## GOVERNMENT GRANTS



### ACCOUNTING POLICY

Government grants are financial grants from governmental or supra-national bodies that is received in exchange for fulfillment of certain conditions by the Volvo Group.

Government grants related to assets are presented in the balance sheet either as deferred income or as a deduction of the carrying amount of the related assets. Government grants related to income are reported as a deferred income in the balance sheet and recognized in the income statement to match the related costs. If the costs are incurred before the grants have been received, but there is an agreement that grants will be received, grants are recognized in the income statement to match the related costs.

In 2019, government grants of SEK 746 M (649) were received, and SEK 890 M (636) were recognized in the income statement. The amount includes tax credits of SEK 411 M (371) related to product development, which were primarily received in France and in the United States. Other grants were mainly received from Swedish, Chinese and US governmental organizations and from the European Commission.

# 27

## PERSONNEL



### ACCOUNTING POLICY

#### *Incentive programs*

The Volvo Group has a long-term and a short-term incentive program that is accounted for in accordance with IAS 19 Employee benefits. During the vesting period, the incentive program is recognized as an expense and as a short-term liability.

The Volvo Group also has a share-based incentive program for the year 2015. The fair value of the equity-settled payments is determined at the grant date, recognized as an expense during the vesting period and offset in equity. The fair value is based on the share price reduced by dividends connected with the share during the vesting period.

The cash-settled payment is revalued at each balance sheet date and is recognized as an expense during the vesting period and as a short-term liability.

#### **Remuneration policy decided at the Annual General Meeting in 2019**

The Annual General Meeting of 2019 decided upon a policy on remuneration and other employment terms for the members of the Volvo Group Executive Board. The decided principles are summarized as follows:

The remuneration and the other terms of employment of the Executives shall be competitive so that the Volvo Group can attract and retain competent Executives. The total remuneration to Executives consists of fixed salary, short-term and long-term incentives, pension and other benefits. Short-term and long-term incentives shall be linked to predetermined and measurable criteria relating to EBIT and cash flow targets for the Volvo Group, devised to promote the long-term value creation of the Volvo Group and strengthen the link between achieved performance targets and rewards. The criteria for short-term and long-term incentives shall be determined by the Board annually.

Short-term incentive may, as regards the President & CEO, amount to a maximum of 100% of the fixed salary and, as regards other Executives, a maximum of 80% of the fixed salary.

Long-term incentive may, as regards the President & CEO, amount to a maximum of 100% of the fixed salary and, as regards other Executives, a maximum of 80% of the fixed salary. The long-term incentive program for the Volvo Group's top executives, including the Executives, is cash-based. Awards under the program, based on how well the performance targets are achieved, are disbursed in cash to the participants on the condition that they invest the net award in AB Volvo shares and that they retain the shares for at least three years. In addition, the Executives should be required to accrue (if they do not already have such a holding) and retain a holding of AB Volvo shares with a market value of at least one year's pre-tax fixed salary (two years' for the President and CEO), subject to a right for the Board of Directors to grant such exceptions as the Board deems appropriate. For the avoidance of doubt, Executives shall not be under any obligation to purchase additional shares, other than those purchased in connection with the long-term incentive program, to satisfy the accrual and retention requirement.

Any new share-based incentive program will, where applicable, be resolved by the General Meeting, but no such program is currently proposed.

For Executives resident in Sweden, the notice period upon termination by the company shall not exceed 12 months and the notice period upon termination by the Executive shall not exceed 6 months. In addition, in the event of termination by the company, the Executive may be entitled to a maximum of 12 months' severance pay.

Executives resident outside Sweden or resident in Sweden but having a material connection to or having been resident in a country other than

Sweden may be offered notice periods for termination and severance payment that are competitive in the country where the Executives are or have been resident or to which the Executives have a material connection, preferably solutions comparable to the solutions applied to Executives resident in Sweden.

The Board of Directors may deviate from this policy if there are special reasons to do so in an individual case.

#### **Fees paid to the Board of Directors**

According to a resolution adopted at the Annual General Meeting 2019, fees to the Board of Directors appointed at the Annual General Meeting for the period until the close of the Annual General Meeting 2020 shall be paid as follows: The Chairman of the Board should be awarded SEK 3,600,000 (3,500,000) and each of the other members SEK 1,060,000 (1,030,000) with exception of the President and CEO of AB Volvo, who does not receive a director's fee. In addition, SEK 380,000 (360,000) should be awarded to the Chairman of the Audit Committee and SEK 175,000 (165,000) to each of the other members of the Audit Committee, and SEK 160,000 (150,000) to the Chairman of the Remuneration Committee and SEK 115,000 (110,000) to each of the other members of the Remuneration Committee. Finally, SEK 190,000 (180,000) should be awarded to the Chairman of the Technology and Business Transformation Committee and to the other members of the Technology and Business Transformation Committee SEK 160,000 (155,000) each.

#### **Terms of employment and remuneration to the CEO**

##### *Fixed salary, short-term and long-term incentives*

The President and CEO is entitled to a remuneration consisting of a fixed annual salary and short-term and long-term incentives. During the financial year 2019, the short-term and long-term incentives are based on EBIT and cash flow for the Volvo Group. The short-term and long-term incentives, each, amounts to a maximum of 100% of the annual base salary.

For the financial year 2019, Martin Lundstedt received a fixed salary including vacation payment of SEK 14,924,697 (14,578,361) and a short-term incentive of SEK 13,066,469 (12,471,729). The short-term incentive was 88.8% (87.7) of the annual base salary. Other benefits, mainly pertaining to car and housing, amounted to SEK 369,530 (300,184) in 2019. Martin Lundstedt participated in the long-term share-based incentive program decided by the Annual General Meeting 2014. During 2019, 19,577 (0) shares granted under the 2015 program corresponding to a taxable value of SEK 2,531,187 (0) have been allotted.

Martin Lundstedt was also participating in the long-term incentive program decided by the Board of Directors in 2019. During the financial year the outcome of the long-term incentive program amounted to SEK 13,802,062 (10,018,624), which was 93.8% (70.5) of the base salary. The full net amount shall be invested in Volvo B shares. There is to be no pay-out of the amount if the Annual Meeting held in 2020 decides not to distribute any dividends to the shareholders for 2019.

##### *Pensions*

The President and CEO is covered both by pension benefits provided under collective bargain agreements and by the Volvo Management Pension (VMP) and Volvo Executive Pension (VEP) plans. Both VMP and VEP are defined contribution plans. The pensionable salary consists of the annual salary, vacation payment and a calculated short-term variable pay. The premium for the VMP plan is SEK 30,000 per year plus 20% of pensionable salary over 30 income base amounts and the premium for the VEP plan is 10% of pensionable salary. There are no commitments other than the payment of the premiums. In addition to the collective bargain agreement (ITP), the disability pension is 25% of salary between 7.5 price base amounts and 20 income base amounts, 37.5% of salary between



20–30 income base amounts and 50% of base salary above 30 income base amounts. The right to disability pension is conditional to employment and will cease upon termination of employment.

The President and CEO is also covered by Volvo Företagspension, a defined contribution plan for additional retirement benefits. The premium is negotiated each year. For 2019, the premium amounted to SEK 8,280 (8,016) for the full year.

Total pension premiums for Martin Lundstedt amounted to SEK 6,916,015 (6,084,607) in 2019.

#### *Severance payments*

Martin Lundstedt has a 12 months notice period upon termination by AB Volvo and a 6 months notice period upon termination on his own initiative. If terminated by the company, Martin Lundstedt is entitled to a severance payment equivalent to 12 months' salary. In the event of new employment during the severance period, the severance pay is reduced with an amount equal to 100% of the income from the new employment.

#### **Remuneration to the Group Executive Board**

##### *Fixed salary, short-term and long-term incentives*

Members of the Group Executive Board receive short-term and long-term incentives in addition to fixed salaries. During the financial year 2019, the short-term and long-term incentives are based on EBIT and cash flow for the Volvo Group. In 2019, short-term and long-term incentives, for Group Executive Board members excluding the CEO, could each amount to a maximum of 80% of the annual base salary.

For the financial year 2019, fixed salaries amounted to SEK 82,951,795 (73,510,127) and a compensation in connection with employment in the Group amounted to SEK 3,000,000 (4,590,000). Short-term incentive amounted to SEK 56,751,686 (49,954,990) for Group Executive Board members excluding the CEO. The short-term incentive was in average 69.0% (69.3) of the annual base salary. The Group Executive Board comprised, excluding the CEO, of 13 (12) members at the beginning and 13 (13) at the end of the year. Other benefits, including company cars, housing and costs for a change of tax status of an expatriate, amounted to SEK 21,070,469 (12,575,800) in 2019.

Group Executive Board members participated in the long-term share-based incentive program decided by the Annual General Meeting 2014. During 2019, 73,508 (132,808) shares granted under the 2015 program corresponding to a taxable value of SEK 7,669,435 (20,295,124) have been allotted to Group Executive Board members.

The Group Executive Board also participated in the long-term incentive program decided by the Board of Directors in 2019. During the financial year the outcome of the long-term incentive program for the Group Executive Board members, excluding the CEO, amounted to SEK 61,737,045 (40,610,751) of which the full net amount shall be invested in Volvo B shares. The long-term incentive was 75.0% (56.4) of the annual base salaries. There is to be no pay-out of the amount if the Annual Meeting held in 2020 decides not to distribute any dividends to the shareholders for 2019.

#### *Pensions*

Group Executive Board members enrolled in the Swedish pension plan are also covered by a defined contribution plan, Volvo Executive Pension (VEP) plan with pension premium payments at the longest to the age of 65 years. The premium is 10% of pensionable salary. As a complement to the collective bargaining agreement regarding occupational pension, members of the Group Executive Board enrolled in the Swedish pensions plan and who are born before 1979 are also covered by a defined contribution pension plan, Volvo Management Pension (VMP). The premium is SEK 30,000 per year plus 20% of pensionable salary over 30 income

base amounts. The pensionable salary consists of the annual salary, vacation payment and a calculated short-term variable pay. Pension premiums for the Group Executive Board, excluding the CEO, amounted to SEK 28,993,736 (24,857,202) in 2019.

#### *Severance payments*

The employment contracts for Group Executive Board members contain rules governing severance payments when the company terminates the employment. For Executives resident in Sweden, the notice period upon termination by the company shall not exceed 12 months and the notice period upon termination by the Executive shall not exceed 6 months. In addition, in the event of termination by the company, the Executive is entitled to a maximum of 12 months' severance pay.

Executives resident outside Sweden or resident in Sweden but having a material connection to or having been resident in a country other than Sweden may be offered notice periods for termination and severance payment that are competitive in the country where the Executives are or have been resident or to which the Executives have a material connection, preferably solutions comparable to the solutions applied to Executives resident in Sweden.

#### **Volvo Group's total costs for remuneration and benefits to the Group Executive Board**

The total costs for remuneration and benefits to the Group Executive Board amounted to SEK 375 M (313) and pertained to fixed salary, short-term and long-term incentives, other benefits and pensions. It also included social fees on salaries and benefits, special payroll tax and additional costs for other benefits. The cost related to the long-term share-based incentive program is reflected over the vesting period and amounted to SEK –2 M (1) for 2019. The remuneration model of the Volvo Group is to a main part designed to follow changes in the profitability of the Group.

#### **Long-term incentive programs**

##### *Long-term share-based incentive program 2014-2015*

The Annual General Meeting held in 2014 approved a long-term share-based incentive program for up to 300 Group and Senior Executives and comprising the years 2014 to 2016. In 2016 the Board of Director's approved this program to be replaced by a new program as from 2016 with the effect of terminating current program one year in advance. During 2019, the program was terminated and all of the remaining shares granted under the programs have been allotted to the participants.

##### *Long-term incentive program valid from 2016*

The Board of Directors have in 2016 approved a long-term cash-based incentive program comprising the top 300 Executives in the Volvo Group. This program replaces the previous long-term share-based incentive program approved in 2014. A prerequisite for participation in the program is that the participants shall undertake to invest the annual net (after tax) payout amounts under the plan in Volvo B-shares and to hold those shares for at least three years.

Long-term incentive may, as regards the President & CEO, amount to a maximum of 100% of the fixed salary and, as regards other Executives, a maximum of 80% of the fixed salary. There will however be no payout under the long-term incentive program if the Annual General Meeting that is held in the year following the performance year, decides not to distribute any dividends to the shareholders.



Long-term share-based incentive program (equity-settled version)	Shares granted conditional under the plan but not yet allotted (in thousand shares)						Cost 2019 (SEK M) <sup>1</sup>
	Year of allotment	Beginning of the year	Adjustment	Cancelled/ forfeited 2019	Allotments during 2019	End of the year	
Year 2015 incentive program	2018/2019	550	–	2	–552	–	3.9
<b>Total</b>		<b>550</b>	<b>–</b>	<b>2</b>	<b>–552</b>	<b>–</b>	<b>3.9</b>

27:1

<sup>1</sup> The fair value of the payments is determined based on the share price at the grant date reduced by the discounted value of expected dividends connected with the share during the vesting period. The cost for the program is recognized over the vesting period. The cost includes social security cost.

The cost for the cash-settled version of the incentive program amounted to SEK 1 M (3) including social security cost during 2019. During 2019 the program has been terminated, and therefore there is no liability remaining.

The allotment during the year 2019 pertained to the shares granted under the program during the year 2015. During 2019, for the equity-

settled plan a total of 552,069 shares (1,063,270) have been allotted to participants. For the cash-settled plan, a total of SEK 9 M (23) have been allotted during 2019.

Average number of employees	2019		2018	
	Number of employees	of which women, %	Number of employees	of which women, %
<b>AB Volvo</b>				
Sweden	325	54	309	51
<b>Subsidiaries</b>				
Sweden	20,267	22	19,729	22
Western Europe (excl. Sweden)	21,864	17	21,456	17
Eastern Europe	7,103	21	6,860	21
North America	17,880	20	17,053	20
South America	5,865	17	5,371	16
Asia	17,724	14	17,510	14
Other countries	2,702	18	2,556	17
<b>Group total</b>	<b>93,731</b>	<b>18</b>	<b>90,844</b>	<b>18</b>

27:2

Board members <sup>1</sup> and other senior executives	2019		2018	
	Number at year-end	of which women, %	Number at year-end	of which women, %
<b>AB Volvo</b>				
Board members <sup>1</sup>	10	40	10	40
CEO and other senior executives	14	29	14	29
<b>Volvo Group</b>				
Board members <sup>1</sup>	517	25	520	24
Presidents and other senior executives	591	26	628	25

27:3

<sup>1</sup> Excluding deputy Board members.

Wages, salaries and other remunerations SEK M	2019			2018		
	Board and Presidents	of which variable salaries	Other employees	Board and Presidents	of which variable salaries	Other employees
AB Volvo <sup>1</sup>	51.4	21.1	420.0	49.1	22.5	404.3
Subsidiaries	912.3	193.9	47,216.7	838.0	213.2	44,691.1
<b>Group total</b>	<b>963.7</b>	<b>215.0</b>	<b>47,636.7</b>	<b>887.2</b>	<b>235.7</b>	<b>45,095.4</b>

27:4

Wages, salaries and other remunerations and social costs SEK M	2019			2018		
	Wages, salaries remuneration	Social costs	Pension costs	Wages, salaries remuneration	Social costs	Pension costs
AB Volvo <sup>2</sup>	471.4	143.5	184.7	453.5	134.0	286.4
Subsidiaries	48,129.0	10,416.1	4,846.3	45,529.1	9,547.3	4,048.1
<b>Group total<sup>3</sup></b>	<b>48,600.4</b>	<b>10,559.6</b>	<b>5,031.0</b>	<b>45,982.6</b>	<b>9,681.3</b>	<b>4,334.5</b>

27:5

1 Including current and former Board members, Presidents and Executive Vice Presidents.

2 The parent company's pension costs, pertaining to Board members and Presidents are disclosed in note 3 Administrative expenses in the annual report of the parent company.

3 Of the Volvo Group's pension costs, SEK 94 M (79) pertain to Board members and Presidents, including current and former Board members, Presidents and Executive Vice Presidents. The Volvo Group's outstanding pension obligations to these individuals amount to SEK 670 M (659). The cost for non-monetary benefits in the Volvo Group amounted to SEK 3,336 M (3,175) of which SEK 54 M (43) pertained to Board members and Presidents. The cost for non-monetary benefits in the parent company amounted to SEK 11.9 M (12.7) of which SEK 0.6 M (0.3) to Board members and Presidents.

## 28 FEES TO THE AUDITORS

Fees to the auditors	2019	2018
Deloitte		
– Audit fees	108	94
<i>whereof to Deloitte AB</i>	29	27
– Audit-related fees	6	5
<i>whereof to Deloitte AB</i>	3	2
– Tax advisory services	1	2
<i>whereof to Deloitte AB</i>	–	0
– Other fees	4	2
<i>whereof to Deloitte AB</i>	1	0
PricewaterhouseCoopers		
– Audit fees	–	8
<i>whereof to PricewaterhouseCoopers AB</i>	–	1
– Audit-related fees	–	1
<i>whereof to PricewaterhouseCoopers AB</i>	–	1
– Tax advisory services	–	2
<i>whereof to PricewaterhouseCoopers AB</i>	–	–
– Other fees	–	1
<i>whereof to PricewaterhouseCoopers AB</i>	–	–
<b>Total</b>	<b>119</b>	<b>115</b>
Audit fees to others	2	1
<b>Volvo Group Total</b>	<b>121</b>	<b>116</b>

28:1

The audit assignment involves review of the Annual report and financial accounting and the administration by the Board and the President. Audit-related assignments mean quality assurance services required by enactment, articles of association, regulations or agreement. The amount includes the fee for reviewing the half-year report. Tax services include both tax consultancy and tax compliance services. All other tasks are defined as other.

## 29 CASH FLOW



### ACCOUNTING POLICY

#### Cash flow analysis

The cash flow statement is prepared in accordance with the indirect method. The cash flow of foreign group companies are translated at average rates. Changes in group structure, acquisitions and divestments are recognized net, excluding cash and cash equivalents, and are included in cash flow from investing activities, in the item Acquired and divested operations.

» Read more in Note 18 Cash and cash equivalents.

Other non-cash items	2019	2018
Allowance for expected credit losses on accounts receivables/customer-financing receivables	962	722
Capital gains/losses on divested operations <sup>1</sup>	–1,590	–6
Unrealized exchange rate gains/losses on accounts receivables and payables	–76	67
Unrealized exchange rate gains/losses on other operating assets and liabilities	119	367
Provision for profit sharing program	550	554
Provision for incentive programs	1,860	1,724
Gains/losses on sale of in-/tangible assets	–634	–422
Gains/losses on sale of shares and participations <sup>2</sup>	–222	–824
Income from investments in joint ventures	–1,860	–1,131
Anticipated loss in long-term contracts within defense operation	–	102
Service cost related to pensions	1,911	1,655
Provision for emission control component <sup>3</sup>	–	7,000
Deferring of sales with residual value commitments <sup>4</sup>	–3,903	–
Other changes	114	–147
<b>Total other non-cash items</b>	<b>–2,769</b>	<b>9,661</b>

29:1

1 In 2019 Volvo Group divested the majority of the shares in WirelessCar with a capital gain of SEK 1.6 billion.

2 In 2019 Volvo Group divested all shares in Terratech AB with a capital gain of SEK 199 M.

In 2018 Volvo Group divested shares in Inner Mongolia North Hauler Joint Stock Co., Ltd (NHL) with a capital gain of SEK 818 M.

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations, about income/loss from investments in joint ventures and associated companies.

3 In 2018 a provision of SEK 7.0 billion was made for estimated costs to address the issue of an emission control component.

» Read more in Note 21 Other provisions.

4 As from 2019, sales with residual value commitments, which is deferred over the contract period, is adjusted as an other non-cash item.

» Read more in Note 7 Revenue.

Investments and divestments of shares, net	2019	2018
New issue of shares	–	–2
Capital contribution	–102	–1
Acquisitions	–93	–7
Divestments	288	1,018
Other	–1	–38
<b>Total cash flow from investments and divestments of shares, net</b>	<b>92</b>	<b>970</b>

29:2

In 2019 Volvo Group divested all shares in Terratech AB. The sale generated a positive cash flow of SEK 250 M.

In 2018 Volvo Group divested shares in Inner Mongolia North Hauler Joint Stock Co., Ltd (NHL) which generated a positive cash flow of SEK 1.0 billion.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations, about divested shares in Inner Mongolia North Hauler Joint Stock Co., Ltd (NHL).

Acquired and divested operations, net	2019	2018
Acquired subsidiaries and other business units	–	–200
Divested subsidiaries and other business units	1,343	30
<b>Total cash flow from acquired and divested operations, net</b>	<b>1,343</b>	<b>–170</b>

29:3

In 2019, Volvo Group divested the majority of the shares in WirelessCar. The sale generated a positive cash flow of SEK 1.3 billion.

» **Read more in Note 3** Acquisitions and divestments of shares in subsidiaries, about the effect on net financial position from the acquisitions and divestments.

#### Changes in loans 2019

	December 31, 2018	Transition effect IFRS 16 <sup>1</sup>	Cash flows		Non-cash items			December 31, 2019
			New borrowings	Amortizations	Reclassifications <sup>2</sup>	Unrealized currency effects	Currency translation	
Current bond loans and other loans	48,646	1,525	29,967	–61,166	35,174	–706	2,694	56,135
Non-current bond loans and other loans	87,210	4,684	49,498	–7,871	–35,182	748	2,528	101,616
Interest and currency risk derivatives	–2,966	–	–	–	–	1,639	–	–1,328
Realized derivatives	–	–	–	946	–	–	–	–
Other	–	–	–1,913 <sup>3</sup>	–121	–	–	–	–
<b>Cash flow impact from changes in loans</b>			<b>77,553</b>	<b>–68,212</b>	<b>–7</b>			

#### Changes in loans 2018

	December 31, 2017	Cash flows		Non-cash items			December 31, 2018
		New borrowings	Amortizations	Reclassifications	Unrealized currency effects	Currency translation	
Current bond loans and other loans	53,771	60,340	–98,181	30,834	–739	2,621	48,646
Non-current bond loans and other loans	73,904	47,367	–6,635	–30,834	649	2,759	87,210
Interest and currency risk derivatives	–2,957	–	–	–	–9	–	–2,966
Realized derivatives	–	–	–624	–	–	–	–
Other	–	–	–324	–	–	–	–
<b>Cash flow impact from changes in loans</b>		<b>107,707</b>	<b>–105,764</b>	<b>–</b>			

29:4

1 » **Read more in Note 31** Changes in Volvo Group Financial Reporting 2019. The opening balance for 2019 is restated due to the implementation of IFRS 16.

2 During 2019, SEK 7 M have been reclassified from current and non-current other loans to liabilities held for sale.

3 During 2019, new lease liabilities of SEK 1.9 billion were adjusted as non-cash items.

Net borrowings increased by SEK 9.3 billion (1.9) mainly as an effect of higher business volume in Financial Services.

Syndications were performed in Financial Services to an amount of SEK 11.4 billion (7.5). All syndications impacted cash flow this year.

» **Read more in Note 22** Liabilities regarding Current loans and Non-current loans.

» **Read more in Board of Directors report** about Cash flow statement and Financial position.



# 30

## FINANCIAL INSTRUMENTS



### ACCOUNTING POLICY

Purchases and sales of financial assets and liabilities are recognized on the transaction date. Transaction expenses are included in the assets' fair value, except in cases in which the change in value is recognized in the income statement. The transaction costs that arise in conjunction with the admission of financial liabilities are amortized over the term of the loan as financial cost.

A financial asset is derecognized from the balance sheet at maturity and when all significant risks and benefits related to the asset have been transferred to a third party.

The fair value of financial assets is determined based on valid market prices, when available. If market prices are unavailable, the fair value is determined for each asset through the use of various measurement techniques.

Financial instruments are classified based on the degree that market values have been utilized when measuring fair value. The majority of financial instruments measured at fair value held by Volvo Group are classified as level 2. The valuation of level 2 instruments is based on market conditions using quoted market data existing at each balance sheet date. The basis for the interest is the zero-coupon-curve in each currency which is used to calculate the present value of all the estimated future cash flows. For forward exchange contracts the basis is the forward premium based on current spot rate for each currency and future date. The fair value is then discounted based on the forward rates as per the balance sheet date. Shares and participations are classified as level 1 for listed shares and level 3 for non-listed shares. Call options are classified as level 3 and are based on the Black & Scholes option pricing formula.

#### Financial assets measured at amortized cost

Customer-financing receivables are held as part of a business model whose objective is of collecting contractual cash flows. The contractual cash flows are solely payments of principal and interest and are valued at amortized cost in accordance with the effective interest method. In this category the Volvo Group also includes accounts receivables and holding of shares in non-listed companies for which a fair value cannot reasonably be determined. The carrying value for financial assets measured at amortized cost is a reasonable approximation of the fair value. The carrying value has been analyzed and compared with an estimated fair value and is a reasonable approximation of the fair value.

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations.

» Read more in Note 15 Customer-financing receivables.

» Read more in Note 16 Receivables.

#### Financial assets measured at fair value through other comprehensive income

In this category the Volvo Group includes holding of shares in listed companies as the shares are not held for trading. Changes in fair value is measured through other comprehensive income and amounted to SEK 48 M (34).

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations.

#### Financial assets and liabilities measured at fair value through the income statement

Volvo Group's financial assets and liabilities held for trading are recognized at fair value through the income statement. As presented in table 30:1, these instruments are derivatives, used for hedging interest and currency risks and marketable securities, further presented in note 18 Cash and cash equivalents.

Derivatives used for hedging interest rate exposure in the customer-financing portfolio within Financial Services as well as the debt portfolio in Industrial Operations are included in this section. Unrealized gains and losses from fluctuations in the fair value of the financial instruments are recognized in other financial income and expenses. The Volvo Group intends to hold these derivatives to maturity, which is why, over time, the market valuation will be offset by the interest-rate fixing on borrowing and lending in Financial Services, and thus not affect net income or cash flow.

Financial instruments used for hedging currency risks arising from future firm commercial cash flows are also recognized in this section. Realized result and unrealized revaluation of derivatives are recognized in other financial income and expenses to be able to net all internal flows before entering into external derivatives to hedge future currency risk. When hedging future cash flows for specific orders the classification in the income statement is decided on a case by case basis. In 2019, gains and losses from derivatives hedging currency risks for specific orders of SEK -35 M (-6) have been recognized in operating income and SEK -54 M (-42) in other financial income and expenses.

» Read more in Note 9 Other financial income and expenses.

Hedge Accounting is not applied by the Volvo Group.

#### Information regarding carrying amounts and fair values

In table 30:1, carrying amounts are compared with fair values for all of the Volvo Group's financial instruments.

