ANNUAL REPORT RHEINMETALL GROUP

2018

RHEINMETALL
GROUP

KEY FIGURES 2018 I RHEINMETALL GROUP

		2018	2017[2]	2016	2015	2014	2013	2012[1]
RHEINMETALL GROUP								
Sales	€ million	**6,148**	5,896	5,602	5,183	4,688	4,417	4,704
Operating result	€ million	**492**	400	353	287	160	211	268
Operating result margin	%	**8.0**	6.8	6.3	5.5	3.4	4.8	5.7
EBIT	€ million	**518**	385	353	287	102	121	296
EBIT margin	%	**8.4**	6.5	6.3	5.5	2.2	2.7	6.3
EBT	€ million	**485**	346	299	221	22	45	216
Net income	€ million	**354**	252	215	160	21	22	173
Return on capital employed (ROCE)[3]	%	**17.1**	13.8	12.3	10.6	3.9	4.7	11.5
CASH FLOW								
Cash flow from operating activities	€ million	**242**	546	444	339	102	211	359
Cash flow from investments	€ million	**(277)**	(270)	(283)	(310)	(284)	(191)	(234)
Operating free cash flow	€ million	**(-35)**	276	161	29	(-182)	20	125
BALANCE SHEET								
Total equity	€ million	**2,172**	1,870	1,781	1,562	1,197	1,339	1,465
Total assets	€ million	**6,759**	6,101	6,150	5,730	5,271	4,866	4,899
Equity ratio	%	**32.1**	30.7	29.0	27.3	22.7	27.5	29.9
Cash and cash equivalents	€ million	**724**	757	616	691	486	445	501
Total assets less cash and cash equivalents	€ million	**6,035**	5,344	5,534	5,039	4,785	4,421	4,398
Net financial debt[4]	€ million	**31**	(230)	(19)	81	330	147	98
Leverage ratio[5]	%	**0.5**	(4.3)	(0.3)	1.6	6.9	3.3	2.2
Net gearing[6]	%	**1.4**	(12.3)	(1.1)	5.2	27.6	11.0	6.7
HUMAN RESOURCES								
Employees (Dec. 31), according to capacity		**22,899**	21,610	20,993	20,676	20,166	20,264	21,767
Domestic		**11,077**	10,394	10,181	10,070	9,827	9,729	10,667
Foreign		**11,822**	11,216	10,812	10,606	10,339	10,535	11,100
RHEINMETALL AUTOMOTIVE								
Sales	€ million	**2,930**	2,861	2,656	2,592	2,448	2,262	2,369
Operating result	€ million	**262**	249	223	216	184	158	139
Operating result margin	%	**8.9**	8.7	8.4	8.3	7.5	7.0	5.9
Research & Development	€ million	**193**	186	142	126	112	114	103
Capital expenditure (Net investments)	€ million	**161**	154	149	167	158	142	142
RHEINMETALL DEFENCE								
Order Income	€ million	**5,565**	2,963	3,050	2,693	2,812	3,339	2,933
Order Backlog (Dec. 31)	€ million	**8,577**	6,416	6,656	6,422	6,516	6,050	4,987
Sales	€ million	**3,221**	3,036	2,946	2,591	2,240	2,155	2,335
Operating result	€ million	**254**	174	147	90	(9)	60	145
Operating result margin	%	**7.9**	5.7	5.0	3.5	(0.4)	2.8	6.2
Research & Development	€ million	**143**	109	74	73	65	74	74
Capital expenditure	€ million	**101**	89	95	96	76	62	90
SHARE								
Stock price (Dec. 31)	€	**77.16**	105.85	63.90	61.48	36.27	44.85	36.40
Earnings per share	€	**7.10**	5.24	4.69	3.88	0.47	0.75	4.55
Dividend per share	€	**2.10**	1.70	1.45	1.10	0.30	0.40	1.80

[1] Includes the Aluminum Technology business unit, which has been operating since December 2014 as a joint venture with a Chinese partner.
[2] Carrying amounts adjusted due to the change in measurement of operating land.
[3] EBIT/average capital employed
[4] Financial liabilities less cash and cash equivalents
[5] Net financial liabilities / total assets adjusted for cash and cash equivalents
[6] Net financial liabilities / equity

RHEINMETALL GROUP 2018

1 RHEINMETALL	2 CORPORATE SECTORS
6 DIVISIONS	144 CUSTOMER COUNTRIES

24,949 EMPLOYEES

120 LOCATIONS WORLDWIDE	6.1 SALES € BILLION

Rheinmetall locations

AMERICAS

BRASIL
Nova Odessa
CANADA
Ottawa
St.-Richelieu
MEXIKO
Celaya
Mexico-City
USA
Auburn Hills/MI
Biddeford/ME
East Camden/AR
Greensburg/IN
Greenville/SC
Marinette/WI
Stafford/VA
Wilmington/DE