Carrying amounts and fair values on financial instruments SEK M		Dec 31, 2019		Dec 31, 2018	
		Carrying value	Fair value	Carrying value	Fair value
<b>Assets</b>					
<b>Financial assets measured at fair value through the income statement<sup>1</sup></b>					
Interest and currency risk derivatives <sup>2</sup>	Note 16	2,015	2,015	3,807	3,807
Other derivatives <sup>3</sup>		564	564	564	564
<b>B/S</b> Marketable securities	Note 18	200	200	160	160
		2,779	2,779	4,532	4,532
<b>Financial assets measured at fair value through other comprehensive income</b>					
Holding of shares in listed companies <sup>1</sup>	Note 5	–	–	496	496
<b>Financial assets measured at amortized cost</b>					
<b>B/S</b> Accounts receivables	Note 16	37,723	37,723	41,906	41,906
Customer-financing receivables	Note 15	147,127	147,127	126,927	126,927
Holding of shares in non-listed companies <sup>1</sup>	Note 5	158	158	244	244
Other interest-bearing receivables	Note 16	1,504	1,504	540	540
		186,512	186,512	169,618	169,618
<b>B/S</b> Cash and cash equivalents	Note 18	61,461	61,461	46,933	46,933
<b>Liabilities</b>					
	Note 22				
<b>Financial liabilities measured at fair value through the income statement</b>					
Interest and currency risk derivatives <sup>1,4</sup>		2,468	2,468	1,513	1,513
<b>Financial liabilities measured at amortized cost<sup>5</sup></b>					
Non-current bond loans and other loans		100,096	101,737	86,438	87,580
Current bond loans and other loans		55,768	55,822	48,239	48,295
<b>B/S</b> Trade Payables		66,866	66,866	73,630	73,630
		222,730	224,425	208,307	209,505

30:1

1 All derivatives and marketable securities are classified as level 2, shares in listed companies are classified as level 1 and shares in non-listed companies are classified as level 3. A reclassification has been made during 2019 to assets held for sale by SEK 544 M, related to shares in listed companies.

2 The Volvo Group's gross exposure from derivatives reported as assets is reduced by 89% (79) by netting agreements and cash deposits to SEK 230 M (788).

3 The input data used in the valuation model for calculating the fair value has not changed during 2019.

4 The Volvo Group's derivatives reported as liabilities is reduced by 88% (97) by netting agreements and cash deposits to SEK 285 M (50).

5 In the Volvo Group balance sheet, financial liabilities include loan-related derivatives amounting to SEK –1,888 M (–1,180). The credit risk is included in the fair value of loans.

» Read more in Note 4 Goals and policies in financial risk management.



### Derecognition of financial assets

The Volvo Group is involved in discounting activities to reduce financial risks. An evaluation is performed to establish whether substantially all the risks and rewards have been transferred to an external party when entering into an agreement. The Volvo Group's intention is not to be involved in discounting activities if not substantially all the risks and rewards can be transferred to an external party. As of December 31, 2019 there were no transferred financial assets in the Volvo Group that did not fulfill the requirements for derecognition.

Financial assets for which substantially all risks and rewards have been transferred are derecognized from the Volvo Group's balance sheet. Involvement in these assets is reflected in the Volvo Group's balance sheet as part of the external credit guarantees. They are recognized at fair value as provisions in the balance sheet and amounted to SEK 0.1 bn (0.1).

The Volvo Group's maximum loss exposure is considered being the total recourse relating to transferred assets that are part of the recognized credit

guarantees, i.e. the total amount the Volvo Group would have to pay in case of default of the customers. The likelihood for all customers going into default at the same time is considered to be low. The gross exposure for the Volvo Group amounted to SEK 2.9 bn (2.4) related to credit guarantees issued for customers and others and is part of the Volvo Group's contingent liabilities. This amount has not been reduced by the value of counter guarantees received or other collateral such as the right to repossess products.

» Read more in Note 21 Other provisions.

» Read more in Note 24 Contingent Liabilities.

### Gains, losses, interest income and interest expenses from financial instruments

Table 30:3 shows how gains and losses, as well as interest income and interest expenses have affected income after financial items in the Volvo Group divided by the different categories of financial instruments.

In the table below outstanding derivatives hedging currency and interest rate risks is presented.

Outstanding derivative instruments SEK M	Dec 31, 2019		Dec 31, 2018	
	Nominal amount	Carrying value	Nominal amount	Carrying value
<b>Interest-rate swaps</b>				
– receivable position	87,221	948	120,824	3,350
– payable position	194,399	–2,329	139,351	–1,218
<b>Forward and futures</b>				
– receivable position	–	–	–	–
– payable position	669	–19	–	–
<b>Foreign exchange derivatives</b>				
– receivable position	27,589	1,061	27,066	457
– payable position	16,695	–118	23,871	–296
<b>Options purchased</b>				
– receivable position	428	5	286	0
– payable position	–	–	307	–
<b>Options written</b>				
– receivable position	–	–	–	–
– payable position	405	–2	307	0
<b>Total</b>		<b>–453</b>		<b>2,294</b>

30:2

Recognized in operating income SEK M	2019			2018		
	Gain/ Loss	Interest income	Interest expense	Gain/ Loss	Interest income	Interest expense
<b>Financial assets and liabilities at fair value through the income statement</b>						
Currency risk derivatives <sup>1,2</sup>	-35	-	-	-6	-	-
<b>Financial assets measured at amortized cost</b>						
Accounts receivables/trade payables <sup>3</sup>	-502	-	-	-737	-	-
Customer-financing receivables <sup>4</sup>	423	7,765	-	234	6,295	-
Shares and participations in listed companies <sup>5</sup>	18	-	-	17	-	-
Shares and participations in non-listed companies <sup>5</sup>	267	-	-	16	-	-
<b>Financial liabilities measured at amortized cost<sup>6</sup></b>	-	-	-3,424	-	-	-2,508
<b>Impact on operating income</b>	<b>171</b>	<b>7,765</b>	<b>3,424</b>	<b>-476</b>	<b>6,295</b>	<b>-2,508</b>

Recognized in net financial items <sup>7,8</sup> SEK M	2019			2018		
	Gain/ Loss	Interest income	Interest expense	Gain/ Loss	Interest income	Interest expense
<b>Financial assets and liabilities at fair value through the income statement</b>						
Marketable securities	17	4	-	20	3	-
Interest and currency rate risk derivatives <sup>1,2</sup>	-3,848	11	-1,483	-1,495	-14	-1,058
<b>Financial assets measured at amortized cost</b>						
Cash and Cash equivalents	-	306	-	-	210	-
<b>Financial liabilities measured at amortized cost</b>	2,853	-	189	765	-	-242
<b>Impact on net financial items<sup>7,8</sup></b>	<b>-978</b>	<b>321</b>	<b>-1,294</b>	<b>-710</b>	<b>199</b>	<b>-1,300</b>

30:3

1 Accrued and realized interest related to financial assets and liabilities measured at fair value through the income statement is included in the amounts for gains and losses.

2 The Volvo Group uses forward contracts and currency options to hedge the value of future cash flows in foreign currency. Both unrealized and realized result of currency risk contracts is included in the table.

3 Information regarding changes in allowance for expected credit losses on accounts receivables is provided in note 16 Receivables and note 8 Other operating income and expenses.

4 The amount includes gains/losses due to derecognition of assets where SEK 333 M (151) is related to the sale of customer-financing receivables and SEK 90 M (83) is related to early buy-out revenue. Information regarding changes in allowance for expected credit losses on customer-financing receivables is provided in note 15 Customer-financing receivables and note 8 Other operating income and expenses.

5 Changes in fair value on shares and participations in listed companies through other comprehensive income amounted to SEK 48 (34).

6 Interest expenses attributable to financial liabilities measured at amortized cost recognized in operating income include interest expenses for financing operating lease activities, which are not classified as financial instruments.

7 In gain/loss, interest income and expenses related to financial instruments recognized in net financial items, SEK -978 M (-710) was recognized in other financial income and expenses.

8 Interest expenses attributable to pensions reported in net financial items of, SEK 379 M (358) are not included in this table.

» Read more in Note 4 Goals and policies in financial risk management.

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations.

» Read more in Note 9 Other financial income and expenses.

# 31

## CHANGES IN VOLVO GROUP FINANCIAL REPORTING 2019

### Implementation of new accounting standards

As from January 1, 2019 the Volvo Group applies IFRS 16 Leases and IFRIC 23 Uncertainty over Income Tax Treatments.

#### *IFRS 16 Leases*

IFRS 16 Leases replaced IAS 17 Leases and the related interpretations IFRIC 4, SIC-15 and SIC-27. The standard represents a new framework for recognizing leases with additional disclosure requirements.

IFRS 16 does not imply any significant changes to lessor accounting. Hence, the main impact of implementing the new standard is related to lessee accounting, as lease contracts are recognized in the balance sheet. The accounting model reflects that the lessee obtains the right to use an asset for a period of time and has an obligation to pay for that right. For the Volvo Group this implies a change in accounting of lease contracts for real estate, company cars and other leased items.

Implementing the new lease accounting for lessees results in increased assets and interest-bearing liabilities in the balance sheet, thereby affecting the net financial position. It also has a positive impact on operating income compared to prior years as a part of the lease expenses is recognized as interest expense within the finance net. In the cash flow statement the lease payments are allocated between interests paid in the operating cash flow and amortization of lease liabilities within the financing activities. Thus, it has a positive effect on the operating cash flow compared to prior years.

IFRS 16 is applied retrospectively but prior period reported financial information has not been restated. Hence, the opening balance for 2019 was adjusted in accordance with the new standard. For leases previously classified as operating leases with the Volvo Group as the lessee, a lease liability was recognized at the present value of future lease payments. A right-of-use asset was recognized at an amount equal to the lease liability; hence no transition effect was presented in equity.

On transition to IFRS 16 there are some exceptions from the lessee accounting model that the Volvo Group applied. Previous assessments of the lease definition remain on contracts entered into before January 1, 2019. At the transition, IFRS 16 was therefore only applied to the contracts that were identified as leases in accordance with IAS 17 and IFRIC 4. The IFRS 16 definition of a lease is applied on contracts entered on January 1, 2019 or after, to assess whether a contract contains a leased asset. If a contract includes a low value asset or has a short remaining lease term, i.e. ends during 2019, or is classified as a service contract, the lease payments are recognized as operating expenses in the income statement and are

therefore not included in the lease liability and right-of-use asset. For leases previously classified as finance leases with the Volvo Group as the lessee, a lease liability was recognized at the previous carrying amount of the finance lease liability amounting to SEK 960 M. A right-of-use asset was measured as the previous carrying amount of the finance lease asset amounting to SEK 1,047 M.

The new lessee accounting model resulted in an increase of right-of-use assets by SEK 6,209 M and an increase of lease liabilities by SEK 6,209 M as of January 1, 2019. All right-of-use assets are recognized within tangible assets and all lease liabilities are recognized as current- and non-current within other loans.

» Read more in Note 14 Leasing about accounting policy for 2019.

The effect from the transition to IFRS 16 is presented on page 173–174 in the restated balance sheet and net financial position as of January 1, 2019.

#### *IFRIC 23 Uncertainty over income tax treatment*

IFRIC 23 is a new interpretation of uncertain income tax treatments within the scope of IAS 12 Income Taxes. An assessment shall be made whether it is probable that the tax authority or court will accept the tax treatment in the income tax return, otherwise, the effect of uncertainty should be estimated and recognized in the financial statements as tax liability.

For the Volvo Group, the implementation of IFRIC 23 implies a changed classification for identified income tax-related risks that were previously recognized as a provision for tax charges that are probable to regulate the obligation. Uncertain income tax treatments are now reported as tax liabilities.

IFRIC 23 is applied retrospectively but prior period reported financial information has not been restated. Hence, the opening balance for 2019 was adjusted in accordance with the new interpretation. Income tax risks previously recognized as current and non-current provisions were reclassified to tax liabilities with an amount of SEK 295 M as of January 1, 2019. Thus IFRIC 23 had no impact on equity.

» Read more in Note 10 Income taxes about accounting policy for 2019.

The effect from the transition to IFRIC 23 is presented on page 173 in the restated balance sheet as of January 1, 2019.



## CONSOLIDATED BALANCE SHEET

	Volvo Group			
SEK M	Previously reported Dec 31, 2018	Restatement IFRS 16	Restatement IFRIC 23	After restatement Jan 1, 2019
<b>Assets</b>				
<b>Non-current assets</b>				
Intangible assets	38,104	–	–	38,104
<i>Tangible assets</i>				
Property, plant and equipment	55,673	6,209	–	61,882
Assets under operating leases	43,103	–	–	43,103
<i>Financial assets</i>				
Investments in Joint Ventures and associated companies	11,135	–	–	11,135
Other shares and participations	740	–	–	740
Non-current customer-financing receivables	66,148	–	–	66,148
Net pension assets	1,549	–	–	1,549
Non-current interest-bearing receivables	1,296	–	–	1,296
Other non-current receivables	8,736	–	–	8,736
Deferred tax assets	13,505	–	–	13,505
<b>Total non-current assets</b>	<b>239,989</b>	<b>6,209</b>	<b>–</b>	<b>246,198</b>
<b>Current assets</b>				
Inventories	65,783	–	–	65,783
<i>Current receivables</i>				
Customer-financing receivables	60,779	–	–	60,779
Tax assets	1,669	–	–	1,669
Interest-bearing receivables	2,097	–	–	2,097
Accounts receivable	41,906	–	–	41,906
Other receivables	15,144	–	–	15,144
Assets held for sale	203	–	–	203
Marketable securities	160	–	–	160
Cash and cash equivalents	46,933	–	–	46,933
<b>Total current assets</b>	<b>234,675</b>	<b>–</b>	<b>–</b>	<b>234,675</b>
<b>Total assets</b>	<b>474,663</b>	<b>6,209</b>	<b>–</b>	<b>480,872</b>
<b>Equity and liabilities</b>				
Equity attributable to owners of AB Volvo	123,379	–	–	123,379
Non-controlling interest	2,452	–	–	2,452
<b>Total equity</b>	<b>125,831</b>	<b>–</b>	<b>–</b>	<b>125,831</b>
<i>Non-current provisions</i>				
Provisions for post-employment benefits	16,482	–	–	16,482
Provisions for deferred taxes	4,128	–	–	4,128
Other provisions	14,590	–	–120	14,470
<i>Non-current liabilities</i>				
Bond loans	59,115	–	–	59,115
Other loans	28,095	4,684	–	32,779
Other liabilities	32,949	–	–	32,949
Current provisions	13,448	–	–175	13,273
<i>Current liabilities</i>				
Bond loans	26,657	–	–	26,657
Other loans	21,989	1,525	–	23,514
Trade payables	73,630	–	–	73,630
Tax liabilities	3,749	–	295	4,044
Other liabilities	53,999	–	–	53,999
<b>Total equity and liabilities</b>	<b>474,663</b>	<b>6,209</b>	<b>–</b>	<b>480,872</b>

## » CONSOLIDATED NET FINANCIAL POSITION

SEK bn	Volvo Group		
	Previously reported Dec 31, 2018	Restatement IFRS 16	After restatement Jan 1, 2019
<i>Non-current interest-bearing assets</i>			
Non-current customer-financing receivables	66.1	–	66.1
Non-current interest-bearing receivables	1.3	–	1.3
<i>Current interest-bearing assets</i>			
Customer-financing receivables	60.8	–	60.8
Interest-bearing receivables	2.1	–	2.1
Marketable securities	0.2	–	0.2
Cash and cash equivalents	46.9	–	46.9
<b>Total interest-bearing financial assets</b>	<b>177.4</b>	<b>–</b>	<b>177.4</b>
<i>Non-current interest-bearing liabilities</i>			
Bond loans	–59.1	–	–59.1
Other loans	–28.1	–4.7	–32.8
<i>Current interest-bearing liabilities</i>			
Bond loans	–26.7	–	–26.7
Other loans	–22.0	–1.5	–23.5
<b>Total interest-bearing financial liabilities</b>	<b>–135.9</b>	<b>–6.2</b>	<b>–142.1</b>
<b>Net financial position excl. post-employment benefits</b>	<b>41.6</b>	<b>–6.2</b>	<b>35.4</b>
Provisions for post-employment benefits, net	–14.9	–	–14.9
<b>Net financial position incl. post-employment benefits</b>	<b>26.6</b>	<b>–6.2</b>	<b>20.4</b>

31:2

# PARENT COMPANY



# PARENT COMPANY AB VOLVO

Corporate registration number 556012-5790.

Amounts within parentheses refer to the preceding year, 2018.

## Board of Directors' report

AB Volvo is the parent company of the Volvo Group and its operations comprise of the Volvo Group's head office with staff together with some corporate functions.

Income from investments in Volvo Group companies include dividends amounting to SEK 7,509 M (2,646) as well as transfer price adjustments and royalties amounting to a net income of SEK 122 M (166).

The carrying value of shares and participations in Volvo Group companies amounted to SEK 72,272 M (72,765), of which SEK 71,084 M (71,706) pertained to shares in wholly owned subsidiaries. The corresponding shareholders' equity in the subsidiaries (including equity in untaxed reserves

but excluding non-controlling interests) amounted to SEK 139,883 M (129,867).

Total investments in joint ventures and associated companies, recognized in accordance with the equity method in the consolidated accounts, amounted to SEK 8,989 M (8,889). The portion equity in joint ventures and associated companies pertaining to AB Volvo amounted to SEK 10,400 M (7,505).

Financial net debt amounted to SEK 32,160 M (27,785).

AB Volvo's risk capital (equity plus untaxed reserves) amounted to SEK 73,220 M (67,545) corresponding to 60% (58%) of total assets.

## INCOME STATEMENT

SEK M		2019	2018
<b>Net sales</b>	Note 2	<b>362</b>	<b>635</b>
Cost of sales	Note 2	-362	-635
<b>Gross income</b>		<b>0</b>	<b>0</b>
Administrative expenses	Note 2, 3	-1,454	-1,601
Other operating income and expenses	Note 4	-52	-23
Income from investments in Group companies	Note 5	6,289	4,899
Income from investments in joint ventures and associated companies	Note 6	451	388
Income from other investments	Note 7	0	-4
<b>Operating income</b>		<b>5,234</b>	<b>3,659</b>
Interest income and similar credits		1	0
Interest expenses and similar charges	Note 8	-834	-730
Other financial income and expenses	Note 9	-22	-21
<b>Income after financial items</b>		<b>4,379</b>	<b>2,908</b>
Appropriations	Note 10	21,792	14,440
Income taxes	Note 11	-4,162	-2,727
<b>Income for the period</b>		<b>22,009</b>	<b>14,621</b>

## OTHER COMPREHENSIVE INCOME

<b>Income for the period</b>	<b>22,009</b>	<b>14,621</b>
<b>Other comprehensive income, net of income taxes</b>	<b>-</b>	<b>-</b>
<b>Total comprehensive income for the period</b>	<b>22,009</b>	<b>14,621</b>

## BALANCE SHEET

SEK M		Dec 31, 2019	Dec 31, 2018
<b>Assets</b>			
<b>Non-current assets</b>			
Tangible assets	Note 12	7	7
<i>Financial assets</i>			
Shares and participations in Group companies	Note 13	72,272	72,765
Investments in joint ventures and associated companies	Note 13	8,997	8,894
Other shares and participations	Note 13	1	4
Deferred tax assets	Note 11	207	186
<b>Total non-current assets</b>		<b>81,484</b>	<b>81,856</b>
<b>Current assets</b>			
<i>Current receivables</i>			
Receivables Group companies		39,191	35,027
Other receivables	Note 14	360	118
<b>Total current assets</b>		<b>39,551</b>	<b>35,145</b>
<b>Total assets</b>		<b>121,035</b>	<b>117,001</b>
<b>Equity and liabilities</b>			
<i>Equity</i>			
<i>Restricted equity</i>			
Share capital		2,554	2,554
Statutory reserve		7,337	7,337
<i>Unrestricted equity</i>			
Non-restricted reserves		390	378
Retained earnings		30,929	36,654
Income for the period		22,009	14,621
<b>Total equity</b>		<b>63,219</b>	<b>61,544</b>
<b>Untaxed reserves</b>	Note 15	<b>10,000</b>	<b>6,001</b>
<i>Provisions</i>			
Provisions for post-employment benefits	Note 16	248	258
<b>Total provisions</b>		<b>248</b>	<b>258</b>
<i>Non-current liabilities</i>			
Liabilities to Group companies	Note 17	5,589	13,973
Other liabilities		6	4
<b>Total non-current liabilities</b>		<b>5,595</b>	<b>13,977</b>
<i>Current liabilities</i>			
Trade payables		226	210
Other liabilities to Group companies		39,246	34,050
Tax liabilities		1,722	414
Other liabilities	Note 18	779	547
<b>Total current liabilities</b>		<b>41,973</b>	<b>35,221</b>
<b>Total equity and liabilities</b>		<b>121,035</b>	<b>117,001</b>



## CASH FLOW STATEMENT

SEK M	2019	2018
<b>Operating activities</b>		
Operating income	5,234	3,659
Depreciation and amortization	0	0
Other non-cash items	Note 20 176	-3,995
Total change in working capital whereof	-726	-99
<i>Change in accounts receivable</i>	-70	-14
<i>Change in trade payables</i>	48	19
<i>Other changes in working capital</i>	-704	-104
Interest and similar items received	1	0
Interest and similar items paid	-829	-727
Other financial items	-13	-14
Group contributions received	14,440	17,923
Income taxes paid	-2,218	-2,751
<b>Cash-flow from operating activities</b>	<b>16,065</b>	<b>13,996</b>
<b>Investing activities</b>		
Investments in in-/tangible assets	0	-
Disposals of in-/tangible assets	-17	-
Investments and divestments of shares in group companies, net	Note 20 -19	371
Investments and divestments of shares in non-group companies, net	Note 20 -101	-1
<b>Cash-flow after net investments</b>	<b>15,928</b>	<b>14,366</b>
<b>Financing activities</b>		
Change in loans, net	Note 20 4,377	-5,790
Dividends to AB Volvo shareholders	-20,335	-8,636
Other	30	60
<b>Change in cash &amp; cash equivalents</b>	<b>0</b>	<b>0</b>
<b>Cash &amp; cash equivalents, beginning of year</b>	<b>-</b>	<b>-</b>
<b>Cash &amp; cash equivalents, end of year</b>	<b>-</b>	<b>-</b>

CHANGES IN EQUITY						
SEK M	Restricted equity		Unrestricted equity			Total equity
	Share capital	Statutory reserve	Share premium reserve	Retained earnings	Total	
<b>Balance at December 31, 2017</b>	<b>2,554</b>	<b>7,337</b>	<b>338</b>	<b>45,305</b>	<b>45,643</b>	<b>55,534</b>
Income for the period	–	–	–	14,621	14,621	14,621
<i>Other comprehensive income</i>						
Other comprehensive income for the period	–	–	–	–	–	–
<b>Total income for the period</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>14,621</b>	<b>14,621</b>	<b>14,621</b>
<i>Transactions with shareholders</i>						
Dividends to AB Volvo shareholders	–	–	–	–8,636	–8,636	–8,636
Share based payments	–	–	40	–15	25	25
Transactions with shareholders	–	–	40	–8,651	–8,611	–8,611
<b>Balance at December 31, 2018</b>	<b>2,554</b>	<b>7,337</b>	<b>378</b>	<b>51,275</b>	<b>51,653</b>	<b>61,544</b>
Income for the period	–	–	–	22,009	22,009	22,009
<i>Other comprehensive income</i>						
Other comprehensive income for the period	–	–	–	–	–	–
<b>Total income for the period</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>22,009</b>	<b>22,009</b>	<b>22,009</b>
<i>Transactions with shareholders</i>						
Dividends to AB Volvo shareholders	–	–	–	–20,335	–20,335	–20,335
Share based payments	–	–	12	–11	1	1
Transactions with shareholders	–	–	12	–20,346	–20,334	–20,334
<b>Balance at December 31, 2019</b>	<b>2,554</b>	<b>7,337</b>	<b>390</b>	<b>52,938</b>	<b>53,328</b>	<b>63,219</b>

► Read more in Note 19 Equity and number of shares in the consolidated financial statements about the share capital of the parent company.

# NOTES TO FINANCIAL STATEMENTS

The amounts within parentheses refer to the preceding year, 2018.

## 1 ACCOUNTING POLICIES

The parent company has prepared its financial statements in accordance with the Swedish Annual Accounts Act (1995:1554) and RFR 2, Accounting for legal entities. According to RFR 2, the parent company shall apply all the International Financial Reporting Standards endorsed by the EU as far as this is possible within the framework of the Swedish Annual Accounts Act.

The changes in RFR 2 applicable to the fiscal year beginning January 1, 2019, concerns IFRIC 23 Uncertainty over income tax treatment and IFRS 16 Leases.

IFRIC 23 Uncertainty over income tax treatment was effective as from January 1, 2019. IFRIC 23 clarifies how the recognition and measurement requirements of IAS 12 Income taxes are applied where there is uncertainty over income tax treatments. The implementation of IFRIC 23 has not had any major impact on the parent company.

IFRS 16 Leases was effective as of January 1, 2019. RFR 2 includes an exception allowing all lease contracts to be accounted for as operational lease contracts when the parent company is a lessee. The changes in IFRS 16 compared to IAS 17 Leases has not had any major impact on the parent company.

There are no announced changes in RFR 2 applicable to the fiscal year beginning January 1, 2020 or later.

The accounting policies applied by the Volvo Group are described in the respective notes in the consolidated financial statements. The main deviations between the accounting policies applied by the Volvo Group and the parent company are described below.

Shares and participations in group companies and investments in joint ventures and associated companies are recognized at cost in the parent company and test for impairment is performed annually. In accordance with RFR 2, the parent company includes costs related to acquisition of a business in the acquisition value. Dividend is recognized in the income statement. All shares and participations are related to business operations and profit or loss are recognized within operating income.

The parent company applies the exception in the application of IFRS 9 which concerns accounting and measurement of financial contracts of guarantee in favour of subsidiaries and associated companies. The parent company recognizes the financial contracts of guarantee as contingent liabilities.

According to RFR 2, application of the regulations in IAS 19 regarding defined benefit plans is not mandatory for legal entities. However, IAS 19 shall be applied for supplementary disclosures when applicable. RFR 2 refers to the Swedish law on safeguarding of pension commitments ("tryggandelagen") related to recognition of provisions for post-employment benefits in the balance sheet and of plan assets in pension foundations.

The parent company recognizes the difference between depreciation according to plan and tax depreciation as accumulated additional depreciation, included in untaxed reserves.

Reporting of group contributions is recognized in accordance with the alternative rule in RFR 2. Group contributions are reported as appropriations.

## 2 REVENUE AND INTRA-GROUP TRANSACTIONS

The recognized net sales of SEK 362 M (635) pertain mainly to revenues from sale of services to group companies SEK 320 M (590). Revenue is recognized when the control of the service has been transferred to the customer, which is when the parent company incurs the associated cost to deliver the service and the customer can benefit from the use of the delivered services.

Purchases from group companies amounted to SEK 468 M (488).

## 3 ADMINISTRATIVE EXPENSES

### Depreciation

Administrative expenses include depreciation of SEK 0 M (0) and pertains to machinery and equipment.

Fees to the auditors	2019	2018
Deloitte AB		
- Audit fees	18	18
- Audit-related fees	1	-
- Other fees	1	0
PricewaterhouseCoopers AB		
- Audit-related fees	-	3
- Other fees	0	-
<b>Total</b>	<b>20</b>	<b>21</b>

3:1

» Read more in Note 28 Fees to the Auditors in the consolidated financial statements for a description of the different categories of fees.

### Personnel

Wages, salaries and other remunerations amounted to SEK 471 M (453), social costs to SEK 143 M (134) and pension costs to SEK 193 M (302). Pension cost of SEK 9 M (8) pertained to Board Members and the President. The parent company has outstanding pension obligations of SEK 1 M (1) to these individuals.

The number of employees at year end was 331 (329).

» Read more in Note 27 Personnel in the consolidated financial statements about the average number of employees, wages, salaries and other remunerations including incentive program as well as Board members and senior executives by gender.

## 4 OTHER OPERATING INCOME AND EXPENSES

Other operating income and expenses include loss on sale of rights by SEK 51 M, donations, grants and Volvo profit sharing program costs by SEK 4 M (5).

## 5 INCOME FROM INVESTMENTS IN GROUP COMPANIES

### Income from investments in Group Companies

	2019	2018
<b>Dividends received</b>		
Volvo Holding Sverige AB, Sweden	4,980	675
VNA Holding Inc., USA	1,423	957
JSC Volvo Vostok, Russia	316	–
Volvo Automotive Finance (China) Ltd, China	180	–
Volvo Group UK Ltd., Great Britain	175	41
Volvo China Investment Co., China	137	–
Volvo Malaysia Sdn Bhd, Malaysia	106	227
Volvo Danmark A/S, Denmark	100	83
Volvo Norge AS, Norway	92	33
Kommersiella Fordon Europa AB, Sweden	–	630
<b>Subtotal</b>	<b>7,509</b>	<b>2,646</b>
<b>Impairment of shares</b>		
Volvo Construction Equipment AB, Sweden	–2,554	–
Volvo Korea Holding AB, Sweden	–300	–
Volvo Italia Spa, Italy	–170	–
<b>Subtotal</b>	<b>–3,024</b>	<b>–</b>
<b>Reversal impairment of shares</b>		
Volvo Bussar AB, Sweden	1,054	–
Volvo Information Technology AB, Sweden	145	–
JSC Volvo Vostok, Russia	143	–
Volvo Group UK, Ltd., Great Britain	134	–
Volvo Business Services AB, Sweden	118	–
Volvo Logistics AB, Sweden	85	–
VFS Servizi Finanziari Spa, Italy	22	–
Kommersiella Fordon AB, Sweden	–	802
Volvo Financial Services AB, Sweden	–	722
Volvo Italia Spa, Italy	–	282
AB Volvo Penta, Sweden	–	148
Volvo China Investment Co Ltd., China	–	99
Volvo Norge AS, Norway	–	8
<b>Subtotal</b>	<b>1,701</b>	<b>2,061</b>
<b>Income from divestment of shares</b>		
Alviva AB, Sweden	–21	–
Volvo Event Management SA, Belgium	2	–
Volvo East Asia (Pte) Ltd., Singapore	–	26
<b>Subtotal</b>	<b>–19</b>	<b>26</b>
<b>Income from investments in Group Companies</b>	<b>6,167</b>	<b>4,733</b>

5:1

Transfer price adjustments and royalties amount to a net income of SEK 122 M (166).

## 6 INCOME FROM INVESTMENTS IN JOINT VENTURES AND ASSOCIATED COMPANIES

Income from investments in joint ventures and associated companies include dividend from Dongfeng Commercial Vehicles Co., Ltd by SEK 392 M (336) and from VE Commercial Vehicles, Ltd. by SEK 59 M (53).

## 7 INCOME FROM OTHER INVESTMENTS

AB Volvo have not had any transactions which have had a significant impact on the financial statements.

## 8 INTEREST EXPENSES AND SIMILAR CHARGES

Interest expenses and similar charges totalling SEK 834 M (730) included interest of SEK 834 M (730) to subsidiaries.

## 9 OTHER FINANCIAL INCOME AND EXPENSES

Other financial income and expenses include exchange rate gains and losses, costs for credit rating and stock exchange listing cost.

## 10 APPROPRIATIONS

Appropriations include a net of group contributions of SEK 25,792 M (14,440), tax allocation reserve of 4,000 (–) and reversal of additional depreciation of SEK 0 M (0).

# 11 INCOME TAXES

Income taxes were distributed as follow:

	2019	2018
Current taxes relating to the period	-4,217	-2,725
Adjustment of current taxes for prior period	34	7
Deferred taxes	21	-9
<b>I/S Total income taxes</b>	<b>-4,162</b>	<b>-2,727</b>

11:1

Deferred taxes relate to estimated tax on temporary differences.

Deferred taxes has been revaluated based on the tax rate that are expected for the period when the asset is realized or the liability are adjusted. The table below discloses the principal reasons for the difference between the corporate income tax of 21.4% and the tax for the period:

	2019	2018
Income before taxes	26,171	17,348
Income tax according to applicable tax rate	-5,601	-3,817
Capital gains/losses	-4	6
Non-taxable dividends	1,703	668
Tax effect due to changed income tax rate	1	-15
Non-taxable revaluations of shareholdings	16	-
Other non-deductible expenses	-656	-21
Other non-taxable income	349	456
Adjustment of current taxes for prior period	34	7
Withholding tax	-9	-6
Remeasurement of deferred tax assets	-2	0
Current tax on standardized method	7	-5
<b>Income taxes for the period</b>	<b>-4,162</b>	<b>-2,727</b>

11:2

<b>Specification of deferred tax assets</b>	Dec 31, 2019	Dec 31, 2018
Provisions for post-employment benefits	207	186
<b>B/S Deferred tax assets</b>	<b>207</b>	<b>186</b>

11:3



# 12

## INTANGIBLE AND TANGIBLE ASSETS

Intangible assets, acquisition costs	Rights	Other intangible assets	Total intangible assets
Opening balance 2018	52	116	168
Acquisition cost as of December 31, 2018	52	116	168
Sales	-52	-	-52
Acquisition cost as of December 31, 2019	-	116	116

Intangible assets, accumulated amortization	Rights	Other intangible assets	Total intangible assets
Opening balance 2018	52	116	168
Accumulated amortization as of December 31, 2018	52	116	168
Sales	-52	-	-52
Accumulated amortization as of December 31, 2019	-	116	116
<b>B/S</b> Net value in balance sheet as of December 31, 2018 <sup>1</sup>	-	-	-
<b>B/S</b> Net value in balance sheet as of December 31, 2019 <sup>1</sup>	-	-	-

Tangible assets, acquisition costs	Machinery and equipment	Total tangible assets
Opening balance 2018	21	21
Acquisition cost as of December 31, 2018	21	21
Sales/scraping	-4	-4
Acquisition cost as of December 31, 2019	17	17

Tangible assets, accumulated depreciation	Machinery and equipment	Total tangible assets
Opening balance 2018	13	13
Accumulated depreciation as of December 31, 2018	13	13
Depreciation	0	0
Sales/scraping	-3	-3
Accumulated depreciation as of December 31, 2019	10	10
<b>B/S</b> Net value in balance sheet as of December 31, 2018 <sup>1</sup>	7	7
<b>B/S</b> Net value in balance sheet as of December 31, 2019 <sup>1</sup>	7	7

<sup>1</sup> Acquisition value, less accumulated depreciation, amortization and impairment.

12:1

# 13

## INVESTMENTS IN SHARES AND PARTICIPATIONS

AB Volvo owns, directly or indirectly, 276 (275) legal entities. The legal structure is designed to effectively manage legal requirements, administration and taxes, as well as the operations conducted by the Volvo Group in each country it operates. Legal entities may have different characters and include different types of operations, such as production, development and sales. The character of a legal entity may change over time. Furthermore legal entities could include different type of the Volvo Group's operations and this could also change over time. In some coun-

tries there are legal restrictions which limit the Volvo Group's ability to transfer assets between the Volvo Group's legal entities. Read more in Note 18 Cash & cash equivalents in the consolidated financial statements for a description of restrictions related to cash and cash equivalents.

Volvo Group's operational structure gives a better overview of how the Volvo Group has chosen to organize its business. Read more about Volvo Group's operational structure in Note 6 Segment Reporting in the consolidated financial statements.

► Changes in AB Volvo's holding of shares and participations are disclosed below:

	Group companies		Joint ventures and associated companies		Other shares and participations	
	2019	2018	2019	2018	2019	2018
<b>Opening balance</b>	<b>72,765</b>	<b>69,244</b>	<b>8,894</b>	<b>8,895</b>	<b>4</b>	<b>7</b>
Acquisitions/New issue of shares	830	–	–	–	–	–
Divestments/Redemption of shares	–32	–3,427	–	–	–	–1
Shareholder's contribution	32	4,887	100	–	1	1
Impairment of shares and participations	–3,024	–	–	–1	–1	–3
Reversal impairment of shares and participations	1,701	2,061	–	–	–	–
Reclassification	–	–	3	–	–3	–
<b>B/S Balance sheet, December 31</b>	<b>72,272</b>	<b>72,765</b>	<b>8,997</b>	<b>8,894</b>	<b>1</b>	<b>4</b>

Holding of shares in Group companies	Registration number	Dec 31, 2019	Dec 31, 2019	Dec 31, 2018
		Percentage holding <sup>1</sup>	Carrying value <sup>2</sup>	Carrying value <sup>2</sup>
Volvo Lastvagnar AB, Sweden	556013-9700	100	8,711	8,711
Volvo Holding Sverige AB, Sweden	556539-9853	100	8,134	8,134
UD Trucks Corporation, Japan	–	100	8,928	8,928
Volvo Bussar AB, Sweden	556197-3826	100	3,033	1,980
Volvo Construction Equipment AB, Sweden	556021-9338	100	7,559	10,113
AB Volvo Penta, Sweden	556034-1330	100	586	586
VNA Holding Inc., USA	–	100	3,688	3,688
Volvo Financial Services AB, Sweden	556000-5406	100	2,667	2,667
Volvo Treasury AB, Sweden	556135-4449	100	13,044	13,044
Sotrof AB, Sweden	556519-4494	100	2,888	2,888
Volvo Lastvagnar Sverige AB (former Volvo Korea Holding AB), Sweden	556531-8572	100	2,355	2,655
Volvo China Investment Co Ltd., China	–	100	1,302	1,302
Volvo Automotive Finance (China) Ltd., China	–	100	491	491
Volvo Group UK Ltd., Great Britain <sup>3</sup>	–	35	350	216
Volvo Group Mexico SA, Mexico	–	100	543	543
Volvo Group Venture Capital AB, Sweden	556542-4370	100	369	369
Volvo Powertrain AB, Sweden	556000-0753	100	898	898
Volvo Information Technology AB, Sweden	556103-2698	100	1,511	1,366
Volvo Parts AB, Sweden	556365-9746	100	200	200
Volvo Group Insurance Försäkrings AB, Sweden	516401-8037	100	182	182
Volvo Business Services AB, Sweden	556029-5197	100	118	–
Volvo Danmark A/S, Denmark	–	100	157	157
VFS Servizi Finanziari Spa, Italy <sup>4</sup>	–	25	101	79
Kommersiella Fordon Europa AB, Sweden	556049-3388	100	2,693	2,693
Volvo Norge AS, Norway	–	100	50	50
Volvo Malaysia Sdn Bhd., Malaysia	–	100	48	48
JSC Volvo Vostok, Russia <sup>5</sup>	–	75	177	34
Volvo Italia Spa, Italy <sup>6</sup>	–	65	559	729
Volvo Logistics AB, Sweden	556197-9732	100	85	–
Volvo Information Technology GB Ltd., Great Britain	–	100	3	3
VFS Latvia SIA, Latvia	–	100	9	9
VFS Int Romania Leasing Operational, Romania	–	100	2	2
Volvo Equipamentos de Construção, Latin America, Brazil	–	100	830	–
Other holdings	–	–	1	0
<b>Total carrying value Group companies<sup>7</sup></b>			<b>72,272</b>	<b>72,765</b>

Holding of shares in Joint Ventures, associated companies and other shares and participations	Registration number	Dec 31, 2019	Dec 31, 2019	Dec 31, 2018
		Percentage holding <sup>1</sup>	Carrying value <sup>2</sup>	Carrying value <sup>2</sup>
Dongfeng Commercial Vehicles Co. Ltd., China	–	45,0	7,197	7,197
VE Commercial Vehicles Ltd., India <sup>8</sup>	–	45,6	1,616	1,616
Blue Chip Jet II HB, Sweden	969717-2105	50,0	176	76
Other investments	–	–	9	9
<b>Total carrying value, joint ventures, associated companies and other shares and participations</b>			<b>8,998</b>	<b>8,898</b>

- 1 The percentage holding refers to the parent company AB Volvo's holding.  
 2 Refers to AB Volvo's carrying value of its holding.  
 3 Total holding by Volvo Lastvagnar AB and AB Volvo is 100%.  
 4 Total holding by Volvo Italia Spa and AB Volvo is 100%.  
 5 Total holding by AB Volvo and Volvo Trucks Region Central Europe GmbH is 100%.  
 6 Total holding by Renault Trucks (SAS), Volvo Lastvagnar AB, AB Volvo Penta and AB Volvo is 100%.  
 7 AB Volvo's share of shareholders' equity in subsidiaries (including equity in untaxed reserves) was SEK 139,883 M (129,867).  
 8 In Volvo Group the company is reported as a joint venture, consolidated according to equity method.

#### Shares and participations in group companies

During 2019 shares in Volvo Equipamentos de Construção Latin America has been received in form of dividend from Volvo Holding Sverige AB by SEK 830 M. Shareholder's contribution has been paid to Alviva AB by SEK 32 M and Alviva AB has been divested with carrying value of SEK 32 M. Impairment of Volvo Construction Equipment AB has been made by SEK 2,554 M. This impairment refers to previous ownership of Volvo Construction Equipment N.V. which was transferred to Volvo Construction AB 2018 as a shareholder's contribution. Impairment has been made in Volvo Lastvagnar Sverige AB by SEK 300 M and Volvo Italia Spa by SEK 170 M. Reversal of impairments has been made in Volvo Bussar AB by SEK 1,054 M, Volvo Information Technology AB by SEK 145 M, JSC Volvo Vostok by SEK 143 M, Volvo Group UK by SEK 134 M, Volvo Business Services AB by SEK 118 M, Volvo Logistics AB by SEK 85 M and VFS Servizi Finanziari Spa by SEK 22 M.

During 2018 shares in Volvo Construction Equipment N.V. was transferred to Volvo Construction Equipment AB in form of shareholder's contribution by SEK 3,082 M. Redemption of shares in Volvo Group UK was made by SEK 345 M. Shareholder's contribution of SEK 1,305 M was paid to Volvo Construction Equipment AB in form of 100% holding of Volvo CE Europe SAS, 100% holding of Volvo Compact Equipment SAS and 90% of the holding in Volvo CE Germany. Shareholder's contribution of SEK 500 M was paid to Volvo Holding Sverige AB in form of shares in Volvo Treasury Canada Inc. Reversal of impairment in Volvo Penta AB was made by SEK 148 M, in Volvo Financial Services AB by SEK 722 M, in Volvo Italia Spa by SEK 282 M, in Volvo Norge AS by SEK 8 M, in Volvo China Investment Co Ltd by SEK 99 M and in Kommerzielle Fordon AB by SEK 802 M.

In December 2019, the Volvo Group announced the intention to transfer ownership of the complete UD Trucks business globally from the Volvo Group to Isuzu Motors.

#### Investments in joint ventures and associated companies

During 2019 capital contribution has been paid to Blue Chip Jet II HB by SEK 100 M.

No significant transactions has affected the value of investments in joint ventures and associated companies during 2018.

#### Other shares and participations

No significant transactions has affected the value of other shares and participations during 2019 and 2018.

## 14 OTHER RECEIVABLES

	Dec 31, 2019	Dec 31, 2018
Accounts receivable	7	12
Prepaid expenses and accrued income	53	54
Other receivables	300	52
<b>B/S Total other receivables</b>	<b>360</b>	<b>118</b>

14:1

There is no valuation allowance for doubtful receivables at the end of the year. Fair value is not considered to differ from carrying value.

## 15 UNTAXED RESERVES

	Dec 31, 2019	Dec 31, 2018
Tax allocation reserve	10,000	6,000
Accumulated additional depreciation:		
Machinery and equipment	0	1
<b>B/S Total untaxed reserves</b>	<b>10,000</b>	<b>6,001</b>

15:1

# 16

## PROVISIONS FOR POST-EMPLOYMENT BENEFITS

The parent company has two types of pension plans, defined contribution plans and defined benefit plans.

**Defined contribution plans:** post-employment benefit plans where the company makes regular payments to separate entities and has no legal or constructive obligation to pay further contributions. The expenses for defined contribution plans are recognized during the period when the employee provides service.

**Defined benefit plans:** post-employment benefit plans where the company's undertaking is to provide predetermined benefits that the employee will receive on or after retirement. These benefit plans are secured through balance sheet provisions or pension fund contributions. Furthermore, a credit insurance policy has been taken out for the value of the obligations. The main defined benefit plan is the ITP2 plan which is based on final salary. The plan is semi-closed, meaning that only new employees born before 1979 have the possibility to choose the ITP2 solution. The ITP2 plan for the company is funded in Volvo Pension Foundation. Pension obligations are calculated annually, on the balance sheet date, based on actuarial assumptions.

The defined benefit obligations are calculated based on the actual salary levels at year-end and based on a discount rate of 3.84% (3.84) for the ITP2 plan and 0.7 % (0.6) for other pension obligations. Assumptions for discount rates and mortality rates are determined annually by PRI Pensionsgaranti for ITP2 and Finansinspektionen for other pension obligations, respectively.

The Volvo Pension Foundation was formed in 1996 to secure obligations relating to retirement pensions in accordance with the ITP plan. Since its formation, net contributions of SEK 284 M have been made to the foundation by the parent company.

Provisions for post-employment benefits in the parent company's balance sheet correspond to the present value of obligations at year end, less fair value of plan assets.

Provisions for post-employment benefits	Dec 31, 2019	Dec 31, 2018
Obligations <sup>1</sup>	-948	-921
Fair value of plan assets	931	788
<b>Funded status</b>	<b>-17</b>	<b>-133</b>
Limitation on assets in accordance with RFR2 (when plan assets exceed corresponding obligations)	-231	-125
<b>B/S Net provisions for post-employment benefits<sup>2</sup></b>	<b>-248</b>	<b>-258</b>

16:3

1 The ITP2 obligations amount to SEK -683 M (-645).

2 ITP2 obligations, net, amount to SEK 0 M (0).

Pension costs	2019	2018
Service costs	32	195
Interest costs <sup>3</sup>	29	26
Interest income <sup>3</sup>	-2	-30
<b>Pension costs for defined benefit plans</b>	<b>59</b>	<b>191</b>
<b>Pension costs for defined contribution plans</b>	<b>62</b>	<b>65</b>
Special payroll tax/yield tax <sup>4</sup>	67	42
Cost for credit insurance FPG	5	4
<b>Total costs for the period</b>	<b>193</b>	<b>302</b>

16:4

3 Interest cost, net of SEK 2 M (1) is included in financial items.

4 Special payroll tax/yield tax are calculated according to Swedish Tax law and accrued for in current liabilities.

Volvo Group applies IAS 19 Employee Benefits in the consolidated financial statements. This implies differences, which may be significant, in the accounting of defined benefit pension plans as well as in the accounting of plan assets invested in the Volvo Pension Foundation.

The accounting principles for defined benefit plans differ from IAS 19 mainly relating to:

- Pension liability calculated according to Swedish accounting principles does not take into account future salary increases.
- The discount rate used in the calculations is set by PRI Pensionsgaranti and Finansinspektionen, respectively.
- Changes in the discount rate, actual return on plan assets and other actuarial assumptions are recognized directly in the income statement and in the balance sheet.
- Deficit must be either immediately settled in cash or recognized as a liability in the balance sheet.
- Surplus cannot be recognized as an asset, but may in some cases be refunded to the company to offset pension costs.

Obligations in defined benefit plans	Funded	Unfunded	Total
<b>Obligations opening balance 2018</b>	<b>633</b>	<b>103</b>	<b>736</b>
Service costs	26	169	195
Interest costs	25	1	26
Benefits paid	-21	-15	-36
<b>Obligations as of December 31, 2018</b>	<b>663</b>	<b>258</b>	<b>921</b>
Service costs	31	1	32
Interest costs	27	2	29
Benefits paid	-21	-13	-34
<b>Obligations as of December 31, 2019</b>	<b>700</b>	<b>248</b>	<b>948</b>

16:1

Fair value of plan assets in funded plans	
<b>Plan assets opening balance 2018</b>	<b>800</b>
Actual return on plan assets	-12
Contributions and compensation to/from the fund	-
<b>Plan assets as of December 31, 2018</b>	<b>788</b>
Actual return on plan assets	110
Contributions and compensation to/from the fund	33
<b>Plan assets as of December 31, 2019</b>	<b>931</b>

16:2

## 17 NON-CURRENT LIABILITIES

Non-current debt matures as follows:

2020–2024	5,591
2025 or later	4
<b>B/S Total non-current liabilities</b>	<b>5,595</b>

17:1

## 18 OTHER LIABILITIES

	Dec 31, 2019	Dec 31, 2018
Wages, salaries and withholding taxes	294	302
Accrued expenses and prepaid income	480	239
Other liabilities	5	6
<b>B/S Total other liabilities</b>	<b>779</b>	<b>547</b>

18:1

No collateral is provided for current liabilities.

## 19 CONTINGENT LIABILITIES

Contingent liabilities as of December 31, 2019, amounted to SEK 307,460 M (296,380) of which SEK 307,194 M (296,166) pertained to group companies.

Credit guarantees are included to an amount corresponding to the credit limits. Credit guarantees amounted to SEK 284,992 M (277,018). The total amount pertained to group companies.

The utilized portion at yearend amounted to SEK 139,894 M (124,956), of which SEK 139,871 M (124,934) pertained to group companies.

## 20 CASH-FLOW

Other non-cash items	2019	2018
Revaluation of shareholdings	1,324	–2,056
Dividend in form of shares/Gains on sale of shares	–830	–1,831
Anticipated dividend	–301	–
Transfer price adjustments, net	–58	–178
Other changes	41	70
<b>Total Other items not affecting cash flow</b>	<b>176</b>	<b>–3,995</b>

20:1

Further information is provided in note 5 Income from investments in Group companies, note 6 Income from investments in joint ventures and associated companies and note 7 Income from other investments.

Acquired and divested shares in Group companies, net	2019	2018
Acquisitions	–32	–
Divestments	13	371
<b>Total cash flow from acquired and divested shares in Group companies, net</b>	<b>–19</b>	<b>371</b>

20:2

Acquisitions and divestments of participations in group companies are shown in note 13 Investments in shares and participations.

Acquired and divested shares in non-Group companies, net	2019	2018
Acquisitions	–101	–1
Divestments	–	–
<b>Total cash flow from acquired and divested shares in non-Group companies, net</b>	<b>–101</b>	<b>–1</b>

20:3

Acquisitions and divestments of participations in non-group companies are presented in note 13 Investments in shares and participations.

Change in loans, net	Non-current liabilities to Group companies	Current liabilities to Group companies
	Loan Volvo Treasury AB	Loan/Cashpool Treasury AB
<b>December 31, 2017</b>	<b>13,973</b>	<b>19,337</b>
Cash flows	–	–5,790
Other	–	7
<b>December 31, 2018</b>	<b>13,973</b>	<b>13,554</b>
Cash flows	–	4,377
Reclassification	–8,384	8,384
Other	–	8
<b>December 31, 2019</b>	<b>5,589</b>	<b>26,323</b>

20:4



## CORPORATE GOVERNANCE

# CORPORATE GOVERNANCE REPORT 2019

The Volvo Group appreciates sound corporate governance as a fundamental base in promoting its long-term strategic objectives and in achieving a trusting relation with shareholders and other key stakeholders. High standards when it comes to transparency, reliability and ethical values are guiding principles within the Volvo Group's operations.

## The Swedish Corporate Governance Code

AB Volvo's shares are admitted to trading on the stock exchange Nasdaq Stockholm's main market. As a listed company, Volvo applies the Swedish Corporate Governance Code (the Code), which is available at [www.corporategovernanceboard.se](http://www.corporategovernanceboard.se).

This Corporate Governance Report has been prepared in accordance with the Swedish Annual Accounts Act and the Code, and is separate from the Annual and Sustainability Report. The report has been reviewed by Volvo's auditors and includes a report from the auditors.

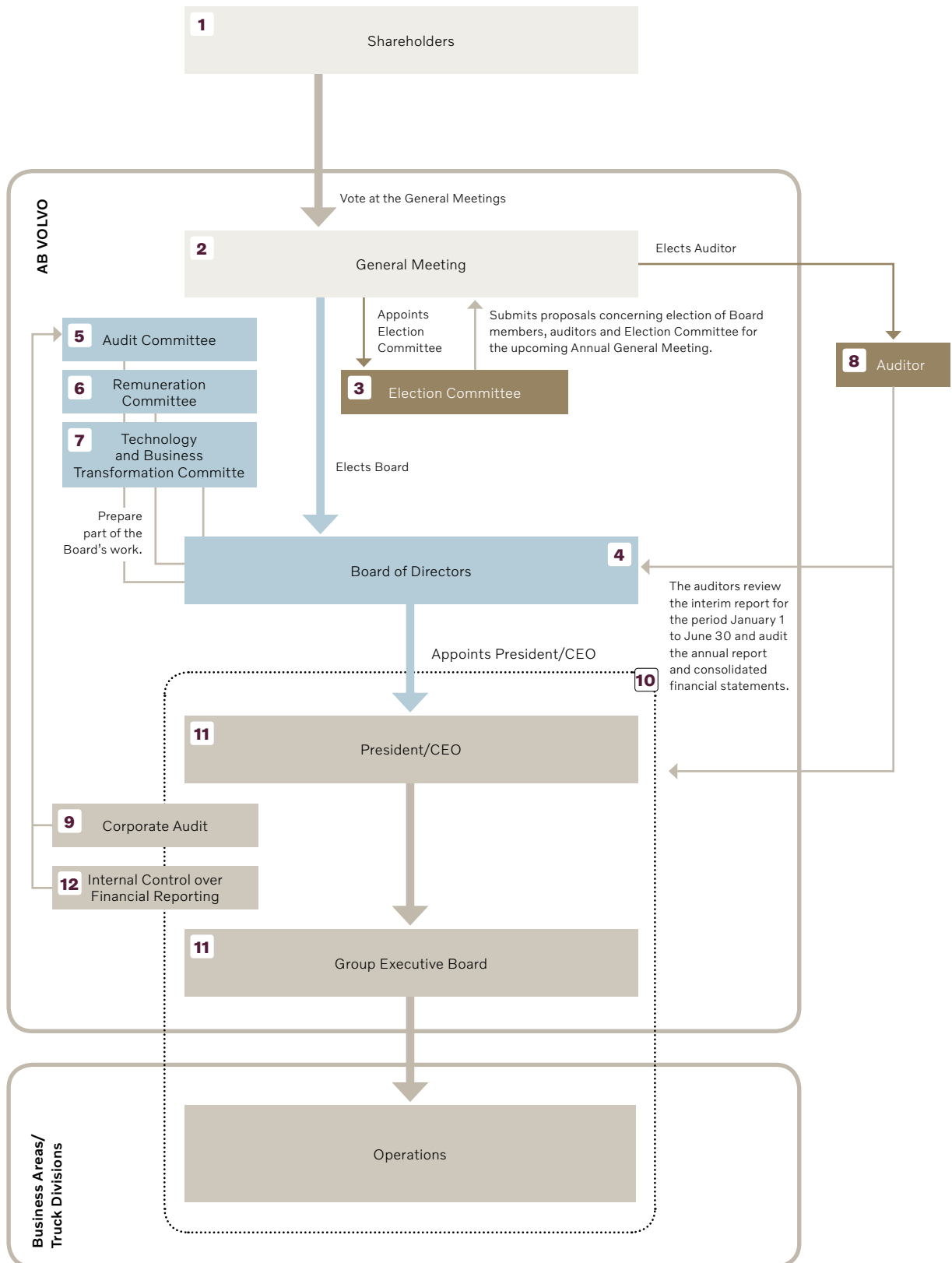
## Corporate Governance Model

At the General Meetings of AB Volvo, which is the Parent Company of the Volvo Group, the shareholders exercise their voting rights with regard to for example the composition of the Board of Directors of AB Volvo and the election of auditors.