EUROPE GERMANY

GERMANY
Aschau am Inn
Berlin
Bonn
Bremen
Dormagen
Düren
Düsseldorf
Flensburg
Gardelegen
(Letzlingen)
Gera
Hallbergmoos
Hamburg
Hartha
Harzgerode
(Silberhütte)
Heilbronn
Ismaning
Jena
Kassel
Koblenz
Kiel
Krefeld
Langenhagen
Lohmar
Mainz
Munich
Neckarsulm
Neuenburg
Neuenstadt
Neuss
Oberndorf
Papenburg
Rostock
Röthenbach
(Pegnitz)
Schneizlreuth
(Fronau)
St. Leon-Rot
Stockach
Tamm
Trittau
Unterlüß
Walldürn
Wedel

EUROPE

BELGIUM
Brussels
FRANCE
Le Blanc Mesnil
Meyzieu
Roissy (Villepinte)
Thionville
ITALY
Domusnovas
Ghedi
Lanciano
Livorno
Pescara
Rome
LITHUANIA
Vilnius
NETHERLANDS
Ede
Hengelo
NORWAY
Nøtterøy
AUSTRIA
Schwanenstadt
Vienna
POLAND
Gliwice
Warsaw
ROMANIA
Campia Turzi
RUSSIAN
FEDERATION
Moscow
SWEDEN
Stockholm
SWITZERLAND
Altdorf
Bern
Lohn-Ammannsegg

international

Studen
Thun
Urdorf
Wimmis
Zurich
SPAIN
Abadiano
Amorebieta
CZECH REPUBLIC
Trmice
Ústí nad Labem
Chabařovice
UNITED KINGDOM
Bristol
Isle of Wight
Kirtlington
London
Swindon

AFRICA

SOUTH AFRICA
Boskop
Maitland
Potchefstroom
(Boksburg)
Pretoria
Somerset West
Wellington

ASIA

CHINA
Chongqing
Kunshan
Shanghai
Yantai
INDIA
Mumbai
Pune
(Takwe)
Supa
JAPAN
Hiroshima
(Takaya)
Odawara
(Kanagawa)
MALAYSIA
Malacca
SAUDI ARABIA
Riyadh
SINGAPORE
Singapore
SOUTH KOREA
Seoul
TURKEY
Ankara
Istanbul
UAE
Abu Dhabi
SAIF Zone, Sharjah

AUSTRALIA

AUSTRALIA
Adelaide
Brisbane
Melbourne

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Supervisory Board of Rheinmetall AG

SHAREHOLDER REPRESENTATIVES	YEAR BORN	NATIONALITY	MEMBERSHIP OF COMMITTEES	FIRST APPOINTED	MANDATE*
SHAREHOLDER REPRESENTATIVES					
Ulrich Grillo Chairman of the Supervisory Board	1959	German	S A P N V	May 10, 2016	2021
Dr.-Ing. Dr.-Ing. E.h. Klaus Draeger	1956	German	S	May 9, 2017	2022
Prof. Dr. Andreas Georgi	1957	German	A P	June 10, 2002	2022
Prof. Dr. Susanne Hannemann	1964	German	A	May 15, 2012	2022
Dr. Franz Josef Jung	1949	German	N	May 9, 2017	2022
Detlef Moog	1948	German	S	July 8, 2010	2021
Klaus-Günter Vennemann	1954	German	N	May 10, 2016	2021
Univ.-Prof. Dr. Marion A. Weissenberger-Eibl	1966	German	V	May 10, 2016	2021
EMPLOYEE REPRESENTATIVES					
Dr. Rudolf Luz Deputy Chairman of the Supervisory Board	1956	German	S P A V	January 26, 2001	2022
Roswitha Armbruster	1954	German	A	May 15, 2012	2022
Dr. Daniel Hay	1979	German	P	May 7, 2014	2022
Dr. Michael Mielke	1964	German		September 1, 2010	2022
Reinhard Müller	1960	German	V	May 9, 2017	2022
Dagmar Muth	1961	German	S	July 1, 2015	2022
Markus Schaubel	1963	German	S	July 1, 2014	2022
Sven Schmidt	1975	German	A	July 1, 2014	2022

*Until the end of the Annual General Meeting

S A P N V

Chairman | Strategy Committee | Audit Committee | Personnel Committee | Nomination Committee | Mediation Committee