An Election Committee, appointed by the Annual General Meeting of AB Volvo, submits proposals to the General Meeting concerning the election of Board members and Board Chairman as well as proposals for resolutions concerning remuneration of the Board. When applicable, the Election Committee also submits proposals to the General Meeting for the election of external auditors and for resolutions concerning fees to the auditors.

The Board is ultimately responsible for Volvo's organization and the management of its operations.

In addition, the Board appoints the President and CEO of AB Volvo. The CEO is in charge of the daily management of the Group in accordance with the guidelines provided by the Board.



## 1 SHARES AND SHAREHOLDERS

AB Volvo (publ) is a CSD company, which means that the share register is maintained by Euroclear Sweden AB. On December 31, 2019, Volvo had 250,798 shareholders according to the share register. The largest shareholder, in terms of votes on that date was AB Industrivärden, with 25.2 percent of the votes based on the number of shares outstanding. As per the same date, Geely Holding held 15.7 percent of the votes, AMF Insurance & Funds held 5.3 percent of the votes, Alecta held 5.0 percent of the votes and Norges Bank Investment Management held 4.1 percent of the votes, based on the number of shares outstanding.

Volvo has issued two classes of shares: series A and series B. At a General Meeting, series A shares carry one vote and series B shares one-tenth of a vote. The two share classes carry equal rights in the assets and earnings of the company. According to a special share conversion clause in the Articles of Association, holders of series A shares are entitled to request that their series A shares be converted to series B shares. Implementation of such conversions entail that the total number of votes in the company decreases.

For more information about the Volvo share and its shareholders, please refer to the Board of Director's Report on pages 99–101 of the Annual and Sustainability Report.

## 2 GENERAL MEETING

### General

The General Meeting is Volvo's highest decision-making body. The Annual General Meeting is held within six months of the end of the fiscal year, normally in Gothenburg, Sweden.

In addition to what follows from applicable law regarding shareholders' right to participate at General Meetings, under Volvo's Articles of Association shareholders must give notice of their attendance (within the time stated in the convening notice) and notify the company of any intention to bring assistants.

A shareholder who wants the Meeting to consider a particular matter must submit a request to the Board in sufficient time prior to the Meeting to the address provided on Volvo's website, [www.volvogroup.com](http://www.volvogroup.com).

### Annual General Meeting 2020

Volvo's Annual General Meeting for 2020 will be held on Wednesday, April 8, 2020 in Konserthuset, Göteborg. For further information about the Annual General Meeting 2020, please refer to the fold-out at the end of the Annual and Sustainability Report and Volvo's website, [www.volvogroup.com](http://www.volvogroup.com).



Chairman of the Board, Carl-Henric Svanberg at AB Volvo's Annual General Meeting 2019.

### 3 ELECTION COMMITTEE

#### Duties

The Election Committee is elected by the General Meeting. The Election Committee shall perform the tasks that are incumbent upon the Election Committee according to its instructions from the General Meeting and the rules of the Code. The main task is to prepare and present proposals to the Annual General Meeting on behalf of the shareholders for the election of Board members, Chairman of the Board and Board remuneration and, when applicable, proposals for auditors and fees to the auditors.

In addition, the Election Committee presents proposals for members of the Election Committee for the following year, in accordance with prevailing instructions for Volvo's Election Committee.

#### Composition

In accordance with the instructions for Volvo's Election Committee adopted by the Annual General Meeting 2019, the Annual General Meeting shall elect five members to serve on the Election Committee, of whom four shall represent the largest shareholders in the company, in terms of votes who have expressed their willingness to participate in the Election Committee. In addition, one of the members shall be the Chairman of the AB Volvo Board.

Volvo's Annual General Meeting 2019 resolved to appoint the following individuals as members of the Election Committee:

- Bengt Kjell (AB Industrivärden)
- Pär Boman (Svenska Handelsbanken, SHB Pension Fund, SHB Employee Fund, SHB Pensionskassa and Oktogonen)
- Ramsay Brufer (Alecta)
- Carine Smith Ihenacho (Norges Bank Investment Management)
- Carl-Henric Svanberg, Chairman of the Board.

The Election Committee appointed Bengt Kjell as Chairman of the Election Committee.

### 4 BOARD OF DIRECTORS

#### Duties

The Board is ultimately responsible for Volvo's organization and management of the company's operations. The Board is responsible for the Group's long-term development and strategy, for regularly controlling and evaluating the Group's operations and for the other duties set forth in the Swedish Companies Act.

#### Composition

In 2019, AB Volvo's Board consisted of ten members elected by the Annual General Meeting and three members and two deputy members appointed by employee organizations. According to the Articles of Association, the Board shall consist of not less than six and not more than twelve members elected by the General Meeting.

The Annual General Meeting 2019 re-elected Matti Alahuhta, Eckhard Cordes, Hanne de Mora, Eric Elzvik, James W. Griffith, Martin Lundstedt, Kathryn V. Marinello, Martina Merz, Helena Stjernholm and Carl-Henric Svanberg as Board members and the Annual General Meeting re-elected Carl-Henric Svanberg as Chairman of the Board. An account of each Board member's age, principal education, professional experience, assignments in the company, other significant assignments, their own and related parties' ownership of shares in Volvo as of February 24, 2020, independence and the year they were elected to the Volvo Board, is presented in the "Board of Directors" section on pages 196–197.

Prior to the Annual General Meeting 2019, the Election Committee announced that it had applied the provisions of rule 4.1 of the Code as board diversity policy. The aim is that the Board as a collective should possess the required mix in terms of background and knowledge, whereby an even gender distribution is taken into particular account. The result of the Election Committee's application of the diversity policy is a Board that represents a mix of both professional experience and knowledge as well as geographical and cultural backgrounds. 40 percent of the Board members elected by the Annual General Meeting are women.

#### Independence requirements

The Board of Directors of AB Volvo is subject to the independence requirements prescribed in the Code.

Prior to the Annual General Meeting 2019, the Nomination Committee presented the following assessment of the independence of Board members elected at the Annual General Meeting 2019.

Carl-Henric Svanberg, Matti Alahuhta, Eckhard Cordes, Hanne de Mora, Eric Elzvik, James W. Griffith, Kathryn V. Marinello and Martina Merz were all considered independent of the company and company management, as well as the company's major shareholders.

Martin Lundstedt, as President of AB Volvo and CEO of the Volvo Group, was considered independent of the company's major shareholders but not of the company and company management.

Helena Stjernholm was considered independent of the company and company management. Since AB Industrivärden, prior to the Annual General Meeting 2019, controlled more than 10 percent of the votes in the company, Helena Stjernholm, due to her capacity as President and CEO of AB Industrivärden, was not considered independent in relation to one of the company's major shareholders.



### Work procedures

Every year, the Board adopts work procedures for the Board's work.

The work procedures outline how the Board's duties should be distributed, including the specific role and duties of the Chairman, instructions for the division of duties between the Board and the President and for the reporting of financial information to the Board. The Board has also adopted specific instructions for the Board's committees, which are linked to the work procedures.

### The Board's work in 2019

The Board's work is mainly performed within the framework of formal Board meetings and through meetings in the respective committees of the Board. In addition, regular contact is maintained between the Chairman of the Board and the CEO in order to discuss ongoing business and to ensure that the Board's decisions are executed.

In 2019, there were nine regular Board meetings, one extraordinary Board meeting and one statutory Board meeting. The attendance of Board members at these meetings is presented in the table on page 195. The Company's auditor attended one Board meeting during the year.

During 2019, business cycle management has continued to be high on the Board's agenda and there was a high focus on volume flexibility in the industrial system and tight cost control across the organization.

Another focus area for the Board has been new technologies and, throughout the year, the Board has paid particular attention to the Group's strategic focus on disruptive technology trends and initiatives within the areas of digitalization, electrification and automation. During 2019, the Group entered into a number of strategic alliances and partnerships strengthening the Group's research and development of new technologies. Another focus area has been the strategy for the Group's truck business in Asia.

The Board also decided on an overall financial plan and investment framework for the Group's operations, including increased investments in R&D for both electrification and combustion engines to reduce CO<sub>2</sub> emissions. In addition, the Board regularly monitors the Group's earnings and financial position and maintains continuous focus on risk related issues such as overall risk management and ongoing legal disputes and investigations. Further, throughout the year, the Board has devoted considerable time to talent review and succession planning and on the review and follow-up of the Company's quality work.

By allocating time to business reviews of the Group's various truck divisions and business areas the Board remains continuously up-to-date on the status and development of the Group's operations. In June 2019, the Board visited the Company's operations in Skövde in Sweden and, in October 2019, the Board visited the Group's operations in Brazil.

One of the Board's committees, the Business Area Committee was replaced by the Technology and Business Transformation Committee in April 2019. The Board thereby strengthened its focus on new technologies and the development of new business models.

### Evaluation of the Board's work

In 2020, the Board performed its yearly evaluation of the Board's work during the previous year. The purpose of the evaluation is to further develop the Board's efficiency and working procedures and to determine the main focus of the Board's coming work. In addition, the evaluation serves as a tool for determining the competence required by the Board and for analyzing the competence that already exists in the current Board. By that, the evaluation also serves as input for the Election Committee's work with proposing Board members.

As part of the yearly evaluation, Board members were asked to complete a questionnaire and assess various areas related to the Board's work from their own perspective. The areas evaluated for 2019 included the Board's composition, the management and focus of Board meetings, Board support and how the Board addresses issues related to strategy, potential risks and succession planning. The areas covered by the evaluation may differ from one year to another to reflect the development of the Board's work and the Volvo Group.

Separate evaluations were conducted of the Board as a collective, of the Chairman of the Board, the Audit Committee, the Remuneration Committee and the Technology and Business Transformation Committee. The results of the evaluations of the Board as a collective and of the Chairman were discussed by the Board. The results of the evaluations of the committees were, or will be, discussed by the relevant committee. In addition, the results of the evaluations of the Board as a collective and of the Chairman are shared with the Election Committee.

### Remuneration of Board Members

The Annual General Meeting resolves on fees to be paid to the Board members elected by the Annual General Meeting. For information about Board remuneration adopted by the Annual General Meeting 2019, please refer to Note 27 in the Group's notes in the Annual and Sustainability Report.

#### Remuneration of Board members, 2019 (from AGM on April 3, 2019)

	SEK
Chairman of the Board	3,600,000
Board member <sup>1</sup>	1,060,000
Chairman of the Audit Committee	380,000
Member of the Audit Committee	175,000
Chairman of the Remuneration Committee	160,000
Member of the Remuneration Committee	115,000
Chairman of the Technology and Business Transformation Committee <sup>2</sup>	190,000
Member of the Technology and Business Transformation Committee <sup>2</sup>	160,000

<sup>1</sup> With the exception of the CEO.

<sup>2</sup> Previously named Business Area Committee.



## The Board's committees

### 5 AUDIT COMMITTEE

#### Duties

The Board has an Audit Committee primarily for the purpose of supervising the accounting and financial reporting processes and the audit of the annual financial statements.

The Audit Committee's duties include preparing the Board's work to assure the quality of the Group's financial reporting by reviewing interim reports, the Annual and Sustainability Report and the consolidated accounts. The Audit Committee also has the task of reviewing and overseeing the Group's legal and taxation matters as well as compliance with laws and regulations that may have a material impact on financial reporting. Furthermore, the Audit Committee has the task of reviewing and overseeing the impartiality and independence of the company's auditors. The Audit Committee is also responsible for evaluating both internal and external auditors' work and, when applicable, handling the tender process for audit services. In addition, it is the Audit Committee's task to preapprove what other services, beyond auditing, the company may procure from the auditors. The Audit Committee also adopts guidelines for transactions with companies and persons closely associated with Volvo. Finally, the Audit Committee evaluates the quality, relevance and effectiveness of the Group's system for internal control over financial reporting, as well as with respect to the internal audit and risk management, and discharge any other duties of an audit committee according to law or its instructions.

#### Composition and work in 2019

At the statutory Board meeting following the Annual General Meeting 2019, the following Board members were appointed members of the Audit Committee:

- Hanne de Mora
- Eric Elzvik
- Helena Stjernholm.

Hanne de Mora was appointed Chairperson of the Audit Committee.

The Audit Committee met with the external auditors without the presence of management on four occasions in 2019 in connection with Audit Committee meetings. The Audit Committee regularly met with the Head of Corporate Audit in connection with Audit Committee meetings.

According to the Swedish Companies Act, the members of the Audit Committee may not be employees of the company and at least one member of the Audit Committee shall be independent and have accounting or auditing expertise. In addition, the Code stipulates that a majority of the members of the Audit Committee shall be independent of the company and the company management, and that at least one of the members who is independent of the company and the company management shall also be independent of the company's major shareholders. The Election Committee's assessment of independence prior to the Annual General Meeting 2019 is presented above under the "Independence requirements" section on page 191.

The Audit Committee and the external auditors, among other tasks, discussed the external audit plan and the view of risk management. The Audit Committee held nine regular meetings and one extraordinary meeting during 2019. The attendance of Board members at the Committee meetings is presented in the table on page 195. The Audit Committee reports the outcome of its work to all members of the Board on a regular basis and the minutes of the Audit Committee meetings are distributed to Board members.



In October 2019, the Board visited the Group's operations in Brazil.

**6 REMUNERATION COMMITTEE***Duties*

The Board has a Remuneration Committee for the purpose of preparing and deciding on issues relating to the remuneration of senior executives in the Group. The duties of the Committee include making recommendations to the Board on the Board's decisions regarding terms of employment and remuneration of the CEO and the deputy CEO of AB Volvo, principles for the remuneration, including pensions and severance payments, of other members of the Group Executive Board and principles for variable salary systems, share based incentive programs and for pension and severance payment structures for other senior executives in the Group.

The Remuneration Committee shall also monitor and evaluate ongoing programs and programs concluded during the year for the variable remuneration of senior executives, application of the guidelines for the remuneration of senior executives on which the Annual General Meeting shall decide, and the current remuneration structures and levels in the Group.

The Board shall, no later than three weeks prior to the Annual General Meeting, present the results of the Remuneration Committee's evaluation on the company's website.

*Composition and work in 2019*

At the statutory Board meeting following the Annual General Meeting 2019, the following Board members were appointed members of the Remuneration Committee:

- Carl-Henric Svanberg
- Matti Alahuhta
- James W. Griffith
- Mikael Sällström.

Carl-Henric Svanberg was appointed Chairman of the Remuneration Committee.

The Code sets the requirement that members of the Remuneration Committee, with the exception of the Board Chairman if being a member of the Remuneration Committee, shall be independent of the company and company management. The Election Committee's assessment of the independence of members of the Remuneration Committee in accordance with the requirements in the Code, prior to the Annual General Meeting 2019, is presented under "Independence requirements" on page 191.

The Remuneration Committee held four meetings in 2019. The attendance of Board members at Committee meetings is presented in the table on page 195. The Remuneration Committee reports the outcome of its work to all members of the Board on a regular basis.

**7 TECHNOLOGY AND BUSINESS TRANSFORMATION COMMITTEE***Duties*

The Board's committee Business Area Committee was, in April 2019, replaced by the Technology and Business Transformation Committee, with focus on new technologies and the development of new business models.

*Composition and work in 2019*

At the statutory Board meeting following the Annual General Meeting 2019, the following Board members and deputy member were appointed members of the Technology and Business Transformation Committee:

- Carl-Henric Svanberg
- Matti Alahuhta
- Lars Ask
- Mari Larsson
- Kathryn V. Marinello
- Martina Merz
- Helena Stjernholm.

Carl-Henric Svanberg was appointed Chairman of the Technology and Business Transformation Committee.

The Technology and Business Transformation Committee held three meetings in 2019. The attendance of Board members at Committee meetings is presented in the table on page 195. The Technology and Business Transformation Committee reports the outcome of its work to all members of the Board on a regular basis.



## The Board's composition and attendance at meetings January 1, 2019 – December 31, 2019

Member	Board (11 incl. statutory)	Audit Committee (10)	Remuneration Committee (4)	Technology and Business Transformation Committee (3)
Carl-Henric Svanberg	11		4	3
Martin Lundstedt	11			
Matti Alahuhta	11		4	3
Eckhard Cordes	11			
Hanne de Mora	11	10		
Eric Elzvik	11	10		
James Griffith	11		4	
Kathryn Marinello	11			3
Martina Merz	11*			2
Helena Stjernholm	11	10		3
Lars Ask, employee representative	8			2
Mats Henning, employee representative	11			
Camilla Johansson, employee representative	11			
Mari Larsson, employee representative	11			3
Mikael Sällström, employee representative	11		4	
<b>Total number of meetings</b>	<b>11</b>	<b>10</b>	<b>4</b>	<b>3</b>

\*December 2019 two-day Board meeting: present one day.



## BOARD OF DIRECTORS

### BOARD MEMBERS ELECTED BY THE ANNUAL GENERAL MEETING



**Carl-Henric Svanberg**  
Chairman of the Board,  
Chairman of the Remuneration  
Committee, Chairman of the  
Technology and Business  
Transformation Committee



**Matti Alahuhta**  
Member of the Remuneration  
Committee, Member of the  
Technology and Business  
Transformation Committee



**Eckhard Cordes**



**Hanne de Mora**  
Chairman of the Audit  
Committee



**Eric Elzvik**  
Member of the Audit  
Committee

	Carl-Henric Svanberg	Matti Alahuhta	Eckhard Cordes	Hanne de Mora	Eric Elzvik
<b>Education</b>	MSc in Applied Physics, Linköping Institute of Technology, BSc Business Administration, University of Uppsala.	MSc, Dr Sc. Doctor of Science, Helsinki University of Technology.	MBA and PhD, University of Hamburg.	BA in Economics from HEC in Lausanne, MBA from IESE in Barcelona.	MSc Business Administration, Stockholm School of Economics.
<b>Born</b>	1952	1952	1950	1960	1960
<b>Member of the Volvo Board</b>	Chairman of the Volvo Board since April 4, 2012.	Since April 2, 2014.	Since April 1, 2015.	Since April 14, 2010.	Since April 5, 2018.
<b>Position and Board memberships</b>	Chairman of the Academy: The Royal Swedish Academy of Engineering Sciences (IVA) and Chairman of the European Round Table of Industrialists.	Board Chairman: DevCo Partners Oy and Outotec Corporation. Board member: Kone Corporation and ABB Ltd.	Partner in Cevian Capital and EMERAM Capital Partners. Board Chairman: Bilfinger SE. Member of the Executive Committee of Eastern European Economic Relations of German Industry.	Board Chairperson: a-connect (group) ag. Board Member: IMD Supervisory Board and Outotec Oy.	Board Chairman: IP-Only/GlobalConnect Group. Board member: Telefonaktiebolaget LM Ericsson, Landis+Gyr Group AG, Fenix Marine Services and VFS Global.
<b>Principal work experience</b>	Has held various positions at Asea Brown Boveri (ABB) and Securitas AB, President and CEO of Assa Abloy AB, President and CEO of Telefonaktiebolaget LM Ericsson, member of the External Advisory Board of the Earth Institute at Columbia University, the Advisory Board of Harvard Kennedy School and Board Chairman of BP plc.	Has held several management positions in the Nokia Group – President of Nokia Telecommunications, President of Nokia Mobile Phones and Chief Strategy Officer of the Nokia Group, President of Kone Corporation between 2005–2014 and between 2006–2014 also CEO.	Started within Daimler Benz AG in 1976, where he has held several management positions, such as Head of the trucks and buses business, Head of Group Controlling, Corporate Development and M&A in AEG AG and CEO of Mercedes Car Group. Previously CEO of Metro AG, senior advisor at EQT and Board member of Air Berlin, SKF, Carl Zeiss and Rheinmetall AG. Since 2012 partner in Cevian Capital and EMERAM Capital Partners respectively.	Credit Analyst Den Norske Creditbank in Luxembourg 1984. Various positions within brand management and controlling within Procter & Gamble 1986–1989, Partner McKinsey & Company, Inc. 1989–2002, one of the founders and owners, also Board Chairperson of the global consulting firm and talent pool a-connect (group) ag since 2002.	Joined ABB in 1984 and has held several management positions in the Finance function at ABB in Sweden, Singapore and Switzerland – most recently as Group CFO between 2013 and 2017 and previously as CFO for the Divisions Discrete Automation & Motion and Automation Products and a position as Head of Mergers & Acquisitions and New Ventures and also as Head of Corporate Development. Industrial advisor to private equity.
<b>Holdings in Volvo, own and related parties</b>	2,000,000 Series B shares.	146,100 Series B shares.	None.	6,000 Series B shares.	7,475 Series B shares.

### BOARD MEMBERS APPOINTED BY THE EMPLOYEE ORGANISATIONS



**Lars Ask**  
Employee representative, ordinary member  
Member of the Technology and Business  
Transformation Committee








**Mats Henning**  
Employee representative, ordinary member





**Mikael Sällström**  
Employee representative, ordinary member  
Member of the Remuneration Committee


	Lars Ask	Mats Henning	Mikael Sällström
<b>Born</b>	1959	1961	1959
<b>Member of the Volvo Board</b>	Ordinary member since April 6, 2016. Deputy member from June 16, 2009–2016.	Since May 9, 2014.	Since September 7, 2009.
<b>Background within Volvo</b>	With Volvo since 1982.	With Volvo since 1982.	With Volvo 1980–1999 and since 2009.
<b>Holdings in Volvo, own and related parties</b>	None.	293 Series A shares, 500 Series B shares.	293 Series A shares.

				
<b>James W. Griffith</b> <i>Member of the Remuneration Committee</i>	<b>Martin Lundstedt</b> <i>President and CEO</i>	<b>Kathryn V. Marinello</b> <i>Member of the Technology and Business Transformation Committee</i>	<b>Martina Merz</b> <i>Member of the Technology and Business Transformation Committee</i>	<b>Helena Stjernholm</b> <i>Member of the Audit Committee, Member of the Technology and Business Transformation Committee</i>
BSc Industrial Engineering, MBA from Stanford University.	MSc, Chalmers University of Technology.	BA from State University of New York at Albany, MBA from Hofstra University.	BS from University of Cooperative Education, Stuttgart.	MSc Business Administration, Stockholm School of Economics.
1954	1967	1956	1963	1970
Since April 2, 2014.	Since April 6, 2016.	Since April 2, 2014.	Since April 1, 2015.	Since April 6, 2016.
Board member: Illinois Tool Works Inc.	President and CEO of AB Volvo. Board Chairman: Permobil AB. Board Member: ACEA Commercial Vehicle and Concentric AB. Member of the Royal Swedish Academy of Engineering Sciences (IVA). Advisory Member of the Swedish National Innovation Council.	President and CEO of Hertz Global Holdings.	President and CEO of Thyssenkrupp AG. Board Member: Deutsche Lufthansa AG (supervisory board), SAF Holland SA and Imerys SA.	President and CEO of AB Industrivärden. Board Member: AB Industrivärden, Sandvik AB and Telefonaktiebolaget LM Ericsson.
Began his career at The Timken Company in 1984, where he has held several management positions, such as responsible for Timken's bearing business activities in Asia, the Pacific and Latin America and for the company's automotive business in North America. Until 2014 President and CEO at Timken Company.	President and CEO of Scania 2012–2015. Prior to that, various managerial positions at Scania since 1992. Co-chairman of the UN Secretary-General's High-Level Advisory Group on Sustainable Transport 2015–2016.	Has held several management positions at Citibank, Chemical Bank New York (now JP Morgan Chase), First Bank Systems and First Data Corporation, Division President General Electric Financial Assurance Partnership Marketing and Division President General Electric Fleet Services, President and CEO of Ceridian Corporation and subsequently also Chairman, Board Chairman, President and CEO of Stream Global Services, Inc. Senior Advisor, Ares Management, LLC. Board Member of Nielsen, RealPage, General Motors Co. and MasterCard US.	Until January 2015, CEO for Chassis Brakes International. Has, during almost 25 years held various management positions in Robert Bosch GmbH, most recently as Executive Vice President Sales and Marketing in the Chassis System Brakes division combined with responsibility for regions China and Brazil and previously CEO of the subsidiary Bosch Closure Systems, also member of the Board of Management of Brose Fahrzeugteile GmbH & Co.	Between 1998–2015, employed by the private equity firm IK Investment Partners (former Industri Kapital) where she held various positions. She was a Partner with responsibility for the Stockholm office. She was also a member of IK's Executive Committee. Prior to that she worked as a consultant for Bain & Company.
40,000 Series B shares.	191,884 Series B shares.	None.	4,500 Series B shares.	8,000 Series B shares.

## DEPUTIES APPOINTED BY THE EMPLOYEE ORGANISATIONS

	
<b>Camilla Johansson</b> <i>Employee representative, deputy member</i>	<b>Mari Larsson</b> <i>Employee representative, deputy member</i> <i>Member of the Technology and Business Transformation Committee</i>
1966	1978
Deputy member since April 6, 2016.	Deputy member since May 22, 2015.
With Volvo since 1997.	With Volvo since 2004.
643 Series A shares.	605 Series A shares.

## SECRETARY TO THE BOARD


<b>Sofia Frändberg</b> <i>Secretary to the Board</i> <i>Master of Laws</i>
1964
Secretary to the Board since April 1, 2013.
Executive Vice President Group Legal & Compliance and General Counsel.
1,738 Series A shares, 67,624 Series B shares.



## 8 EXTERNAL AUDITING

Volvo's auditors are elected by the Annual General Meeting. The auditors review the interim report for the period January 1 to June 30 and audit the annual financial statements and consolidated accounts. The auditors also review the Corporate Governance Report and confirms whether the Group has presented a Sustainability Report. The auditors report the results of their audit in the Audit Report and in an opinion on the Corporate Governance Report, and provides an opinion on whether the guidelines for remuneration to senior executives have been complied with, which they present to the Annual General Meeting.

The current auditor Deloitte AB, was elected at the Annual General Meeting 2018 for a period of four years. Jan Nilsson is responsible for the audit of Volvo and Auditor-in-Charge.

For information about Volvo's remuneration of the auditors, please refer to Note 28 "Fees to the auditors" in the Group's notes in the Annual and Sustainability Report.

## 9 CORPORATE AUDIT

Volvo's internal audit function, Corporate Audit, supports Volvo in enhancing and protecting organizational value by providing risk-based, independent and objective assurance, advice and insight. Corporate Audit helps the organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and to improve the effectiveness of risk management, control and governance processes.

Corporate Audit performs internal audits in selected focus areas, identified through an independent risk assessment process and approved by the Audit Committee. In addition, special assignments requested by management and the Audit Committee are performed. The audits cover, among other things, assessments on the adequacy and effectiveness of the organization's processes for controlling its activities and managing its risks and evaluation of compliance with policies and directives.

Corporate Audit also assists in investigations of suspected breaches of the Code of Conduct and of suspected fraudulent activities within the organization and coordinates and provides oversight of other control and monitoring functions.

The head of Corporate Audit reports directly to the CEO, the Group's General Counsel and the Board's Audit Committee.

For additional information on internal control over financial reporting, see pages 204–205.

## 10 GOVERNANCE PRINCIPLES AND ORGANIZATIONAL STRUCTURE

### Volvo's strategy

The Volvo Group's mission is to "Drive prosperity through transport solutions". The Group's products and services are continuously developed to support sustainable societies and the well-being and safety of people. With this mission in mind, the Volvo Group strives to achieve its vision to be the most desirable and successful transport solution provider in the world.

The Volvo Group's aspirations are to have leading customer satisfaction for all of its brands in each segment; to be the most admired employer in the industry and to have industry leading profitability. The Group's values – Customer Success, Trust, Passion, Change and Performance – are the cornerstone of the Group's company culture. The Volvo Group Code of Conduct clearly defines expectations on the way the Group runs its business – not just in a few places, but wherever the Group operates. The Code of Conduct summarizes what the Volvo Group stands for and what Volvo expects from its employees. Seven strategic priorities set the direction for the Group. They describe the key fundamentals of the Volvo Group strategy such as customer focus, decentralization, empowerment and P&L responsibility for its brand organizations, continuous improvements as well as the importance of utilizing the Group strengths to increase synergies, profitability and to take leadership in key technologies.

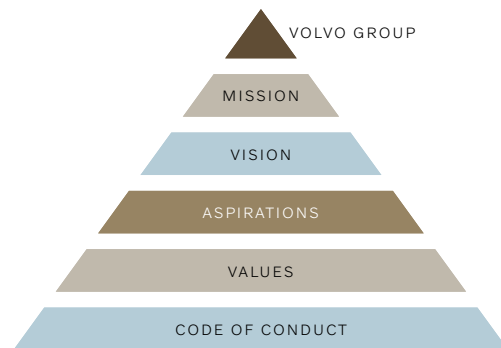
Based on the Group's strategic priorities, each Business Area defines its own operational plans. The long-term plans, such as the Group's industrial and product plans, are also crucial parts of the Group's strategic direction.

### Governance documents

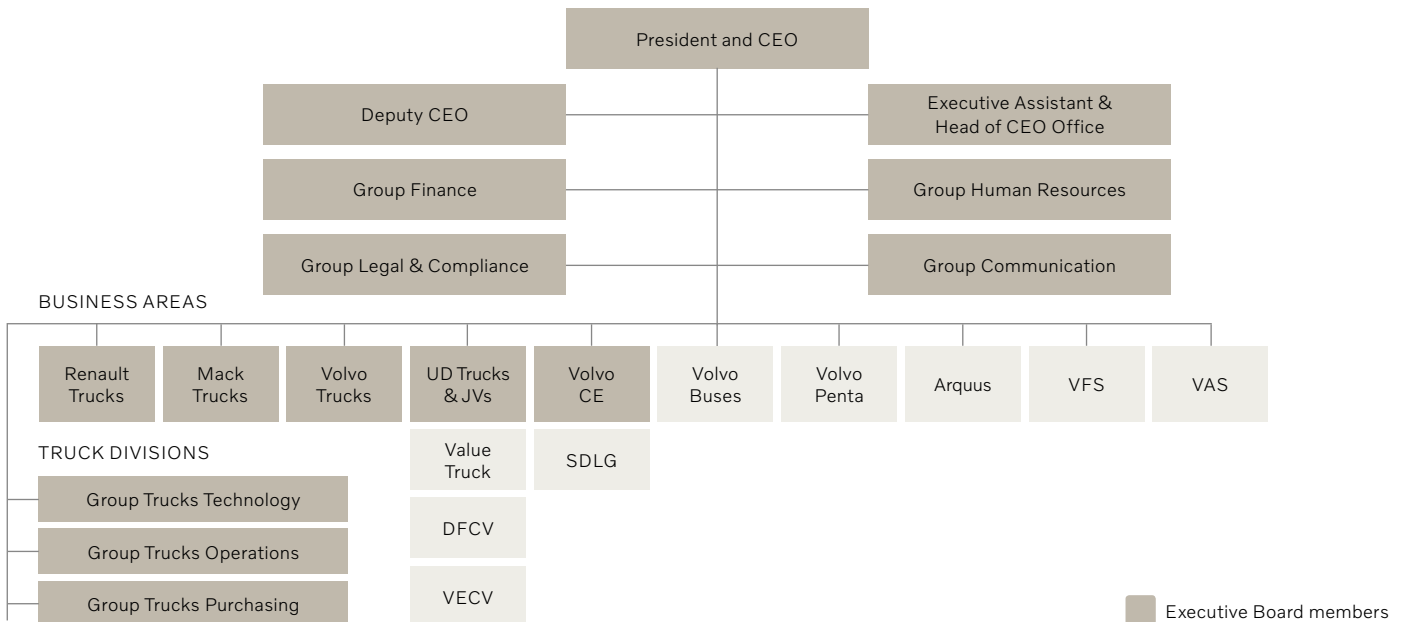
Another key component of the Group's governance is its policies and directives, such as the Code of Conduct and policies pertaining to investments, financial risks, accounting, financial control and internal audit, which contain Group-wide operating and financial rules for the operations, as well as responsibility and authority structures.

### Organizational structure

The business of the Volvo Group was organized into nine Business Areas during 2019. Of these, four represent brand-specific Business Areas for trucks: Volvo Trucks, Mack Trucks, Renault Trucks and UD Trucks and JVs, each with profit and loss responsibility for their respective business. The other Business Areas are Volvo Construction Equipment, Volvo Buses, Volvo Penta, Volvo Financial Services (VFS) and Arquus.



### Volvo Group organization



## » Governance principles and organizational structure (cont.)

From 1 January 2020 Volvo Autonomous Solution (VAS) was established as a new business area, focusing on the development, commercialization and sales of autonomous transport solutions, and since then the Volvo Group is organized in ten Business Areas.

The Trucks Business is further organized into three divisions: Group Trucks Technology (GTT), Group Trucks Operations (GTO) and Group Trucks Purchasing (GTP).

GTT is responsible for product development of engines, transmissions and trucks. GTO is responsible for the production of trucks and the Group's engines and transmissions, as well as for the Group's spare parts supply and logistics operation. GTP has overall responsibility for purchasing for the Group's trucks, engines and transmissions operations as well as for the Group's purchase of indirect products and services.

In addition, there are four Group Functions: Group Human Resources, Group Finance, Group Communication and Group Legal & Compliance, tasked with supporting the CEO and the Group Executive Board with expertise within each Group Function area and with developing standards for the entire organization through policies, directives and guidelines. In addition, there are other functions that provide services and/or products for the entire Group, such as Group IT and Accounting & Company Control.

With this governance model, Volvo can utilize the synergies of having global organizations for manufacturing, product development and purchasing, while maintaining clear leadership and responsibility for each truck brand to make sure that customer needs are met. The aim of the governance model is that all Business Areas are driven according to the same distinct business principles, whereby each Business Area can follow and optimize its own earnings performance in the long and short term.

**11 GROUP EXECUTIVE BOARD AND GROUP MANAGEMENT**

The Group Executive Board comprises 15 members.

In addition to the CEO and the deputy CEO, the Group Executive Board comprises the Executive Vice Presidents of the three Group Truck Divisions, the Executive Vice Presidents of the five Business Areas Volvo Trucks, Mack Trucks, Renault Trucks, UD Trucks and JVs and Volvo Construction Equipment, and the Executive Vice Presidents of the four Group Functions. The members of the Group Executive Board report directly to the CEO. On 1 January, 2020 Scott Raffin assumed the position as Executive Vice President and Chief Digital Officer and joined the Group Executive Board.

The Presidents of the Business Areas Volvo Buses, Volvo Penta, Arquus, VFS and Volvo Autonomous Solutions also report directly to the CEO and are part of an extended Group Management Team together with the members of the Group Executive Board. In addition, the President of the new Business Area, Volvo Autonomous Solutions, joined the Group Management Team from 1 January 2020.

The CEO is responsible for managing the day-to-day operations of the Volvo Group and is authorized to make decisions on matters that do not require Board approval. The CEO leads the operations of the Group mainly through the Group Executive Board and the extended Group Management Team.

Key decisions related to the Group's offering and technology portfolio are made by the Product Board.

Quality-related matters are addressed in the Quality Board in order to support fast decision-making and customer focus in this area.

At special meetings for Sales & Operations Planning (S&OP), decisions are made regarding a production plan aimed at optimizing the Volvo Group's overall profitability. The purpose of the meetings is to balance demand with supply chain capabilities, drive capacity management and provide directions for the Group's sales and operations activities.

All of the above bodies affect control and monitoring of the Group's financial development, strategies and targets, and make decisions regarding investments and other matters.

**Remuneration of the Group Executive Board**

Annually, AB Volvo's Annual General Meeting resolves on a policy for remuneration of the Group Executive Board, based on a proposal from the Board. For information about the remuneration policy adopted by the Annual General Meeting 2019, please refer to Note 27 "Personnel" in the Group's notes in the Annual and Sustainability Report.

**Changes to the Group Executive Board**

On January 1, 2019 Diana Niu assumed the position as Executive Vice President Group Human Resources for the Volvo Group, replacing Kerstin Renard, and joined the Group Executive Board. In addition, on January 1, 2019 Roger Alm assumed the position as President Volvo Trucks and joined the Group Executive Board. On 1 January, 2020 Scott Rafkin assumed the position as Executive Vice President and Chief Digital Officer and joined the Group Executive Board.






Martin Lundstedt, President and CEO, at the Annual General Meeting 2019.

## GROUP EXECUTIVE BOARD

							
	<b>Martin Lundstedt</b> <i>President and CEO</i>	<b>Jan Gurander</b> <i>Deputy CEO</i>	<b>Roger Alm</b> <i>Executive Vice President Volvo Group and President Volvo Trucks</i>	<b>Bruno Blin</b> <i>Executive Vice President Volvo Group and President Renault Trucks</i>	<b>Sofia Frändberg</b> <i>Executive Vice President Group Legal &amp; Compliance and General Counsel</i>	<b>Andrea Fuder</b> <i>Executive Vice President Volvo Group Trucks Purchasing and Chief Purchasing Officer for Volvo Group</i>	<b>Melker Jernberg</b> <i>Executive Vice President Volvo Group and President Volvo Construction Equipment</i>
Education	MSc.	MSc.		MBA.	Master of Laws.	MSc and MBA.	MSc Mechanical Engineering.
Born	1967	1961	1962	1963	1964	1967	1968
Principal work experience	President and CEO of AB Volvo and member of the Group Executive Board since October 2015. President and CEO of Scania 2012–2015. Prior to that, various managerial positions at Scania since 1992. Co-chairman of the UN Secretary-General's High-Level Advisory Group on Sustainable Transport 2015–2016.	Deputy CEO & CFO 2016–2018. CFO & Executive Vice President Volvo Group 2014–2016. CFO & Senior Vice President Finance Volvo Car Corporation 2011–2013. CFO MAN Diesel & Turbo SE 2010. CFO MAN Diesel SE 2008–2009. Group Vice President and CFO Scania AB 2001–2006. President of Business Unit Finance AB Volvo 1999–2001. Senior Vice President & Finance Director Scania AB 1998–1999. Member of the Group Executive Board since 2014. With Volvo 1999–2001 and since 2014.	Senior Vice President Volvo Trucks Europe 2016–2018. Senior Vice President Volvo Group Trucks Northern Europe 2015–2016. President Volvo Group Trucks Latin America 2012–2014. President Volvo Trucks Latin America 2010–2011. Managing Director Volvo Trucks, Region East 2004–2009. With Volvo since 1989. Member of the Group Executive Board since January 2019.	After having worked for several companies in the manufacturing, quality and purchasing areas, he joined Renault Trucks Purchasing in 1999. Has held several senior positions over the years until being appointed Senior Vice President of Volvo Group Purchasing. Has also served as Senior Vice President, Group Truck Sales South Europe January 2013–2016. Member of the Group Executive Board since March 2016. With Volvo since 1999.	Responsible for Group Legal & Compliance and General Counsel of the Volvo Group since April 2013. Head of Corporate Legal at AB Volvo 1998–2013. Corporate Legal Counsel at AB Volvo 1994–1997. Member of the Group Executive Board since April 2013. With Volvo since 1994.	Has worked in Quality and Logistic and held various senior positions at Volkswagen's Purchasing organization since 1992. Head of Purchasing at Scania 2012–2016. Member of the Group Executive Board since 2017. With Volvo since 2017.	CEO and President at Högåns AB 2014–2017. Executive Vice President, Business Area EMEA at SSAB 2011–2014. Has held various positions at Scania AB since 1989, most recently as Senior Vice President Buses and Coaches at Scania AB 2007–2011. Member of the Group Executive Board since 2018.
Board memberships	Chairman of Permobil AB. Board Member of ACEA Commercial Vehicle and Concentric AB. Member of the Royal Swedish Academy of Engineering Sciences (IVA) and Advisory member of the Swedish National Innovation Council.	Board Member of Teknikföretagen and Skanska AB.			Secretary to the AB Volvo Board since April 2013.		
Holdings in Volvo, own and related parties	191,884 Series B shares.	73,825 Series B shares.	398 Series A shares, 14,918 Series B shares.	25,165 Series B shares.	1,738 Series A shares, 54,212 Series B shares.	1,600 Series A shares, 36,348 Series B shares.	17,277 Series B shares.



							
<b>Diana Niu</b> <i>Executive Vice President Group Human Resources</i>	<b>Jan Ohlsson</b> <i>Executive Vice President Group Trucks Operations</i>	<b>Scott Rafkin</b> <i>Executive Vice President and Chief Digital Officer for Volvo Group</i>	<b>Joachim Rosenberg</b> <i>Executive Vice President Volvo Group and Chair- man of UD Trucks</i>	<b>Lars Stenqvist</b> <i>Executive Vice President Group Trucks Technology</i>	<b>Martin Weissburg</b> <i>Executive Vice President Volvo Group and Presi- dent Mack Trucks</i>	<b>Kina Wileke</b> <i>Executive Vice President Group Communication</i>	<b>Jan Ytterberg</b> <i>Executive Vice President Group Finance and CFO</i>
MBA and BA in Economics.	MSc.	BBA (Bachelors in Business Administration), University of Massachusetts at Amherst.	MSc Industrial Engineering and Management, MSc Financial Economics, MSc Business and Economics.	MSc Industrial Engineering.	Master of Business Management, BSc Industrial Management.	MA in journalism.	MSc in Business Administration and Economics.
1966	1953	1969	1970	1967	1962	1974	1961
Joined Volvo Group in February 2005, with SVP HR jobs in two Business Areas, Trucks Asia Pacific and Volvo Construction Equipment. Worked for Ericsson from July 1993 to January 2005 in a number of leadership positions. Member of the Group Executive Board since January 2019.	Senior Vice President Powertrain Production Group Trucks Operations 2012–2016. 2001–2012 General Manager European Manufacturing Volvo Trucks. Member of the Group Executive Board since April 2016. With Volvo since 1979.	Executive Vice President and Chief Digital Officer Volvo Group since 2020. President Volvo Financial Services 2014–2019. Chief Financial Officer Volvo Financial Services 2010–2014. Senior Vice President Global Operations Volvo Financial Services 2003–2009. Senior Vice President Risk Volvo Financial Services 2001–2002. Prior to 2001, held several senior positions with Volvo Car Finance North America. Prior to Volvo, Business Assurance and Capital Markets Manager Coopers & Lybrand LLC (predecessor firm to PriceWaterhouseCoopers).	Executive Vice President Volvo Group and Chairman UD Trucks 2016–. Executive Vice President Group Trucks Sales 2015–2016. Executive Vice President APAC 2012–2014. President Volvo Group Asia Truck Operations 2007–2011. Vice President Volvo Group Alliance Office 2007. Vice President Volvo Powertrain 2005–2007. Consultant with McKinsey & Company 1996–2004. Member of the Group Executive Board since 2012. With Volvo since 2005.	Executive Vice President Group Trucks Technology and Volvo Group Chief Technology Officer since October 2016. Head of R&D and CTO at Volkswagen Truck & Bus 2015–2016. Senior Vice President Vehicle Definition R&D at Scania 2007–2015. Prior to that various senior positions at Scania since 1992. Member of the Group Executive Board since 10 October 2016. With Volvo Group since October 2016.	President Mack Trucks since 2018. President Volvo Construction Equipment 2014–2017. President & CEO Volvo Financial Services 2010–2014. President Volvo Financial Services Americas 2005–2010. Prior to Volvo, President Woodard LLC, President Great Dane Financial Services and Senior Vice President ORIX. Member of the Group Executive Team 2010–2014. Member of the Group Executive Board since March 2016.	Responsible for Group Communications since 2018. With the Volvo Group since 2008, most recently as Senior Vice President Brand, Communication & Marketing Volvo Penta 2016–2017, Senior Vice President External Corporate Communication Volvo Group 2012–2016 and CEO Communication Volvo Group 2008–2012. Has held a number of positions in TV4 Group 1998–2008. Member of the Group Executive Board since 2018.	CFO of Husqvarna Group 2015–2018. Executive Vice President and CFO of Scania Group 2006–2015. Various positions in accounting and finance, Scania Group 1987–2006. Member of the Group Executive Board since November 2018.
			Volvo Group representative for Japan Automobile Manufacturers Association (JAMA).			Board Member of Handelsbanken Regionbanken Västra Sverige and International Chamber of Commerce (ICC), Sweden.	Board Member of Madrague.
46,022 Series B shares.	45,568 Series B shares.	45, 120 Series B shares.	87 Series A shares, 190,143 Series B shares.	23,789 Series B shares.	111,863 Series B shares.	344 Series A shares, 14,840 Series B shares.	2,031 Series B shares.

## 12 INTERNAL CONTROL OVER FINANCIAL REPORTING

The Board is responsible for the internal controls according to the Swedish Companies Act and the Code. The purpose of this report is to provide shareholders and other interested parties with an understanding of how internal control is organized at Volvo with regard to financial reporting. The description has been designed in accordance with the Swedish Annual Accounts Act and is thus limited to internal control over financial reporting.

### Introduction

Volvo has a function for internal control with the objective to provide support for management, allowing them to continuously provide solid internal controls relating to financial reporting. Work that is conducted through this function is primarily based to ensure compliance with directives and policies, and to create effective conditions for specific control activities in key processes related to financial reporting. The Audit Committee is regularly informed of the results of the work performed by the Internal Control function within Volvo with regard to risks, control activities and follow-up on the financial reporting.

Volvo also has an internal audit function, Corporate Audit, which among other things, independently monitors that companies in the Group follow the principles and rules that are stated in the Group's directives, policies and instructions for financial reporting. The head of the Corporate Audit function reports directly to the CEO, to the Group's General Counsel and the Board's Audit Committee.

### Control environment

Fundamental to Volvo's control environment is the business culture that is established within the Group and in which managers and employees operate. Volvo works actively on communication and training regarding the company's basic values included in the Group's Code of Conduct, to ensure that the business conducted by the organization is characterized by good ethics, integrity and is in compliance with the law.

The foundation of the internal control process relating to the financial reporting is based on the Group's directives, policies and instructions, as well as the organization's responsibility and authority structure. The principles for Volvo's internal controls and directives and policies for the financial reporting are contained in the Volvo Group Management System, a group wide management system comprising, among other things, instructions, rules and principles.

### Risk assessment

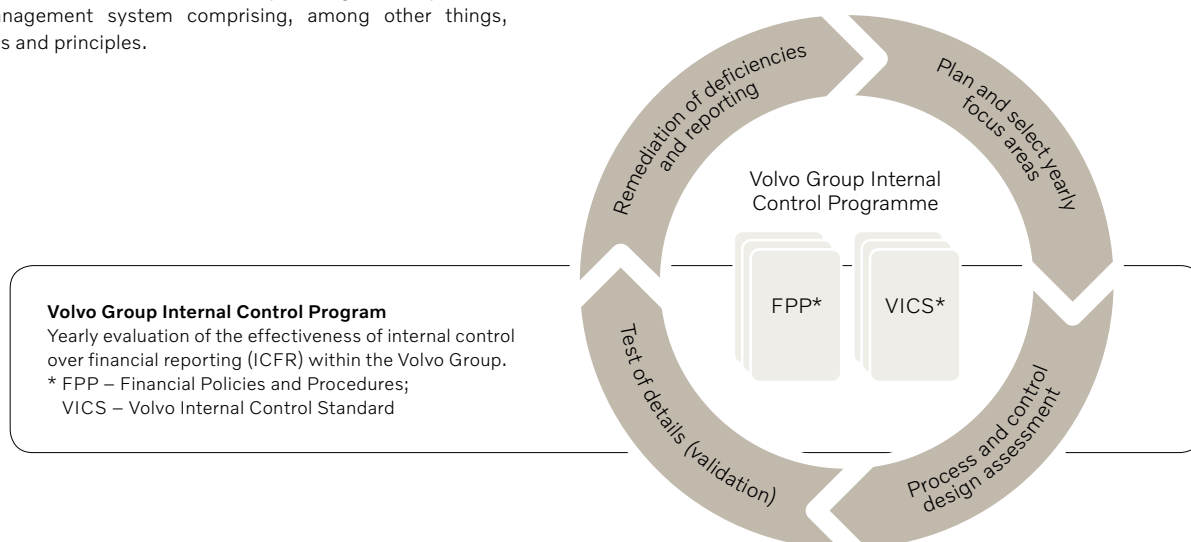
Risks relating to financial reporting are evaluated and monitored by the Board through the Audit Committee inter alia through identifying risks that could be considered as material, and through the mitigating control objectives. The risk assessment is based on a number of criteria, such as the complexity of the accounting principles, revaluation principles of assets or liabilities, complex and/or changing business circumstances, etc. The risks together with mitigating control objectives are collected in a framework for internal control over financial reporting, Volvo Internal Control Standard (VICS).

### Control activities

In addition to the Board of Directors of AB Volvo and its Audit Committee, the management groups and other decision-making bodies in the Group constitute overall supervisory bodies. Business processes are designed to ensure that potential errors or deviations in the financial reporting are prevented, discovered and corrected by implementing control activities that correspond to the control objectives defined in the VICS framework. Control activities range from review of outcome results against earlier periods and forecasts in management group meetings to specific reconciliation of accounts and analyses of the ongoing processes for financial reporting.

### Information and communication

Policies and instructions relating to the financial reporting are updated and communicated on a regular basis from management to all affected employees. The Group's financial reporting function has direct operating responsibility for the daily financial reporting and works to ensure a uniform application of the Group's policies, principles and instructions for the financial reporting and to identify and communicate shortcomings and areas of improvement in the processes for financial reporting.



**Follow-up**

Ongoing responsibility for follow-up rests with the Group's financial reporting function. In addition, the Corporate Audit and the Internal Control function conduct review and follow-up activities in accordance with what is described in the introduction of this report. More specifically, the Internal Control function runs and coordinates evaluation activities through the "Volvo Group Internal Control Programme", with the purpose of systematically evaluating the quality of the internal control over financial reporting on an annual basis. An annual evaluation plan is established and presented to the Audit Committee. This evaluation program comprises three main areas:

1. Group-wide controls: Self-assessment procedure carried out by management teams at business area, Group Function and company levels. The main areas evaluated are compliance with the Group's financial directives and policies and the Group's Code of Conduct.
2. Process controls at transaction level: Processes related to the financial reporting are evaluated by testing procedures/controls based on the framework for internal control over financial reporting, Volvo Internal Control Standards (VICS).
3. General IT controls: Processes for maintenance, development and access management of financial applications are evaluated by testing procedures and controls.

The results of the evaluation activities are reported to Group management and the Audit Committee. During 2019, the Internal Control function reported four times to the Audit Committee regarding the annual evaluation plan, status on outstanding issues and final assessment of the control environment.

Göteborg, February 24, 2020

AB Volvo (publ)  
The Board of Directors

## AUDITOR'S REPORT ON THE CORPORATE GOVERNANCE STATEMENT

To the Annual General Meeting of the shareholders of AB Volvo, corporate identity number 556012-5790

**Engagement and responsibility**

The Board of Directors is responsible for that the corporate governance statement on pages 188–205 has been prepared in accordance with the Annual Accounts Act.

**The scope of the audit**

Our examination of the corporate governance statement is conducted in accordance with FAR's auditing standard RevU 16 The auditor's examination of the corporate governance statement. This means that our examination of the corporate governance statement is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinions.

**Opinion**

A corporate governance statement has been prepared. Disclosures in accordance with chapter 6 section 6 the second paragraph points 2–6 of the Annual Accounts Act and chapter 7 section 31 the second paragraph the same law are consistent with the other parts of the annual accounts and consolidated accounts and are in accordance with the Annual Accounts Act.

Göteborg, February 24, 2020

Deloitte AB

Jan Nilsson  
Authorized Public Accountant

# PROPOSED POLICY FOR REMUNERATION TO SENIOR EXECUTIVES

## **The Board of Directors' of AB Volvo (publ) proposal for guidelines for executive remuneration (remuneration policy)**

These guidelines (AB Volvo's remuneration policy) concern the remuneration and other terms of employment for the members of the Volvo Group Executive Board ("Executives").

The guidelines are forward-looking, i.e. they are applicable to remuneration agreed, and amendments to remuneration already agreed, after the proposed adoption of these guidelines by the 2020 annual general meeting. These guidelines do not apply to any remuneration decided or approved by the general meeting. Any new share-based incentive plans will, where applicable, be resolved by the general meeting, but no such plan is currently proposed.

### *The guidelines' promotion of the Volvo Group's business strategy, long-term interests and sustainability*

It is a prerequisite for the successful implementation of the Volvo Group's business strategy and safeguarding of its long-term interests, including its sustainability, that the Group can recruit, retain and develop top executives. These guidelines enable AB Volvo to offer Executives a competitive total remuneration. More information regarding the Volvo Group's business strategy is available in the Volvo Group Annual and Sustainability Report.

### *Types of remuneration*

Volvo Group remuneration to Executives shall consist of the following components: base salary, short-term and long-term variable incentives, pension benefits and other benefits.

Short-term incentives may, for the President & CEO, amount to a maximum of 100 per cent of the base salary and, for other Executives, a maximum of 80 per cent of the base salary.

Long-term incentives may, for the President & CEO, amount to a maximum of 100 per cent of the base salary and, for other Executives, a maximum of 80 per cent of the base salary. The current long-term incentive plan for the Group's top executives, including the Executives, was introduced in connection with the 2016 annual general meeting. The objective of the program is to align the interests of the top executives with those of the Group shareholders. The program does that by a combination of a performance based award and a requirement to purchase and hold AB Volvo shares. The program is funded on an annual basis by an award, measured against performance criteria established by the Board of Directors. The after tax portion of this payment must be immediately invested in AB Volvo shares which must be held for a minimum of three years. In this way, the top executives are rewarded for the performance of the Group each year, and will have a vested interest over the longer term in changes in the value of the shares. At the end of the three year period, top executives may sell their shares, if they meet the requirement for owning shares valued at two years of the pre-tax base salary for the President & CEO and one year of the pre-tax base salary for the other Executives. The holding requirements for the Executives shall cease upon termination of an Executive's employment, and the Board of Directors may grant such other exceptions to the requirements as the Board deems appropriate.

Further cash remuneration may be awarded in extraordinary circumstances, provided that such extraordinary arrangements are limited in time and only made on an individual basis, either for the purpose of recruiting or retaining Executives, or as remuneration for extraordinary performance beyond the individual's ordinary tasks. Such remuneration may not exceed an amount corresponding to 100 per cent of the annual base salary. Any resolution on such remuneration shall be made by the Board of Directors based on a proposal from the Remuneration Committee.

For the President & CEO, pension benefits shall be granted on the basis of a defined contribution plan except where law or collective agreement would require a defined benefit pension. The pensionable salary shall include base salary and short-term incentives. The pension contributions for the President & CEO attributable to the annual base salary shall amount to not more than 35 per cent of the base salary, and contributions attributable to short term incentives shall not exceed the corresponding proportion.

Other benefits may include, for example, life insurance, medical and health insurance, and company cars. Premiums and other costs relating to such benefits may amount to not more than 3 per cent of the annual base salary for the President & CEO.

For other Executives, pension benefits shall be granted on the basis of a defined contribution except where law or collective agreement require a defined benefit pension. The pensionable salary shall include base salary and short-term incentives. The pension contributions for other Executives attributable to the annual base salary shall amount to not more than 40 per cent of the base salary and contributions attributable to short term incentives shall not exceed the corresponding proportion.

Other benefits may include, for example, life insurance, medical and health insurance, and company cars. Premiums and other costs relating to such benefits may amount to not more than 10 per cent of the annual base salary for other Executives.

Remuneration for Executives that reside outside Sweden or reside in Sweden but having a material connection to or having been residing in a country other than Sweden may be duly adjusted to comply with mandatory rules or local practice, taking into account, to the extent possible, the overall purpose of these guidelines.

In addition to remuneration set out above, Executives who relocate for the purposes of the position or who work in other multiple countries may also receive such remuneration and benefits as are reasonable to reflect the special circumstances associated with such arrangements, taking into account the overall purpose of these guidelines and alignment with the general policies and practices within the Volvo Group applicable to cross border work.

### *Termination of employment*

Upon termination of an Executive's employment, the notice period may not exceed twelve months. Base salary during the notice period and severance pay may not together exceed an amount corresponding to the base salary for two years.

Executives that reside outside Sweden or reside in Sweden but having a material connection to or having been residing in a country other than Sweden may be offered notice periods for termination and severance payment as are reasonable to reflect the special circumstances, taking into account the overall purpose of these guidelines and alignment with the general policies and practices within the Volvo Group.

**Criteria for awarding variable cash remuneration, etc.**

Short-term and long-term incentives shall be linked to predetermined and measurable criteria. The criteria – which for example may relate to EBIT, cash flow, return on capital employed or similar ratios, or sustainability targets – shall be devised to promote the Volvo Group's strategy and long-term value creation and strengthen the link between achieved performance targets and reward. The criteria for short-term and long-term incentives shall be determined by the Board of Directors annually. The satisfaction of the criteria shall be measured over periods of one year each.

To which extent the criteria for awarding variable remuneration has been satisfied shall be determined when the relevant measurement period has ended. The Board of Directors is responsible for the determination of variable remuneration to all Executives.

**Claw-back and adjustments**

Executives participating in the Volvo Group's current short-term and long-term incentive plans are obligated, in certain circumstances and for specified periods of time, to repay, partially or in its entirety, variable incentive awards already paid if payments have been made by mistake or been based on intentionally falsified data or in the event of material restatement of the Volvo Group's financial results. Furthermore, the Board of Directors may decide on adjustments of pay-out under the incentive plans (before payment has been made) in case of extraordinary circumstances or to adjust for unforeseen one-timers.

**Salary and employment conditions for employees**

In the preparation of the Board of Directors' proposal for these remuneration guidelines, the Board has considered that the various benefits offered to the Executives need to be aligned with the general structures applicable for employees of AB Volvo at levels that are competitive in the market. Thus, salary and employment conditions for other AB Volvo employees have been taken into account by including information thereon in the Remuneration Committee's and the Board of Directors' basis of decision when evaluating whether the guidelines and the limitations set out herein are appropriate.

**The decision-making process to determine, review and implement the guidelines**

The Board of Directors has established a Remuneration Committee. The Committee's tasks include preparing the Board of Directors' decision to propose guidelines for executive remuneration. The Board of Directors shall prepare a proposal for new guidelines at least every fourth year and submit it to the general meeting. The guidelines shall be in force until new guidelines are adopted by the general meeting. The Remuneration Committee shall also monitor and evaluate plans for variable remuneration for Executives, the application of the guidelines for executive remuneration as well as the current remuneration structures and compensation levels in the Group. The members of the Remuneration Committee are independent of AB Volvo and its executive management. The President & CEO and other members of the executive management do not participate in the Board of Directors' processing of and resolutions regarding remuneration-related matters in so far as they are affected by such matters.

**Derogation from the guidelines**

The Board of Directors may temporarily resolve to derogate from the guidelines, in whole or in part, if in a specific case there is special cause for the derogation and a derogation is necessary to serve the Volvo Group's long-term interests, including its sustainability, or to ensure the Group's financial viability. As set out above, the Remuneration Committee's tasks include preparing the Board of Directors' resolutions in remuneration-related matters. This includes any resolutions to derogate from the guidelines.

**Description of material changes to the guidelines**

Due to new legislation passed in 2019, the proposed guidelines for executive remuneration submitted to the 2020 annual general meeting are more detailed than before. In addition, the short-term and long-term incentives may be linked to EBIT, cash flow, return on capital employed or similar ratios, or sustainability targets, instead of EBIT and cash flow only.

Additional information regarding executive remuneration in the Volvo Group is available in the Volvo Group Annual and Sustainability Report.



## PROPOSED DISPOSITION OF UNAPPROPRIATED EARNINGS

AB Volvo	SEK
Retained earnings	31,318,868,893.19
Income for the period 2019	22,009,411,836.89
<b>Total retained earnings</b>	<b>53,328,280,730.08</b>

The Board of Directors proposes that the above sum be disposed of as follows:

	SEK
To the shareholders, an ordinary dividend of SEK 5.50 per share and an extraordinary dividend of SEK 7.50, for a total of	26,434,877,092.00
To be carried forward	26,893,403,638.08
<b>Total</b>	<b>53,328,280,730.08</b>

The record date for determining who is entitled to receive dividends is proposed to be Tuesday April 14, 2020.

In view of the Board of Directors' proposal to the Annual General Meeting to be held April 8, 2020 to decide on the distribution of an ordinary dividend of SEK 5.50 per share and an extraordinary dividend of SEK 7.50 per share, the Board hereby makes the following statement in accordance with Chapter 18, Section 4 of the Swedish Companies Act.

The Board of Directors concludes that the Company's restricted equity is fully covered after the proposed dividend. The Board further concludes that the proposed dividend is justifiable in view of the parameters set out in Chapter 17, Section 3, second and third paragraphs of the Swedish Companies Act. In connection herewith, the Board wishes to point out the following.

The proposed dividend reduces the Company's solvency from 52.2% to 38.9% and the Group's solvency from 27.0% to 23.1%, calculated as per year end 2019. The Board of Directors considers this solvency to be satisfactory with regard to the business in which the Group is active.

According to the Board of Directors' opinion, the proposed dividend will not affect the Company's or the Group's ability to fulfill their payment obligations and the Company and the Group are well prepared to handle both changes in the liquidity and unexpected events.

The Board of Directors is of the opinion that the Company and the Group have capacity to assume future business risks as well as to bear contingent losses. The proposed dividend is not expected to adversely affect the Company's and the Group's ability to make further commercially justified investments in accordance with the Board of Directors' plans.

In addition to what has been stated above, the Board of Directors has considered other known circumstances which may be of importance for the Company's and the Group's financial position. In doing so, no circumstance has appeared that does not justify the proposed dividend.

If the Annual General Meeting resolves in accordance with the Board of Directors' proposal, SEK 26,893,403,638.08 will remain of the Company's non-restricted equity, calculated as per year end 2019.

The Board of Directors has the view that the Company's and the Group's shareholders' equity will, after the proposed dividend, be sufficient in relation to the nature, scope and risks of the business.

The Board of Directors and the President certify that the annual financial report has been prepared in accordance with generally accepted accounting principles and that the consolidated accounts have been prepared in accordance with the international set of accounting standards referred to in Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards, and give a true and fair view of the position and profit or loss of the Company and the Group, and that the management report for the Company and for the Group gives a fair review of the development and performance of the business, position and profit or loss of the Company and the Group, and describes the principal risks and uncertainties that the Company and the companies in the Group face.

Göteborg, February 24, 2020

Carl-Henric Svanberg  
Board Chairman

Matti Alahuhta  
Board member

Eckhard Cordes  
Board member

Eric Elzvik  
Board member

James W. Griffith  
Board member

Martin Lundstedt  
President, CEO and Board member

Kathryn V. Marinello  
Board member

Martina Merz  
Board member

Hanne de Mora  
Board member

Helena Stjernholm  
Board member

Lars Ask  
Board member

Mats Henning  
Board member

Mikael Sällström  
Board member

Our audit report was issued on February 24, 2020

Deloitte AB

Jan Nilsson  
Authorized Public Accountant

# AUDIT REPORT FOR AB VOLVO (PUBL)

To the general meeting of the shareholders of AB Volvo (publ)  
corporate identity number 556012-5790

## Report on the annual accounts and consolidated accounts

### Opinions

We have audited the annual accounts and consolidated accounts of AB Volvo (publ) for the financial year 2019-01-01–2019-12-31, except for the sustainability report on pages 110–111. The annual accounts and consolidated accounts of the company are included on pages 70–187, 206–208 and 212–214 in this document.

In our opinion, the annual accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the parent company as of 31 December 2019 and its financial performance and cash flow for the year then ended in accordance with the Annual Accounts Act. The consolidated accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the group as of 31 December 2019 and their financial performance and cash flow for the year then ended in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU, and the Annual Accounts Act. The statutory administration report is consistent with the other parts of the annual accounts and consolidated accounts.

We therefore recommend that the general meeting of shareholders adopts the income statement and balance sheet for the parent company and the group.

Our opinions in this report on the annual accounts and consolidated accounts are consistent with the content of the additional report that has been submitted to the parent company's and group company's audit committee in accordance with the Audit Regulation (537/2014) Article 11.

### Basis for Opinions

We conducted our audit in accordance with International Standards on Auditing (ISA) and generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the *Auditor's Responsibilities* section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements. This includes that, based on the best of our knowledge and belief, no prohibited services referred to in the Audit Regulation (537/2014) Article 5.1 have been provided to the audited company or, where applicable, its parent company or its controlled companies within the EU.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions.

### Key Audit Matters

Key audit matters of the audit are those matters that, in our professional judgment, were of most significance in our audit of the annual accounts and consolidated accounts of the current period. These matters were addressed in the context of our audit of, and in forming our opinion thereon, the annual accounts and consolidated accounts as a whole, but we do not provide a separate opinion on these matters.

### Revenue recognition

Volvo Group's recognized net sales relate mainly to revenues from the sale of vehicles, services and aftermarket parts.

The accounting principles for revenue and management's significant judgments applied in relation thereto are further described in Note 7 "Revenue" to the annual report. The Company records its revenue from sales the day control has been transferred to the customer, which usually occurs on delivery of goods and sales of services over a defined period of time when the service can be utilized.

There are certain transactions entered into by the Company that carry increased levels of complexity, such as transactions with customers that involve buy-back agreements or residual value guarantees. In these transactions management need to assess whether or not control has been transferred to the customer and at what point in time revenue shall be recognized. The assessment is based on evaluating whether the customer has a significant economic incentive to exercise the residual value commitment or not. There is a high degree of judgement and estimation involved in determining the transfer of control and depending upon the outcome, it is key to ensure that the revenue is recognised at the correct amount and in the correct period.

### Audit procedures

Our audit procedures included, but were not limited to:

- assessing the revenue recognition policies with respect to IFRS 15 to determine the Company designed appropriate revenue recognition policies to recognize revenue in the correct period to correct amounts;
- evaluating the design and testing operational effectiveness of relevant internal controls used for revenue recognition;
- inspecting a sample of sales agreements and evaluating if the Company correctly assessed if the control had been transferred to the customer and the accounting treatment for these type of sale transactions were correctly applied;
- examining a sample of contract liabilities to determine if revenue was recorded accurately and in the correct period.

### Completeness and measurement of provision for product warranty

The Company grants certain product warranties to their end customers, which are contractual warranties covering certain defects in material and workmanship of Volvo products sold. Estimated warranty costs include contractual warranty, goodwill warranty and campaign warranty, all of which include a high degree of judgement and estimation. The accounting principles for warranty and management's significant judgments applied in relation thereto are further described in Note 21 "Other Provisions" to the annual report.

Estimated provisions for contractual warranties are recognized when the Company's products are sold, while provisions for goodwill warranties are determined based on historical statistics. Provision for campaigns in connection with specific quality problems are recognized when the campaign is decided. The estimated provisions are determined based on certain management estimates, including key components such as historical statistics considering known quality improvements and costs for remedy of defaults.

During 2018, the Company detected an emissions control component used in certain markets is degrading more quickly than expected, which could cause the engines to exceed emissions limits for nitrogen oxides (NOx). The initial provision for this campaign which was recorded in 2018, included a high degree of judgment and estimation. As of the year ended December 31, 2019, the Company has assessed the input assumptions for continued relevance including performing statistical analysis and assessing ongoing discussions with regulatory authorities.



#### Audit procedures

Our audit procedures included, but were not limited to:

- assessing the warranty provision recognition policies with respect to IFRS to determine the Company designed appropriate policies;
- evaluating the design and testing operational effectiveness of relevant internal controls used within the warranty review process;
- selecting a sample of product warranty provisions:
  - evaluating the process to determine the provision
  - testing the completeness and accuracy of provision input assumptions
  - assessing the reasonableness of the Company's calculations for warranty provisions with the support of our internal actuarial specialists
- reviewing internal Company documents to identify the completeness of recorded campaign warranty provisions;
- assessment of the Company's process for larger warranty campaigns, evaluating the provision for NOx by reviewing the Company's assessment of relevant government demands, evaluating the continued relevance of input assumptions, and assessing the results of the Company's statistical analyses.

#### *Provisions for losses from claims from customers and other third parties – EC Antitrust Settlement*

In July 2016, the European Commission and Volvo Group reached a settlement with regards to antitrust allegations made by the European Commission in relation to Volvo Group and other companies in the truck manufacturing industry. Following the adoption of the European Commission's settlement decision, the Company has received and may continue to receive numerous third-party damages claims from customers and other third parties alleging that they suffered loss by reason of the conduct covered in the decision. The accounting principles for provisions for legal disputes is further described in Note 21 "Other Provisions" to the annual report.

The recognition and measurement of any provisions recorded for such legal disputes is complicated, requires the involvement of legal experts, and depends upon the future outcomes of the private damages claims which is uncertain. Due to these complexities, the valuation of any such provisions is significantly impacted by management's ultimate judgments and best estimates. At December 31, 2019, the Company has not been able to make a reliable estimate of the amount of any liability that could arise from these claims, if any. Further information is disclosed in Note 24 "Contingent Liabilities" to the annual report.

#### Audit procedures

Our audit procedures included, but were not limited to:

- holding discussions with management and audit the documentation and conclude how management and the board evaluated the claims;
- holding discussions with internal legal department and with Volvo Group's external legal advisors and attorneys in order to obtain an understanding of the facts of the cases, new developments, and assessments;
- reviewing internal minutes and documentation as well as reports from the external legal advisors to corroborate the consistency of information received;
- reviewing a sample of legal opinions from Volvo Group's external legal advisors;
- evaluating the appropriateness of the Company's final conclusions;
- assessing the adequacy of the disclosures around the legal proceedings.

#### *Other information than the annual accounts and consolidated accounts*

This document also contains other information than the annual accounts and consolidated accounts and is found on pages 1–69 and 215–227. The Board of Directors and the President are responsible for this other information.

Our opinion on the annual accounts and consolidated accounts does not cover this other information and we do not express any form of assurance conclusion regarding this other information.

In connection with our audit of the annual accounts and consolidated accounts, our responsibility is to read the information identified above and consider whether the information is materially inconsistent with the annual accounts and consolidated accounts. In this procedure we also take into account our knowledge otherwise obtained in the audit and assess whether the information otherwise appears to be materially misstated.

If we, based on the work performed concerning this information, conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

#### *Responsibilities of the Board of Directors and the President*

The Board of Directors and the President are responsible for the preparation of the annual accounts and consolidated accounts and that they give a fair presentation in accordance with the Annual Accounts Act and, concerning the consolidated accounts, in accordance with IFRS as adopted by the EU. The Board of Directors and the President are also responsible for such internal control as they determine is necessary to enable the preparation of annual accounts and consolidated accounts that are free from material misstatement, whether due to fraud or error.

In preparing the annual accounts and consolidated accounts, The Board of Directors and the President are responsible for the assessment of the company's and the group's ability to continue as a going concern. They disclose, as applicable, matters related to going concern and using the going concern basis of accounting. The going concern basis of accounting is however not applied if the Board of Directors and the President intends to liquidate the company, to cease operations, or has no realistic alternative but to do so.

The Audit Committee shall, without prejudice to the Board of Director's responsibilities and tasks in general, among other things oversee the company's financial reporting process.

#### *Auditor's responsibility*

Our objectives are to obtain reasonable assurance about whether the annual accounts and consolidated accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and generally accepted auditing standards in Sweden will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual accounts and consolidated accounts.

A further description of our responsibilities for the audit of the annual accounts and consolidated accounts is located at the Swedish Inspectorate of Auditors website: [www.revisorsinspektionen.se/revisornsansvar](http://www.revisorsinspektionen.se/revisornsansvar). This description forms part of the auditor's report.

#### **Report on other legal and regulatory requirements**

##### *Opinions*

In addition to our audit of the annual accounts and consolidated accounts, we have also audited the administration of the Board of Directors and the President of AB Volvo (publ) for the financial year 2019-01-01–2019-12-31 and the proposed appropriations of the company's profit or loss.

We recommend to the general meeting of shareholders that the profit to be appropriated in accordance with the proposal in the statutory administration report and that the members of the Board of Directors and the President be discharged from liability for the financial year.

#### ***Basis for Opinions***

We conducted the audit in accordance with generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the *Auditor's Responsibilities* section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions.

#### ***Responsibilities of the Board of Directors and the President***

The Board of Directors is responsible for the proposal for appropriations of the company's profit or loss. At the proposal of a dividend, this includes an assessment of whether the dividend is justifiable considering the requirements which the company's and the group's type of operations, size and risks place on the size of the parent company's and the group's equity, consolidation requirements, liquidity and position in general.

The Board of Directors is responsible for the company's organization and the administration of the company's affairs. This includes among other things continuous assessment of the company's and the group's financial situation and ensuring that the company's organization is designed so that the accounting, management of assets and the company's financial affairs otherwise are controlled in a reassuring manner. The President shall manage the ongoing administration according to the Board of Directors' guidelines and instructions and among other matters take measures that are necessary to fulfill the company's accounting in accordance with law and handle the management of assets in a reassuring manner.

#### ***Auditor's responsibility***

Our objective concerning the audit of the administration, and thereby our opinion about discharge from liability, is to obtain audit evidence to assess with a reasonable degree of assurance whether any member of the Board of Directors or the President in any material respect:

- has undertaken any action or been guilty of any omission which can give rise to liability to the company, or
- in any other way has acted in contravention of the Companies Act, the Annual Accounts Act or the Articles of Association.

Our objective concerning the audit of the proposed appropriations of the company's profit or loss, and thereby our opinion about this, is to assess with reasonable degree of assurance whether the proposal is in accordance with the Companies Act.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with generally accepted auditing standards in Sweden will always detect actions or omissions that can give rise to liability to the company, or that the proposed appropriations of the company's profit or loss are not in accordance with the Companies Act.

A further description of our responsibilities for the audit of the management's administration is located at the Swedish Inspectorate of Auditors website: [www.revisorsinspektionen.se/rn/showdocument/documents/rev\\_dok/revisors\\_ansvar.pdf](http://www.revisorsinspektionen.se/rn/showdocument/documents/rev_dok/revisors_ansvar.pdf). This description forms part of the auditor's report.

#### ***The auditor's opinion regarding the statutory sustainability report***

The Board of Directors is responsible for the statutory sustainability report on pages 110–111 and that it is prepared in accordance with the Annual Accounts Act.

Our examination has been conducted in accordance with FAR:s auditing standard RevR 12 The auditor's opinion regarding the statutory sustainability report.

This means that our examination of the statutory sustainability report is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinion.

A statutory sustainability report has been prepared.

Deloitte AB, was appointed auditor of AB Volvo by the general meeting of the shareholders on April 5, 2018 and has been the company's auditor since April 5, 2018.

Göteborg, February 24, 2020

Deloitte AB

Jan Nilsson  
Authorized Public Accountant

## KEY RATIOS

The Volvo Group uses key ratios in order to analyze trends and performance within the Group. The key ratios are not defined by IFRS, unless otherwise is stated, whereby definitions and reconciliations of significant key ratios are presented in the annual report. If the reconciliation is not directly reflected in the financial statements, a separate reconciliation is presented below.

### Basic earnings per share (defined by IFRS)

Definition: Income for the period attributable to shareholders of AB Volvo divided by the weighted average number of shares outstanding during the period. For reconciliation see *note 19 Equity and number of shares*.

### Cash flow

Definition: The combined changes in the Group's cash and cash equivalents during the fiscal year. Changes in cash and cash equivalents are specified with reference to changes in operating activities, changes in investing activities, which add up to operating cash flow, as well as changes in net investments and financing activities. For reconciliation see *Consolidated cash flow statements*.

### Diluted earnings per share (defined by IFRS)

Definition: Diluted earnings per share is calculated as income for the period attributable to the shareholders of AB Volvo divided by the average number of shares outstanding plus the average number of shares that would be issued as an effect of ongoing share-based incentive programs and employee stock option programs. For reconciliation see *note 19 Equity and number of shares*.

### Equity ratio

Definition: Total equity divided by total assets.

SEK M	Industrial Operations		Volvo Group	
	2019	2018	2019	2018
Total equity	127,150	113,144	141,678	125,831
Total assets	384,517	354,351	524,837	474,663
<b>Equity ratio, %</b>	<b>33.1</b>	<b>31.9</b>	<b>27.0</b>	<b>26.5</b>

### Gross margin

Definition: Gross income divided by net sales.

SEK M	Industrial Operations		Volvo Group	
	2019	2018	2019	2018
Net sales	418,361	378,320	431,980	390,834
Gross income	99,306	82,210	105,085	87,357
<b>Gross margin, %</b>	<b>23.7</b>	<b>21.7</b>	<b>24.3</b>	<b>22.4</b>

### EBITDA and EBITDA margin

Definition: EBITDA is the operating income before depreciation and amortization of tangible and intangible assets. The key figure EBITDA margin is calculated as operating income adjusted with depreciation and amortization, in relation to net sales.

SEK M	Industrial Operations	
	2019	2018
Net sales	418,361	378,320
Operating income	46,771	32,067
Amortization product and software development	2,629	2,704
Amortization other intangible assets	283	284
Depreciation tangible assets	12,886	10,804
Total depreciation and amortization	15,797	13,791
<b>Operating income before depreciation and amortization (EBITDA)</b>	<b>62,568</b>	<b>45,858</b>
<b>EBITDA margin, %</b>	<b>15.0</b>	<b>12.1</b>

### Interest coverage

Definition: Operating income plus interest income and similar credits divided by interest expense and similar charges.

SEK M	Industrial Operations	
	2019	2018
Operating income	46,771	32,067
Interest income and similar credits	320	199
Operating income and interest income and similar credits	47,091	32,266
Interest expenses and similar charges	-1,673	-1,658
<b>Interest coverage, times</b>	<b>28.1</b>	<b>19.5</b>



**Net capitalization of research and development cost**

Definition: Capitalized research and development cost reduced by amortizations.

SEK M	Volvo Group	
	2019	2018
Capitalization	3,526	3,367
Amortization	-2,520	-2,576
<b>Net capitalization of research and development cost</b>	<b>1,006</b>	<b>791</b>

**Net financial position**

Definition: Cash and cash equivalents, marketable securities and interest-bearing receivables reduced by short- and long-term interest-bearing liabilities and provisions for post-employment benefits. For reconciliation see table *Net financial position*, which is presented after the balance sheet for the Volvo Group.

**Operating income, operating margin, adjusted operating income and adjusted operating margin**

Definition operating income: Operating income is profit before interest and tax, also known as EBIT (Earnings before interest and tax) and is a measure of profit from the ordinary business operations. For reconciliation see the *Income statements Volvo Group*.

Definition operating margin: Operating income divided by net sales.

Definition adjusted operating income: Adjusted operating income is profit before interest and tax as well as significant expenses or income of a one-time character.

Definition adjusted operating margin: Adjusted operating income divided by net sales.

2019										
SEK M	Quarter	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. elim	Industrial operations	Financial Services	Eliminations	Volvo Group
<b>Net sales</b>		<b>276,647</b>	<b>88,606</b>	<b>31,019</b>	<b>13,287</b>	<b>8,802</b>	<b>418,361</b>	<b>14,870</b>	<b>-1,252</b>	<b>431,980</b>
<b>Operating income</b>		<b>31,552</b>	<b>11,910</b>	<b>1,337</b>	<b>1,876</b>	<b>97</b>	<b>46,771</b>	<b>2,766</b>	<b>-6</b>	<b>49,531</b>
Capital gain on sale of shares in WirelessCar	1	-	-	-	-	1,466	1,466	-	-	1,466
Capital gain on sale of shares in WirelessCar	4	-	-	-	-	156	156	-	-	156
	Year	-	-	-	-	1,621	1,621	-	-	1,621
<b>Adjusted operating income</b>		<b>31,552</b>	<b>11,910</b>	<b>1,337</b>	<b>1,876</b>	<b>-1,524</b>	<b>45,150</b>	<b>2,766</b>	<b>-6</b>	<b>47,910</b>
<b>Operating margin, %</b>		<b>11.4</b>	<b>13.4</b>	<b>4.3</b>	<b>14.1</b>	<b>-</b>	<b>11.2</b>	<b>-</b>	<b>-</b>	<b>11.5</b>
<b>Adjusted operating margin, %</b>		<b>11.4</b>	<b>13.4</b>	<b>4.3</b>	<b>14.1</b>	<b>-</b>	<b>10.8</b>	<b>-</b>	<b>-</b>	<b>11.1</b>

2018										
SEK M	Quarter	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. elim	Industrial operations	Financial Services	Eliminations	Volvo Group
<b>Net sales</b>		<b>250,358</b>	<b>84,238</b>	<b>25,826</b>	<b>13,741</b>	<b>4,157</b>	<b>378,320</b>	<b>13,070</b>	<b>-555</b>	<b>390,834</b>
<b>Operating income</b>		<b>19,541</b>	<b>12,125</b>	<b>575</b>	<b>2,341</b>	<b>-2,515</b>	<b>32,067</b>	<b>2,411</b>	<b>-</b>	<b>34,478</b>
Capital gain on sale of shares in Inner Mongolia North Hauler Joint Stock Co., Ltd	2	-	-818	-	-	-	-818	-	-	-818
Provision for addressing the issue with an emission control component	4	6,810	-	190	-	-	7,000	-	-	7,000
	Year	6,810	-818	190	-	-	6,182	-	-	6,182
<b>Adjusted operating income</b>		<b>26,351</b>	<b>11,306</b>	<b>765</b>	<b>2,341</b>	<b>-2,514</b>	<b>38,249</b>	<b>2,411</b>	<b>-</b>	<b>40,660</b>
<b>Operating margin, %</b>		<b>7.8</b>	<b>14.4</b>	<b>2.2</b>	<b>17.0</b>	<b>-</b>	<b>8.5</b>	<b>-</b>	<b>-</b>	<b>8.8</b>
<b>Adjusted operating margin, %</b>		<b>10.5</b>	<b>13.4</b>	<b>3.0</b>	<b>17.0</b>	<b>-</b>	<b>10.1</b>	<b>-</b>	<b>-</b>	<b>10.4</b>

**Penetration rate**

Definition: Share of unit sales financed by Financial Services in relation to total number units sold by the Volvo Group in markets where financial services are offered.

	Financial Services	
	2019	2018
Number of units		
Number of financed units	62,209	58,698
Number of units sold where financial services are offered	247,218	242,287
<b>Penetration rate, %</b>	<b>25</b>	<b>24</b>

**Return on capital employed**

Definition: Operating income plus interest income and similar credits divided by weighted average capital employed.

SEK M	Industrial Operations	
	2019	2018
Operating income, 12 months rolling	46,771	32,067
Interest income and similar credits, 12 months rolling	320	199
Operating income and interest income and similar credits, 12 months rolling	47,091	32,266
Weighted average capital employed	166,084	144,189
<b>Return on capital employed, 12 months rolling, %</b>	<b>28.4</b>	<b>22.4</b>

**Return on operating capital**

Definition: Operating income divided by weighted average operating capital.

SEK M	Industrial Operations	
	2019	2018
Operating income	46,771	32,067
Weighted average operating capital	89,383	82,209
<b>Return on operating capital, 12 months rolling, %</b>	<b>52.3</b>	<b>39.0</b>

**Return on total equity**

Definition: Income for the period divided by weighted average total equity.

SEK M	Volvo Group	
	2019	2018
Income for the period	36,495	25,363
Weighted average total equity	135,122	119,021
<b>Return on total equity, 12 months rolling, %</b>	<b>27.0</b>	<b>21.3</b>

**Sales growth adjusted for currency and acquired and divested operations**

Definition: Sales growth adjusted for currency and acquired and divested operations, divided by net sales for the prior year.

SEK M	Industrial Operations		Volvo Group	
	2019	2018	2019	2018
Net sales	418,361	378,320	431,980	390,834
Increase/decrease of net sales for the year	40,042	56,519	41,146	58,096
Currency rates	-20,911	11,199	-21,591	11,403
Acquired and divested units	0	-516	0	-516
Adjusted Increase/decrease of net sales for the year	19,131	45,836	19,555	47,208
<b>Sales growth adjusted for currency and acquired and divested units, %</b>	<b>5.1</b>	<b>14.2</b>	<b>5.0</b>	<b>14.2</b>

**Self-financing ratio**

Definition: Cash flow from operating activities divided by net investments in tangible assets, intangible assets and leasing vehicles as defined in the *Consolidated cash flow statement*.

SEK M	Industrial operations		Volvo Group	
	2019	2018	2019	2018
Cash flow from operating activities	48,996	36,351	39,047	31,187
Investment in in-/tangible assets and leasing vehicles, net	10,687	9,754	14,591	14,667
<b>Self-financing ratio, %</b>	<b>458</b>	<b>373</b>	<b>268</b>	<b>213</b>

## ELEVEN-YEAR SUMMARY

The reporting in the eleven-year summary is based on IFRS. Respective year is presented in accordance with the Generally Accepted Accounting Practice (GAAP) for that year. Earlier years are not restated when new accounting standards are applied.

Consolidated income statement											
SEK M	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
<b>Net sales</b>	<b>431,980</b>	<b>390,834</b>	<b>334,748</b>	<b>301,914</b>	<b>312,515</b>	<b>282,948</b>	<b>272,622</b>	<b>303,647</b>	<b>310,367</b>	<b>264,749</b>	<b>218,361</b>
Cost of sales	-326,895	-303,478	-254,581	-231,602	-240,653	-220,012	-212,504	-235,085	-235,104	-201,797	-186,167
<b>Gross income</b>	<b>105,085</b>	<b>87,357</b>	<b>80,167</b>	<b>70,312</b>	<b>71,862</b>	<b>62,937</b>	<b>60,118</b>	<b>68,562</b>	<b>75,263</b>	<b>62,952</b>	<b>32,194</b>
Research and development expenses	-18,539	-15,899	-16,098	-14,631	-15,368	-16,656	-15,124	-14,794	-13,276	-12,970	-13,193
Selling expenses	-33,037	-30,890	-28,582	-26,867	-27,694	-27,448	-28,506	-28,248	-26,001	-24,149	-25,334
Administrative expenses	-5,901	-5,798	-5,642	-5,121	-5,769	-5,408	-5,862	-5,669	-7,132	-5,666	-5,863
Other operating income and expenses	-221	-2,273	-1,061	-3,135	-4,179	-7,697	-3,554	-2,160	-1,649	-2,023	-4,798
Income from investments in joint ventures and associated companies	1,859	1,948	1,407	156	-143	46	96	-23	-81	-86	-14
Income from other investments	285	33	135	112	4,609	50	-30	-47	-225	-58	-6
<b>Operating income</b>	<b>49,531</b>	<b>34,478</b>	<b>30,327</b>	<b>20,826</b>	<b>23,318</b>	<b>5,824</b>	<b>7,138</b>	<b>17,622</b>	<b>26,899</b>	<b>18,000</b>	<b>-17,013</b>
Interest income and similar credits	320	199	164	240	257	328	381	510	608	442	390
Interest expenses and similar charges	-1,674	-1,658	-1,852	-1,847	-2,366	-1,994	-2,810	-2,476	-2,875	-3,142	-3,559
Other financial income and expenses	-1,345	-870	-385	11	-792	931	11	-301	297	213	-392
<b>Income after financial items</b>	<b>46,832</b>	<b>32,148</b>	<b>28,254</b>	<b>19,230</b>	<b>20,418</b>	<b>5,089</b>	<b>4,721</b>	<b>15,355</b>	<b>24,929</b>	<b>15,514</b>	<b>-20,573</b>
Income taxes	-10,337	-6,785	-6,971	-6,008	-5,320	-2,854	-919	-4,097	-6,814	-4,302	5,889
<b>Income for the period</b>	<b>36,495</b>	<b>25,363</b>	<b>21,283</b>	<b>13,223</b>	<b>15,099</b>	<b>2,235</b>	<b>3,802</b>	<b>11,258</b>	<b>18,115</b>	<b>11,212</b>	<b>-14,685</b>
Attributable to:											
Owners of AB Volvo	35,861	24,897	20,981	13,147	15,058	2,099	3,583	11,039	17,751	10,866	-14,718
Non-controlling interest	635	466	302	75	41	136	219	219	364	346	33
	<b>36,495</b>	<b>25,363</b>	<b>21,283</b>	<b>13,223</b>	<b>15,099</b>	<b>2,235</b>	<b>3,802</b>	<b>11,258</b>	<b>18,115</b>	<b>11,212</b>	<b>-14,685</b>

Consolidated income statement Industrial Operations											
SEK M	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
<b>Net sales</b>	<b>418,361</b>	<b>378,320</b>	<b>323,809</b>	<b>291,459</b>	<b>303,582</b>	<b>275,999</b>	<b>265,420</b>	<b>296,031</b>	<b>303,589</b>	<b>257,375</b>	<b>208,487</b>
Cost of sales	-319,055	-296,109	-248,382	-225,797	-236,311	-217,251	-209,307	-231,216	-233,097	-197,480	-179,578
<b>Gross income</b>	<b>99,306</b>	<b>82,210</b>	<b>75,428</b>	<b>65,662</b>	<b>67,271</b>	<b>58,748</b>	<b>56,113</b>	<b>64,815</b>	<b>70,492</b>	<b>59,895</b>	<b>28,909</b>
Research and development expenses	-18,539	-15,899	-16,098	-14,631	-15,368	-16,656	-15,124	-14,794	-13,276	-12,970	-13,193
Selling expenses	-30,483	-28,642	-26,495	-24,946	-25,857	-25,778	-26,904	-26,582	-25,181	-22,649	-23,752
Administrative expenses	-5,887	-5,756	-5,602	-5,081	-5,728	-5,367	-5,824	-5,639	-4,753	-5,640	-5,838
Other operating income and expenses	230	-1,828	-640	-2,531	-3,473	-6,931	-2,710	-1,600	-1,045	-659	-2,432
Income/loss from investments in joint ventures and associated companies	1,859	1,948	1,407	156	-143	46	96	-23	-82	-86	-15
Income from other investments	285	33	135	112	4,610	49	-31	-46	-225	-57	-13
<b>Operating income</b>	<b>46,771</b>	<b>32,067</b>	<b>28,135</b>	<b>18,740</b>	<b>21,312</b>	<b>4,111</b>	<b>5,616</b>	<b>16,130</b>	<b>25,930</b>	<b>17,834</b>	<b>-16,333</b>

Consolidated balance sheets											
SEK M	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Intangible assets	36,668	38,104	35,893	37,916	36,416	37,115	36,588	40,373	39,507	40,714	41,628
Property, plant and equipment	53,496	55,673	53,348	55,875	53,618	55,181	52,233	55,004	54,540	54,242	55,280
Assets under operating leases	43,326	43,103	37,166	34,693	32,531	31,218	25,672	29,022	23,922	19,647	20,388
Shares and participations	13,113	11,875	11,225	12,420	12,050	9,839	6,327	2,890	1,874	2,098	2,044
Inventories	56,644	65,783	52,701	48,287	44,390	45,533	41,153	40,409	44,599	39,837	37,727
Customer-financing receivables	142,982	126,927	109,378	110,821	102,583	99,166	83,861	80,989	78,699	72,688	81,977
Interest-bearing receivables	2,743	3,393	3,501	2,393	2,938	2,555	1,389	5,635	3,638	2,757	3,044
Other receivables	81,432	82,509	72,961	70,814	61,932	68,448	59,943	55,531	59,877	53,154	50,575
Cash and cash equivalents	61,660	47,093	36,270	25,172	24,393	33,554	29,559	28,889	37,241	32,733	37,910
Assets held for sale	32,773	203	51	525	3,314	288	8,104	–	9,348	136	1,692
<b>Assets</b>	<b>524,837</b>	<b>474,663</b>	<b>412,494</b>	<b>398,916</b>	<b>374,165</b>	<b>382,896</b>	<b>344,829</b>	<b>338,742</b>	<b>353,244</b>	<b>318,007</b>	<b>332,265</b>
Total equity <sup>1</sup>	141,678	125,831	109,011	97,764	85,610	80,048	77,365	86,914	85,681	74,121	67,034
Provision for post-employment benefits	19,988	16,482	14,476	14,669	13,673	16,683	12,322	6,697	6,665	7,510	8,051
Other provisions	30,835	32,165	25,477	26,408	27,207	28,010	19,900	21,787	20,815	18,992	19,485
Interest-bearing liabilities	157,752	135,857	127,676	141,048	132,607	147,985	135,001	131,842	130,479	123,695	156,852
Other liabilities	164,171	164,328	135,854	118,879	114,495	110,042	99,891	91,502	104,888	93,554	80,571
Liabilities held for sale	10,413	–	–	148	573	130	350	–	4,716	135	272
<b>Total equity and liabilities</b>	<b>524,837</b>	<b>474,663</b>	<b>412,494</b>	<b>398,916</b>	<b>374,165</b>	<b>382,896</b>	<b>344,829</b>	<b>338,742</b>	<b>353,244</b>	<b>318,007</b>	<b>332,265</b>
1 of which non-controlling interests	3,083	2,452	1,941	1,703	1,801	1,723	1,333	1,266	1,100	1,011	629
Assets pledged	21,220	15,988	12,791	10,592	9,428	7,680	5,078	4,099	1,832	3,339	958
Contingent liabilities	13,732	14,247	15,242	16,056	15,580	15,940	17,290	17,763	17,154	11,003	9,607

<b>Consolidated balance sheets, Industrial Operations</b>											
SEK M	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Intangible assets	36,467	37,889	35,716	37,768	36,314	37,010	36,479	40,267	39,385	40,613	41,532
Property, plant and equipment	53,411	55,631	53,308	55,812	53,554	55,087	52,146	54,899	54,446	54,169	55,208
Assets under operating leases	33,794	32,700	24,051	22,752	20,616	19,484	17,013	21,263	16,749	13,217	13,539
Shares and participations	13,095	11,866	11,215	12,409	12,042	9,825	6,321	2,884	1,871	2,080	2,025
Inventories	56,080	65,366	52,231	48,080	44,194	45,364	40,964	40,057	43,828	38,956	35,765
Customer-financing receivables	1,570	1,560	1,358	1,698	11	1,828	1,406	1,397	1,702	1,428	1,367
Interest-bearing receivables	4,916	3,882	4,966	4,415	3,738	2,777	2,195	11,011	6,734	11,153	8,010
Other receivables	99,082	101,347	85,822	75,759	68,223	70,413	60,679	54,324	59,062	52,358	49,008
Cash and cash equivalents	57,675	43,907	32,447	20,875	21,210	31,105	28,230	27,146	35,951	31,491	37,404
Assets held for sale	28,427	203	51	525	3,314	288	8,104	–	9,348	136	1,692
<b>Assets</b>	<b>384,517</b>	<b>354,351</b>	<b>301,165</b>	<b>280,093</b>	<b>263,216</b>	<b>273,181</b>	<b>253,537</b>	<b>253,248</b>	<b>269,076</b>	<b>245,602</b>	<b>245,550</b>
Total equity	127,150	113,144	97,790	86,579	75,151	70,105	68,467	78,321	76,682	66,101	58,485
Provision for post-employment benefits	19,850	16,374	14,391	14,608	13,621	16,580	12,249	6,663	6,635	7,478	8,021
Other provisions	27,055	28,476	22,680	22,545	23,936	25,054	17,575	19,653	19,101	17,240	17,456
Interest-bearing liabilities	32,326	25,328	27,001	33,944	32,562	48,180	52,491	54,472	55,394	59,857	78,890
Other liabilities	172,209	171,029	139,303	122,269	117,374	113,131	102,405	94,139	106,548	94,791	82,426
Liabilities held for sale	5,927	–	–	148	573	130	350	–	4,716	135	272
<b>Total equity and liabilities</b>	<b>384,517</b>	<b>354,351</b>	<b>301,165</b>	<b>280,093</b>	<b>263,216</b>	<b>273,181</b>	<b>253,537</b>	<b>253,248</b>	<b>269,076</b>	<b>245,602</b>	<b>245,550</b>



<b>Consolidated cash flow statements</b>											
SEK bn	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Operating income	49.5	34.5	30.3	20.8	23.3	5.8	7.1	17.6	26.9	18.0	-17.0
Depreciation and amortization	20.6	18.4	16.9	16.7	16.8	15.9	17.4	14.7	13.9	13.8	15.2
Other non-cash items	-2.8	9.7	1.4	-0.4	-0.5	6.1	2.4	1.4	1.3	1.6	4.4
Change in working capital	-18.2	-23.7	-4.7	-13.9	-9.0	-14.1	-10.8	-21.9	-15.1	4.8	16.9
Financial items and income tax	-10.1	-7.7	-6.3	-5.7	-4.6	-5.0	-5.1	-8.0	-7.3	-5.5	-4.6
<b>Cash flow from operating activities</b>	<b>39.0</b>	<b>31.2</b>	<b>37.6</b>	<b>17.5</b>	<b>25.9</b>	<b>8.7</b>	<b>11.0</b>	<b>3.8</b>	<b>19.7</b>	<b>32.7</b>	<b>14.9</b>
Investments in in-/tangible assets	-12.0	-10.7	-7.7	-9.5	-8.8	-8.6	-12.2	-14.6	-12.6	-10.4	-10.5
Investments in leasing assets	-10.0	-10.1	-11.5	-10.8	-10.5	-10.1	-8.2	-10.0	-7.4	-4.8	-4.2
Disposals of in-/tangible assets and leasing assets	7.4	6.2	5.4	9.0	6.0	5.0	3.4	3.1	3.3	3.1	3.8
Investments and divestments of shares, net	0.1	1.0	2.2	0.2	-2.0	0.1	0.0	-1.2	-0.1	-0.1	0.0
Acquired and divested operations, net	1.3	-0.2	0.9	1.4	0.4	7.4	0.9	3.4	-1.6	0.6	0.2
Interest-bearing receivables including marketable securities	-1.0	0.1	1.6	2.5	3.6	-4.8	0.5	3.7	2.6	6.8	-8.9
<b>Cash flow after net investments</b>	<b>24.9</b>	<b>17.4</b>	<b>28.5</b>	<b>10.4</b>	<b>14.5</b>	<b>-2.3</b>	<b>-4.6</b>	<b>-11.8</b>	<b>3.9</b>	<b>27.9</b>	<b>-4.7</b>
Change in loans, net	9.3	1.9	-9.0	-2.2	-13.2	6.7	13.0	14.1	8.7	-25.7	12.6
Repurchase of own shares	-	-	-	-	-	-	-	-	-	-	0.0
Dividend to AB Volvo's shareholders	-20.3	-8.6	-6.6	-6.1	-6.1	-6.1	-6.1	-6.1	-5.1	0.0	-4.1
Dividend to non-controlling interests	-0.0	0.0	0.0	-0.2	0.0	0.0	-0.2	0.0	0.0	-0.1	-
Other	0.2	0.0	0.0	0.0	0.0	-0.1	0.1	0.0	0.0	0.0	-0.1
<b>Change in cash and cash equivalents excluding translation differences</b>	<b>14.0</b>	<b>10.7</b>	<b>12.8</b>	<b>1.9</b>	<b>-4.8</b>	<b>-1.8</b>	<b>2.2</b>	<b>-3.8</b>	<b>7.5</b>	<b>2.1</b>	<b>3.7</b>
Translation differences on cash and cash equivalents	0.5	0.1	-0.7	1.0	-0.4	1.1	-0.5	-0.8	-0.1	-0.4	-0.2
<b>Change in cash and cash equivalents</b>	<b>14.5</b>	<b>10.8</b>	<b>12.1</b>	<b>2.9</b>	<b>-5.2</b>	<b>-0.7</b>	<b>1.7</b>	<b>-4.6</b>	<b>7.4</b>	<b>1.7</b>	<b>3.5</b>

<b>Operating cash flow Industrial Operations</b>											
SEK bn	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Operating income	46.8	32.1	28.1	18.7	21.3	4.1	5.6	16.1	26.0	17.8	-16.3
Depreciation and amortization	15.8	13.8	12.6	12.6	12.6	12.7	14.5	12.0	11.4	11.4	12.4
Other non-cash items	-3.6	8.9	0.9	-1.1	-1.1	5.3	1.5	0.8	0.6	0.1	2.3
Change in working capital	-0.5	-11.0	-0.2	-14.7	-1.9	-3.3	-2.0	-9.2	-4.2	4.6	4.7
Financial items and income taxes	-9.5	-7.5	-5.6	-5.6	-4.0	-4.5	-4.9	-7.3	-6.9	-5.1	-4.7
<b>Cash flow from operating activities</b>	<b>49.0</b>	<b>36.4</b>	<b>35.8</b>	<b>9.9</b>	<b>26.7</b>	<b>14.3</b>	<b>14.7</b>	<b>12.4</b>	<b>26.9</b>	<b>28.8</b>	<b>-1.6</b>
Investments in in-/tangible assets	-11.9	-10.7	-7.7	-9.4	-8.8	-8.6	-12.2	-14.6	-12.6	-10.3	-10.3
Investments in leasing assets	-0.1	-0.0	-0.1	-0.1	-0.3	-0.5	-1.5	-3.6	-1.4	-0.3	-0.2
Disposals of in-/tangible assets and leasing assets	1.4	0.9	0.4	3.2	0.7	1.1	0.5	0.9	1.2	0.8	0.7
<b>Operating cash flow</b>	<b>38.3</b>	<b>26.6</b>	<b>28.4</b>	<b>3.5</b>	<b>18.3</b>	<b>6.4</b>	<b>1.5</b>	<b>-4.9</b>	<b>14.1</b>	<b>19.0</b>	<b>-11.4</b>

Exports from Sweden											
SEK M	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Volvo Group, total	118,543	117,887	107,958	91,962	86,731	78,174	88,560	84,314	91,065	72,688	41,829

Key ratios											
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Gross margin, % <sup>1</sup>	23.7	21.7	23.3	22.5	22.2	21.3	21.1	21.9	23.7	23.3	13.9
Research and development expenses as percentage of net sales <sup>1</sup>	4.4	4.2	5.0	5.0	5.1	6.0	5.7	5.0	4.4	5.0	6.3
Selling expenses as percentage of net sales <sup>1</sup>	7.3	7.6	8.2	8.6	8.5	9.3	10.1	9.0	8.0	8.8	11.4
Administration expenses as percentage of net sales <sup>1</sup>	1.4	1.5	1.7	1.7	1.9	1.9	2.2	1.9	2.3	2.2	2.8
Operating income before depreciation and amortization (EBITDA), SEK M <sup>1</sup>	62,568	45,858	40,732	31,373	33,886	16,784	20,089	28,117	37,376	29,171	-3,951
EBITDA margin, % <sup>1</sup>	15.0	12.1	12.6	10.8	11.2	6.1	7.6	9.5	12.3	11.3	-1.9
Net capitalization of research and development, SEK M	1,006	791	-876	90	-550	-1,441	787	2,264	1,197	223	-
Return on capital employed in Industrial Operations, %	28.4	22.4	-	-	-	-	-	-	-	-	-
Return on operating capital in Industrial Operations, %	52.3	39.0	32.5	21.5	25.0	4.5	5.9	16.5	28.8	19.5	-15.6
Return on total equity, %	27.0	21.3	20.8	14.9	18.4	2.8	5.0	12.9	23.1	16.0	-19.7
Interest coverage, times <sup>1</sup>	28.1	19.5	15.3	10.3	9.1	2.2	2.1	6.7	9.6	5.9	-4.7
Self-financing ratio, %	268	213	272	155	194	64	84	18	118	270	137
Self-financing ratio Industrial Operations, %	458	373	483	155	316	180	112	72	210	294	-16
Net Financial position excl. post-employment benefits and lease liabilities SEK M <sup>1</sup>	62,596	43,926	26,339	-1,151	349	-9,924	-19,828	-19,023	-14,974	-18,849	-35,506
Net financial position excl. post-employment benefits and lease liabilities as percentage of total equity <sup>1</sup>	49.2	38.8	26.9	-1.3	0.5	-14.2	-29.0	-24.3	-19.5	-28.5	-60.7
Net Financial position incl. post-employment benefits and lease liabilities SEK M <sup>1</sup>	37,267	29,101	12,200	-15,679	-13,237	-26,378	-32,066	-22,978	-19,346	-24,691	-41,489
Net financial position incl. post-employment benefits and lease liabilities as percentage of total equity <sup>1</sup>	29.3	25.7	12.5	-18.1	-17.6	-37.6	-46.8	-29.3	-25.2	-37.4	-70.9
Equity ratio	27.0	26.5	26.4	24.5	22.9	20.9	22.4	25.7	24.3	23.3	20.2
Equity ratio, Industrial Operations	33.1	31.9	32.5	30.9	28.6	25.7	27.0	30.9	28.5	26.9	23.8
Equity ratio excluding non-controlling interest	26.4	26.0	26.0	24.1	22.4	20.5	22.0	25.2	23.9	23.0	20.0

<sup>1</sup> Pertains to the Industrial Operations.

## Volvo share statistics

Data per share (adjusted for issues and splits) <sup>1</sup>	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Basic earnings, SEK <sup>1</sup>	17.64	12.25	10.08	6.47	7.42	1.03	1.77	5.44	8.75	5.36	-7.26
Cash dividend, SEK	13.00 <sup>9</sup>	10.00 <sup>8</sup>	4.25	3.25	3.00	3.00	3.00	3.00	3.00	2.50	0
Share price at year end (B share), SEK	156.90	115.95	152.70	106.40	79.10	84.70	84.45	88.80	75.30	118.50	61.45
Dividend yield (B share), % <sup>2</sup>	8.3	8.6	2.8	3.1	3.8	3.5	3.6	3.4	4.0	2.1	-
Effective return (B share), % <sup>3</sup>	47	-21	48	39	-3	4	-2	22	-34	97	43
Price/earnings ratio (B share) <sup>4</sup>	8.9	9.5	14.8	16.4	10.7	82.2	47.7	16.3	8.6	22.1	neg
EBIT multiple <sup>5</sup>	6.1	6.5	9.9	11.7	7.7	26.3	19.6	9.0	5.1	12.0	neg
Payout ratio, % <sup>6</sup>	74	82	41	50	40	291	169	55	34	47	-
Total equity, SEK <sup>7</sup>	66	61	52	47	41	39	38	43	42	36	33
Return on total equity, %	27.0	21.3	20.5	14.9	18.4	2.8	5.0	12.9	23.1	16.0	neg

1 Basic earnings per share is calculated as income for the period divided by average number of shares outstanding.

2 Proposed dividend in SEK per share divided by share price at year end.

3 Share price at year end, including proposed dividend during the year, divided by share price at beginning of the year.

4 Share price at year end divided by basic earnings per share.

5 Market value at year end less net financial position and non-controlling interests divided by operating income.

6 Cash dividend divided by basic earnings per share.

7 Total equity for shareholders in AB Volvo divided by number of shares outstanding at year end.

8 SEK 5.00 per share in ordinary dividend and SEK 5.00 per share in extra dividend.

9 Proposed by the Board of Directors. SEK 5.50 per share in ordinary dividend and SEK 7.50 per share in extra dividend.

## Other share data

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Number of shareholders at year end	250,798	245,663	240,521	237,654	234,989	237,871	246,265	242,482	251,715	240,043	233,311
Number of Series A shares outstanding at year end, million	456	457	459	472	485	492	499	526	643	657	657
Number of Series B shares outstanding at year end, million	1,577	1,576	1,573	1,560	1,546	1,537	1,530	1,502	1,385	1,371	1,371
Average number of shares outstanding, million	2,033	2,032	2,032	2,031	2,030	2,028	2,028	2,028	2,027	2,027	2,027
Number of Series A shares traded in Stockholm during the year, million	43.8	51.8	46.7	67.2	51.7	86.3	53.0	45.4	130.5	203.2	147.0
Number of Series B shares traded in Stockholm during the year, million	1,146.1	1,293.8	1,341.3	1,667.9	2,052.1	2,068.7	1,878.5	2,081.2	2,944.1	2,272.4	2,713.9

The largest shareholders in AB Volvo, December 31, 2019 <sup>1</sup>	Number of shares	% of total votes	Share of capital, %
Industrivärden	158,200,000	25.2	7.8
Geely Holding	167,247,516	15.7	8.2
AMF Insurance & Funds	19,327,820	3.1	1.0
Alecta	33,417,021	4.1	1.6
Norges Bank Investment Management	70,499,021	5.3	3.5
SHB	90,381,010	5.0	4.4
AFA Insurance	22,742,355	2.9	1.1
Swedbank Robur Funds	101,944,149	1.7	5.0
AP4 Fund	100,164,485	2.0	4.9
BlackRock	18,790,793	1.8	0.9
<b>Total</b>	<b>728,714,170</b>	<b>66.9</b>	<b>38.5</b>

1 Based on the number of outstanding shares.

Distribution of shares, December 31, 2019 <sup>1</sup>	Number of shareholders	% of total votes <sup>1</sup>	Share of capital, % <sup>1</sup>
1-1,000 shares	202,828	2.7	2.5
1,001-10,000 shares	43,814	5.3	5.7
10,001-100,000 shares	3,539	3.1	4.1
100,001-	616	88.9	87.7
<b>Total</b>	<b>250,798</b>	<b>100.0</b>	<b>100.0</b>

1 Based on all registered shares.

AB Volvo held 4.5% of the Company's shares on December 31, 2019.

## Business area statistics

Net sales <sup>1</sup>												
SEK M		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
<b>Trucks</b>	Europe	112,125	111,237	99,642	91,468	83,767	72,757	73,640	76,365	83,451	69,606	65,874
	North America	85,731	70,233	52,405	51,849	73,017	53,696	40,314	42,650	37,042	26,901	21,563
	South America	23,753	16,021	12,789	10,613	11,624	19,669	23,318	21,172	26,847	21,680	12,490
	Asia	37,610	36,664	36,998	33,464	31,589	29,264	26,740	36,531	37,840	35,231	26,943
	Africa and Oceania	17,427	16,203	14,646	13,256	13,982	15,518	14,462	15,565	13,741	13,887	12,069
	<b>Total</b>	<b>276,647</b>	<b>250,358</b>	<b>216,480</b>	<b>200,650</b>	<b>213,978</b>	<b>190,904</b>	<b>178,474</b>	<b>192,283</b>	<b>198,920</b>	<b>167,305</b>	<b>138,940</b>
<b>Construction Equipment</b>	Europe	30,300	27,291	22,977	19,739	17,732	17,215	16,356	16,518	17,765	16,138	12,987
	North America	17,404	15,575	12,234	10,724	11,843	10,784	8,319	12,027	7,829	6,267	5,475
	South America	2,532	2,304	1,760	1,414	2,207	3,234	3,314	3,788	4,163	4,130	2,578
	Asia	33,932	33,781	25,058	15,765	16,424	18,458	21,911	27,033	29,999	24,352	12,957
	Africa and Oceania	4,437	5,287	4,468	3,088	2,802	3,164	3,539	4,192	3,745	2,923	1,661
	<b>Total</b>	<b>88,606</b>	<b>84,238</b>	<b>66,497</b>	<b>50,731</b>	<b>51,008</b>	<b>52,855</b>	<b>53,437</b>	<b>63,558</b>	<b>63,500</b>	<b>53,810</b>	<b>35,658</b>
<b>Buses</b>	Europe	7,369	7,036	7,753	7,861	7,284	6,139	5,429	6,200	6,631	6,242	7,707
	North America	15,543	13,244	12,512	11,345	10,635	6,721	5,929	6,675	7,532	7,200	5,673
	South America	3,281	1,393	1,148	1,363	1,425	2,559	1,836	2,794	2,715	1,737	1,235
	Asia	2,617	2,094	3,135	3,067	2,557	1,892	2,055	2,853	2,953	3,299	2,749
	Africa and Oceania	2,209	2,060	1,530	1,749	1,678	1,334	1,457	1,774	1,992	2,038	1,101
	<b>Total</b>	<b>31,019</b>	<b>25,826</b>	<b>26,078</b>	<b>25,386</b>	<b>23,580</b>	<b>18,645</b>	<b>16,707</b>	<b>20,295</b>	<b>21,823</b>	<b>20,516</b>	<b>18,465</b>
<b>Volvo Penta</b>	Europe	6,671	7,487	5,727	4,973	4,462	3,779	3,714	3,620	4,274	4,507	4,390
	North America	3,180	2,912	2,456	2,191	2,161	1,584	1,491	1,486	1,379	1,500	1,100
	South America	319	299	289	291	365	386	297	306	335	335	284
	Asia	2,439	2,443	2,082	1,891	1,855	1,615	1,692	1,867	2,130	2,008	2,054
	Africa and Oceania	679	599	566	546	562	425	356	352	341	366	331
	<b>Total</b>	<b>13,287</b>	<b>13,741</b>	<b>11,119</b>	<b>9,893</b>	<b>9,406</b>	<b>7,790</b>	<b>7,550</b>	<b>7,631</b>	<b>8,458</b>	<b>8,716</b>	<b>8,159</b>
<b>Volvo Aero</b>	Europe	–	–	–	–	–	–	–	2,404	2,893	3,768	3,942
	North America	–	–	–	–	–	–	–	2,657	3,300	3,599	3,508
	South America	–	–	–	–	–	–	–	0	7	27	34
	Asia	–	–	–	–	–	–	–	109	104	233	205
	Africa and Oceania	–	–	–	–	–	–	–	49	52	81	114
	<b>Total</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>5,219</b>	<b>6,356</b>	<b>7,708</b>	<b>7,803</b>
Other and eliminations		8,802	4,157	3,635	4,799	5,610	5,806	9,252	7,044	4,532	–680	–538
<b>Net sales Industrial Operations</b>		<b>418,361</b>	<b>378,320</b>	<b>323,809</b>	<b>291,459</b>	<b>303,582</b>	<b>275,999</b>	<b>265,420</b>	<b>296,031</b>	<b>303,589</b>	<b>257,375</b>	<b>208,487</b>
<b>Financial Services</b>	Europe	6,279	6,063	5,431	5,116	5,278	5,120	4,686	4,703	4,663	4,733	7,127
	North America	5,534	4,600	4,234	4,202	4,033	2,999	2,900	2,833	2,326	2,605	3,004
	South America	1,555	1,276	1,368	1,235	1,116	1,122	1,009	1,195	1,131	1,156	1,070
	Asia	1,010	800	543	476	548	638	707	795	571	435	435
	Africa and Oceania	492	332	235	213	224	232	237	257	192	101	75
	<b>Total</b>	<b>14,870</b>	<b>13,070</b>	<b>11,812</b>	<b>11,242</b>	<b>11,199</b>	<b>10,111</b>	<b>9,539</b>	<b>9,783</b>	<b>8,883</b>	<b>9,031</b>	<b>11,711</b>
Eliminations		–1,252	–555	–873	–787	–2,265	–3,162	–2,336	–2,167	–2,104	–1,658	–1,836
<b>Volvo Group total</b>		<b>431,980</b>	<b>390,834</b>	<b>334,748</b>	<b>301,914</b>	<b>312,515</b>	<b>282,948</b>	<b>272,622</b>	<b>303,647</b>	<b>310,367</b>	<b>264,749</b>	<b>218,361</b>
<b>Of which:</b>												
<b>Vehicles<sup>2</sup></b>		332,558	299,356	252,063	223,996	237,430						
<b>Services</b>		85,804	78,963	71,747	67,463	66,152						
<b>Financial Services</b>		14,870	13,070	11,812	11,242	11,199						
<b>Eliminations</b>		–1,252	–555	–873	–787	–2,265						

1 Volvo Aero was divested in October 1, 2012.

2 Including construction equipment and Volvo Penta engines.

<b>Operating income<sup>1</sup></b>											
SEK M	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Trucks	31,552	19,541	20,383	15,020	19,517	4,157	6,145	10,216	18,227	10,112	-10,805
Construction Equipment	11,910	12,125	7,917	2,246	2,044	652	2,592	5,773	6,812	6,180	-4,005
Buses	1,337	575	928	911	860	92	-190	51	1,114	780	-350
Volvo Penta	1,876	2,341	1,439	1,269	1,086	724	626	541	825	578	-230
Volvo Aero	-	-	-	-	-	-	-	767	360	286	50
Financial Services	2,766	2,411	2,192	2,086	2,006	1,712	1,522	1,492	969	167	-680
Other	91	-2,515	-2,532	-707	-2,195	-1,514	-3,557	-1,217	-1,408	-102	-994
<b>Operating income/loss Volvo Group</b>	<b>49,531</b>	<b>34,478</b>	<b>30,327</b>	<b>20,826</b>	<b>23,318</b>	<b>5,824</b>	<b>7,138</b>	<b>17,622</b>	<b>26,899</b>	<b>18,000</b>	<b>-17,013</b>

<sup>1</sup> Between 2009 and 2011, the benefits from the synergies created in the business units are transferred back to the various business areas. Operating income in 2014 included expected credit losses of 660. See section for Key ratios regarding adjusted items.

<b>Operating margin</b>											
%	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Trucks	11.4	7.8	9.4	7.5	9.1	2.2	3.4	5.3	9.2	6.0	-7.8
Construction Equipment	13.4	14.4	11.9	4.4	4.0	1.2	4.9	9.1	10.7	11.5	-11.2
Buses	4.3	2.2	3.6	3.6	3.6	0.5	-1.1	0.3	5.1	3.8	-1.9
Volvo Penta	14.1	17.0	12.9	12.8	11.5	9.3	8.3	7.1	9.8	6.6	-2.8
Volvo Aero	-	-	-	-	-	-	-	14.7	5.7	3.7	0.6
<b>Volvo Group Industrial Operations</b>	<b>11.2</b>	<b>8.5</b>	<b>8.7</b>	<b>6.4</b>	<b>7.0</b>	<b>1.5</b>	<b>2.1</b>	<b>5.4</b>	<b>8.5</b>	<b>6.9</b>	<b>-7.8</b>
Financial Services	18.6	18.4	18.6	18.6	17.9	16.9	16.0	15.3	10.9	1.8	-5.8
<b>Volvo Group</b>	<b>11.5</b>	<b>8.8</b>	<b>9.1</b>	<b>6.9</b>	<b>7.5</b>	<b>2.1</b>	<b>2.6</b>	<b>5.8</b>	<b>8.7</b>	<b>6.8</b>	<b>-7.8</b>

<b>Regular employees at year-end</b>											
Number <sup>1</sup>	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Trucks	59,142	58,891	55,026	52,154	54,668	58,067	58,542	61,256	62,315	57,796	56,505
Construction Equipment	13,756	13,419	12,788	13,397	13,889	14,901	14,663	14,788	18,422	16,648	16,126
Buses	8,324	8,178	7,943	7,353	7,270	6,900	6,648	7,514	8,529	8,685	9,541
Volvo Penta	1,800	1,713	1,622	1,530	1,470	1,422	1,412	1,361	2,549	2,353	2,928
Volvo Aero	-	-	-	-	-	-	-	-	3,179	3,120	3,278
Financial Services	1,538	1,401	1,363	1,328	1,340	1,339	1,355	1,362	1,323	1,235	1,234
Other	8,015	8,527	8,362	8,277	9,827	10,193	12,913	12,436	1,845	572	596
<b>Volvo Group, total</b>	<b>92,575</b>	<b>92,129</b>	<b>87,104</b>	<b>84,039</b>	<b>88,464</b>	<b>92,822</b>	<b>95,533</b>	<b>98,717</b>	<b>98,162</b>	<b>90,409</b>	<b>90,208</b>

<sup>1</sup> As of 2012, employees in business units are not allocated to the business areas.

#### Environmental performance of Volvo production plants, Industrial operations

More detailed information, method for data collection and management approach are further described in Sustainability Notes, which will be made available on [volvogroup.com/GRI19](http://volvogroup.com/GRI19)

Absolute values and related to net sales	2019	2018	2017	2016
Energy usage (GWh; MWh/SEK M) <sup>2</sup>	2,118; 5.1	2,196; 5.8	2,068; 6.4	2,076; 7.1
Direct CO <sub>2</sub> emissions, scope 1 (1,000 tons; tons/SEK M) <sup>2</sup>	211; 0.5	223; 0.6	207; 0.6	211; 0.7
Indirect CO <sub>2</sub> emissions, scope 2 (1,000 tons; tons/SEK M) <sup>2</sup>	113; 0.3	198; 0.5	192; 0.6	196; 0.7
Water consumption (1,000 m <sup>3</sup> ; m <sup>3</sup> /SEK M)	5,706; 13.6	4,870; 12.9	4,817; 14.9	4,430; 15.2
NO <sub>x</sub> emissions (tons; kilos/SEK M)	311; 0.7	360; 1.0	301; 0.9	333; 1.1
Solvent emissions (tons; kilos/SEK M)	1,488; 3.6	2,148; 5.7	1,681; 5.2	1,792; 6.1
Sulphur dioxide emissions (tons; kilos/SEK M)	9.6; 0.02	13.6; 0.04	13.3; 0.04	12.9; 0.04
Hazardous waste (tons; kilos/SEK M)	51,024; 122.0	38,601; 102.0	31,941; 98.6	27,649; 94.9
Net sales, (SEK bn)	418.4	378.3	323.8	291.5

<sup>1</sup> Restated according to new standards.

<sup>2</sup> From 2012 revised system boundaries and emission factors.



Regular employees at year-end											
Number	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Sweden	21,094	20,887	19,965	19,235	20,412	21,384	22,588	23,052	24,663	23,073	22,763
Europe, excluding Sweden	29,033	28,807	27,596	26,955	27,662	29,449	29,746	30,382	30,458	29,239	29,793
North America	17,750	17,845	15,882	14,245	15,534	15,217	16,397	16,569	15,427	12,844	12,640
South America	5,466	5,228	4,774	4,762	5,380	6,353	6,275	5,977	5,234	4,322	4,257
Asia	16,863	16,888	16,526	16,469	17,046	17,793	17,953	20,222	19,924	18,535	18,416
Africa and Oceania	2,369	2,474	2,361	2,373	2,430	2,626	2,574	2,515	2,456	2,396	2,339
<b>Volvo Group total</b>	<b>92,575</b>	<b>92,129</b>	<b>87,104</b>	<b>84,039</b>	<b>88,464</b>	<b>92,822</b>	<b>95,533</b>	<b>98,717</b>	<b>98,162</b>	<b>90,409</b>	<b>90,208</b>

Delivered units											
Number	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Heavy-duty trucks (>16 tons)	201,092	193,886	171,963	158,025	176,589	173,650	170,307	172,798	179,779	123,522	82,675
Medium-duty trucks (7–16 tons)	12,700	14,065	14,331	15,691	14,749	15,114	16,779	32,935	34,631	30,657	21,653
Light trucks (<7 tons)	18,977	18,539	16,108	16,708	16,137	14,360	13,188	18,284	23,982	25,811	23,354
<b>Total trucks</b>	<b>232,769</b>	<b>226,490</b>	<b>202,402</b>	<b>190,424</b>	<b>207,475</b>	<b>203,124</b>	<b>200,274</b>	<b>224,017</b>	<b>238,391</b>	<b>179,989</b>	<b>127,681</b>

Number		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Trucks	Europe	104,145	110,349	105,432	97,909	86,448	72,458	82,088	84,355	95,113	65,503	49,145
	North America	62,308	53,877	37,941	39,193	64,507	57,714	44,755	47,806	42,613	24,282	17,574
	South America	23,729	16,146	11,073	9,442	11,069	23,741	29,137	23,443	29,274	21,483	12,587
	Asia	29,435	32,276	35,476	31,502	31,979	32,399	28,692	51,514	56,165	53,833	34,800
	Africa and Oceania	13,152	13,842	12,480	12,378	13,472	16,812	15,602	16,899	15,226	14,888	13,575
	Total	232,769	226,490	202,402	190,424	207,475	203,124	200,274	224,017	238,391	179,989	127,681

<b>Construction Equipment</b>	Europe	21,420	19,567	17,519	14,700	12,539	14,174	13,522	12,545		
	North America	7,278	7,218	5,685	5,105	5,710	7,127	5,240	6,782		
	South America	2,004	2,023	1,372	1,175	2,036	3,669	3,568	3,908		
	Asia	53,664	50,716	36,254	21,072	22,339	33,648	44,892	49,263		
	Africa and Oceania	2,519	3,130	3,297	2,254	2,094	2,699	3,564	2,982		
	<b>Total</b>	<b>86,885</b>	<b>82,654</b>	<b>64,127</b>	<b>44,306</b>	<b>44,718</b>	<b>61,317</b>	<b>70,786</b>	<b>75,480</b>		

<b>Buses</b>	Europe	2,350	2,142	2,645	2,676	2,431	2,221	2,146	2,491	2,695	2,395	3,164
	North America	3,084	2,796	2,973	2,659	2,398	1,590	1,752	1,826	3,014	2,092	1,539
	South America	1,917	973	784	1,149	1,415	2,985	2,434	2,560	2,620	1,174	690
	Asia	1,465	1,451	2,186	1,849	1,656	1,242	1,822	2,945	3,417	3,477	3,839
	Africa and Oceania	915	1,064	805	1,220	925	721	756	856	1,040	1,091	625
	<b>Total</b>	<b>9,731</b>	<b>8,426</b>	<b>9,393</b>	<b>9,553</b>	<b>8,825</b>	<b>8,759</b>	<b>8,910</b>	<b>10,678</b>	<b>12,786</b>	<b>10,229</b>	<b>9,857</b>

	2015	2014	2013	2012 <sup>1</sup>	2011	2010	2009
	2,077; 6.8	2,168; 7.9	2,320; 8.7	2,483; 8.5	2,471; 8.1	2,315; 9.0	1,888; 9.1
	220; 0.7	231; 0.8	255; 1.0	273; 0.9	255; 0.8	279; 1.1	213; 1.0
	192; 0.6	218; 0.8	243; 0.9	260; 0.9			
	4,919; 16.2	4,982; 18.1	5,815; 21.9	7,372; 25.2	7,970; 26.2	7,519; 29.2	6,637; 31.8
	344; 1.3	332; 1.2	347; 1.3	413; 1.4	474; 1.6	719; 2.8	322; 1.5
	1,885; 6.2	2,472; 9.0	2,221; 8.4	2,358; 8.1	2,554; 8.4	2,294; 8.9	1,435; 6.9
	32.1; 0.1	37.9; 0.1	23.4; 0.1	26; 0.1	34; 0.1	33; 0.1	38; 0.2
	27,824; 91.6	24,944; 90.4	28,395; 107.0	32,547; 111.4	25,943; 85.5	22,730; 88	17,558; 84
	303.6	276.0	265.4	292.2	303.6	257.4	208.5

## GRI CONTENT INDEX

The sustainability disclosures of the Volvo Group 2019 are found in two main documents. We call them ASR and GRI.

### ASR – the integrated part of the report

In this integrated report, sustainability and responsible business behavior are part of the Volvo Group's overall strategy and business model. The Annual and Sustainability Report is prepared in such a way that sustainability disclosures are found throughout this document in the section covering the context of how it is managed. This report also makes up the statutory sustainability report.

### GRI 2019 – Consolidated disclosures and more details

In addition, Sustainability Notes have been prepared to consolidate sustainability information, report more detailed data, additional information on management approach and general disclosures. These Sustainability Notes, which referred to as a GRI Report have been prepared in accordance with the GRI Standards 'Core' option and will be made available after the publication of this report on [volvogroup.com/GRI19](http://volvogroup.com/GRI19).

This GRI content index includes references to the Annual and Sustainability Report (ASR) and page number or to the document GRI 2019.

Omissions are marked with an asterisk and a code for the omission:

\*C = Competitively sensitive information

\*D = Lack of data or information

In the case where omissions need to be further explained, this is done in the GRI Report where more space is available.

## GRI INDEX

GENERAL DISCLOSURES		Document, page number	Omission/Comment
	ORGANIZATIONAL PROFILE		
102-1	Name of the organization	ASR back cover, GRI 2019	
102-2	Activities, brands, products, and services	ASR 1–3, 84–94, GRI 2019	
102-3	Location of headquarters	ASR back cover, GRI 2019	
102-4	Location of operations	ASR 59, GRI 2019	
102-5	Ownership and legal form	ASR 99, GRI 2019	
102-6	Markets served	ASR 3, 129, GRI 2019	
102-7	Scale of the organization	GRI 2019	
102-8	Information on employees and other workers	GRI 2019	
102-9	Supply chain	ASR 54–55, GRI 2019	
102-10	Significant changes to the organization and its supply chain	GRI 2019	
102-11	Precautionary Principle or approach	GRI 2019	
102-12	External initiatives	ASR 33, GRI 2019	
102-13	Membership of associations	GRI 2019	
	STRATEGY		
102-14	Statement from senior decision-maker	ASR 6–7, GRI 2019	
102-15	Key impacts, risks, and opportunities	ASR 102–111, GRI 2019	
	ETHICS AND INTEGRITY		
102-16	Values, principles, standards, and norms of behavior	ASR 40, GRI 2019	
102-17	Mechanisms for advice and concerns about ethics	ASR 40, GRI 2019	
	GOVERNANCE		
102-18	Governance structure	ASR 188–207, GRI 2019	
	STAKEHOLDER ENGAGEMENT		
102-40	List of stakeholder groups	GRI 2019	
102-41	Collective bargaining agreements	ASR 68, GRI 2019	

102-42	Identifying and selecting stakeholders	GRI 2019	
102-43	Approach to stakeholder engagement	GRI 2019	
102-44	Key topics and concerns raised	GRI 2019	
REPORTING PRACTICE			
102-45	Entities included in the consolidated financial statements	ASR 184, GRI 2019	
102-46	Defining report content and topic Boundaries	GRI 2019	
102-47	List of material topics	GRI 2019	
102-48	Restatements of information	GRI 2019	
102-49	Changes in reporting	GRI 2019	
102-50	Reporting period	GRI 2019	
102-51	Date of most recent report	GRI 2019	
102-52	Reporting cycle	GRI 2019	
102-53	Contact point for questions regarding the report	ASR 227, GRI 2019	
102-54	Claims of reporting in accordance with the GRI Standards	GRI 2019	
102-55	GRI content index	ASR 224–226, GRI 2019	
102-56	External assurance	ASR 211, GRI 2019	
<b>SPECIFIC DISCLOSURES</b>		Document, page reference	Omission/comment
<b>ECONOMIC CATEGORIES</b>			
<b>Standard: Economic performance 2016</b>			
103-1,2,3	Management approach	GRI 2019	Partial TCFD report
201-2	Financial implications and other risks and opportunities due to climate change	GRI 2019	*D
<b>Standard: Anti-corruption 2016</b>			
103-1,2,3	Management approach	GRI 2019	
205-2	Communication and training about anti-corruption policies and procedures	ASR 40, GRI 2019	
205-3	Confirmed incidents of corruption and actions taken	GRI 2019	
<b>ENVIRONMENTAL CATEGORIES</b>			
<b>Standard: Energy 2016</b>			
103-1,2,3	Management approach	GRI 2019	
302-1	Energy consumption within the organization	ASR 57–58, GRI 2019	
302-2	Energy consumption outside of the organization	ASR 57–58, GRI 2019	
302-3	Energy intensity	ASR 57–58, GRI 2019	
302-4	Reduction of energy consumption	ASR 57–58, GRI 2019	
<b>Standard: Water 2018</b>			
103-1,2,3	Management approach	GRI 2019	
303-1	Water withdrawal by source	GRI 2019	*D
<b>Standard: Emissions 2016</b>			
103-1,2,3	Management approach	GRI 2019	
305-1	Direct (Scope 1) GHG emissions	ASR 57–58, GRI 2019	
305-2	Energy indirect (Scope 2) GHG emissions	ASR 57–58, GRI 2019	
305-3	Other indirect (Scope 3) GHG emissions	ASR 57–58, GRI 2019	*C
305-4	GHG emissions intensity	ASR 57–58, GRI 2019	
305-5	Reduction of GHG emissions	ASR 57–58, GRI 2019	
<b>Standard: (Effluents and) Waste 2016</b>			
103-1,2,3	Management approach	GRI 2019	
306-2	Waste by type and disposal method	GRI 2019	
<b>Standard: Supplier environmental assessment 2016</b>			
103-1,2,3	Management approach	ASR 55, GRI 2019	
308-1	New suppliers that were screened using environmental criteria	ASR 55, GRI 2019	
308-2	Negative environmental impacts in the supply chain and actions taken	ASR 55, GRI 2019	



## SOCIAL CATEGORIES

### Standard: Employment 2016

103-1,2,3	Management approach	ASR 65, GRI 2019
401-1	New employee hires and employee turnover	ASR 65, GRI 2019

### Standard: Labor management relations 2016

103-1,2,3	Management approach	ASR 68, GRI 2019
402-1	Minimum notice periods regarding operational changes	ASR 68, GRI 2019

### Standard: Occupational health and safety 2018

103-1,2,3	Management approach	ASR 66, GRI 2019
403-1	Occupational health and safety management system	GRI 2019
403-2	Hazard identification, risk assessment, and incident investigation	GRI 2019
403-3	Occupational health services	GRI 2019
403-4	Worker participation, consultation, and communication on	GRI 2019
403-5	Worker training on occupational health and safety	GRI 2019
403-6	Promotion of worker health	GRI 2019
403-7	Prevention and mitigation directly linked by business relationships	GRI 2019
403-8	Workers covered by an occupational health and Safety management system	GRI 2019 *D
403-9	Work-related injuries	ASR 66, GRI 2019 *D

### Standard: Training and education 2016

103-1,2,3	Management approach	ASR 66, GRI 2019
404-2	Programs for upgrading employee skills and transition assistance programs	ASR 66, GRI 2019

### Standard: Diversity and equal opportunities 2016

103-1,2,3	Management approach	ASR 69, GRI 2019
405-1	Diversity of governance bodies and employees	ASR 69, GRI 2019

### Human rights

103-1,2,3	Management approach (combined for all human rights topics)	ASR 42, 61, GRI 2019	The main reporting structure is based on The UN Guiding Principles Reporting framework.
406-1	Incidents of discrimination and corrective actions taken	GRI 2019	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	GRI 2019	
408-1	Operations and suppliers at significant risk for incidents of child labor	GRI 2019	
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	GRI 2019	
412-1	Operations that have been subject to human rights reviews or impact assessments	ASR 42, GRI 2019	

### Standard: Supplier social assessment 2016

103-1,2,3	Management approach	ASR 55, GRI 2019
414-1	New suppliers that were screened using social criteria	ASR 55, GRI 2019 *D
414-2	Negative social impacts in the supply chain and actions taken	ASR 55, GRI 2019

### Standard: Customer health and safety 2016

103-1,2,3	Management approach	ASR 51, GRI 2019
	Assessment of the health and safety impacts of product and service categories	ASR 51, GRI 2019

## ANNUAL GENERAL MEETING, APRIL 8, 2020

The Annual General Meeting of AB Volvo will be held in Göteborg in Konserthuset, Götaplatsen, Wednesday, April 8, 2020.

### Notice

Those who wish to participate must be recorded as shareholders in the share register maintained by Euroclear Sweden AB on April 2, 2020 and give notice of intention to attend the meeting no later than April 2, 2020:

- by telephone, +46 8 402 90 76, notice of intention to attend the meeting could be given by telephone no later than 4.00 p.m. on April 2, 2020
- by mail addressed to AB Volvo (publ), "AGM", c/o Euroclear Sweden, P.O. Box 191, SE-101 23 Stockholm, Sweden
- on AB Volvo's website [www.volvogroup.com](http://www.volvogroup.com) or [volvogroup.se](http://volvogroup.se)

When giving notice, shareholders should state their:

- name
- personal registration number (corporate registration number)
- address and telephone number
- name and personal number of the proxy, if any
- number of any accompanying assistant(s) (maximum two)

To be entitled to participate in the annual general meeting, shareholders having their shares registered in the name of a nominee must request the nominee to enter the shareholder into the share register. Such registration, which can be temporary, must have been effected by April 2, 2020 and should therefore be requested well in advance of April 2, 2020.

## VOLVO'S ELECTION COMMITTEE

The following persons are members of Volvo's Election Committee:

Bengt Kjell	Chairman of the Election Committee (AB Industrivärden), appointed by the Annual General Meeting
Pär Boman	(Svenska Handelsbanken, SHB Pensionsstiftelse, SHB Personalstiftelse, SHB Pensionskassa and Oktogonen), appointed by the Annual General Meeting
Ramsay Brufer	(Alecta), appointed by the Annual General Meeting
Carine Smith Ihenacho	(Norges Bank Investment Management), appointed by the Annual General Meeting
Carl-Henric Svanberg	Chairman of the Board, appointed by the Annual General Meeting

Among other duties, the Election Committee is responsible for submitting to the Annual General Meeting proposals for candidates to serve as members of the Board of Directors, Chairman of the Board and proposal for auditors if applicable. The Election Committee also proposes the amount of the fees to be paid to the Board of Directors.

## PRELIMINARY PUBLICATION DATES

Annual General Meeting 2020	April 8, 2020
Report on the first quarter 2020	April 23, 2020
Report on the second quarter 2020	July 17, 2020
Report on the third quarter 2020	October 20, 2020

The reports are available on [www.volvogroup.com](http://www.volvogroup.com) and [www.volvogroup.se](http://www.volvogroup.se) on date of publication and are also sent electronically to shareholders who have advised Volvo that they wish to receive financial information.

Historical and current time series reflecting the Volvo Group's market information are published regularly on [www.volvogroup.com](http://www.volvogroup.com) and on [www.volvogroup.se](http://www.volvogroup.se).

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The Volvo Group drives prosperity through transport solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity. Founded in 1927, the Volvo Group is committed to shaping the future landscape of sustainable transport and infrastructure solutions. The Volvo Group is headquartered in Gothenburg, Sweden, employs 100,000 people and serves customers in more than 190 markets. In 2019, net sales amounted to SEK 432 billion. Volvo shares are listed on Nasdaq Stockholm.

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