Letter to shareholders
Report of the Supervisory Board

Supervisory Board of Rheinmetall AG
Left to right: Dr.-Ing. Dr.-Ing. E.h. Klaus Draeger, Dr. Rudolf Luz (Deputy Chairman), Professor Dr. Andreas Georgi, Univ.-Prof. Dr. Marion A. Weissenberger-Eibl, Reinhard Müller, Professor Dr. Susanne Hannemann, Ulrich Grillo (Chairman), Klaus-Günter Vennemann, Dr. Franz Josef Jung, Dr. Daniel Hay, Detlef Moog, Roswitha Armbruster, Dr. Michael Mielke, Markus Schaubel, Dagmar Muth, Sven Schmidt

Cooperation between the Supervisory Board and Executive Board

During the year under review, the Supervisory Board of Rheinmetall AG performed all of the tasks and duties assigned to it in accordance with the law, the Articles of Association and its Rules of Procedure with commitment, responsibility, diligence and conscientiousness. We supervised the Executive Board closely, provided it with support and advice on all matters of importance to the company and monitored its activities continuously. Cooperation between the Supervisory Board and Executive Board was characterized by openness, constructive dialog and trust at all times. The Supervisory Board was involved at an early stage in all decisions of key strategic and economic importance to the Rheinmetall Group. The members of the Supervisory Board had sufficient opportunity at all times to look critically at reports and proposed resolutions and to contribute their own suggestions.

Where our approval was required in accordance with the law, the Articles of Association or the Rules of Procedure for measures or transactions of the Executive Board, we granted it in each case on the basis of draft resolutions that were submitted to us in good time, following thorough examination and detailed discussion.

Between meetings, we were informed of the course of business and the current situation of the Rheinmetall Group and its two sectors, Defence and Automotive, in writing on a quarterly basis. I was in regular contact with the CEO throughout the entire fiscal year. At numerous face-to-face meetings and during telephone conversations, subjects including planned business policy, the background to pending decisions and significant transactions of importance to the assessment of the situation and the company's development were discussed.

Report of the Supervisory Board

On the basis of extensive reports and in-depth presentations and the detailed information provided by the Executive Board and the other managers, the Supervisory Board carried out a critical examination of the company's management. Based on our intensive work and reviews, we are convinced of the legality and propriety of management by the Executive Board and of the performance of the organization.

Key issues and resolutions passed by the Supervisory Board as a whole

Four scheduled meetings of the Supervisory Board took place in the year under review. We examined the company's situation, challenges, opportunities and prospects in detail. In the regular Supervisory Board meetings, the members of the Supervisory Board addressed in detail matters including the award of upcoming projects and large orders, the course of business, the current earnings and financial position, general political, economic, business and technological conditions, the company's prospects and challenges when faced with competition from abroad and options, opportunities and risks in regional growth markets. Strategic and operational targets were discussed, along with their economic significance for Rheinmetall and their expected impact on the company's financial situation. Aside from the Group's corporate orientation and the structural development of the Automotive and Defence sectors, our discussions focused on opportunities and measures to ensure the competitiveness and future viability of the company. We also dealt with major acquisition projects and specific risks to the company as required.

One agenda item at the annual accounts meeting that took place in Düsseldorf on March 14, 2018, was discussion of the single-entity and consolidated financial statements of Rheinmetall AG as of December 31, 2017, issued with an unqualified auditor's opinion by PricewaterhouseCoopers (PwC), together with the combined management report for Rheinmetall AG and the Rheinmetall Group and the Executive Board's proposal for the appropriation of net income for the year. The Executive Board presented the company's performance and results for fiscal 2017 in detail and also looked more closely at important individual issues in the Automotive and Defence sectors in this context. The auditors described the scope of their assignment, their audit methods and the main areas of the audit, and reported in detail on the material findings and results of their audits. Both the Executive Board and the auditor provided comprehensive answers to the Supervisory Board's questions. Taking into account the company's financial situation and the expectations of shareholders and the capital market, we approved the Executive Board's proposal for appropriation of net income.

We also discussed the Supervisory Board's report to the Annual General Meeting and deliberated in detail on the draft proposals to be submitted to the 2018 Annual General Meeting, which we approved taking into account one adjustment. The Executive Board provided information on business performance as at January 2018 and gave its outlook on results to be expected in the first quarter of 2018. Furthermore, we addressed the degree of achievement of targets by members of the Executive Board for fiscal 2017 and determined the Executive Board members' target agreements for fiscal 2018. As well as discussing action that needed to be taken in connection with the situation in Greece, we looked at the options presented by the Executive Board for the sale of a production facility formerly used by Rheinmetall Automotive. Following detailed discussions, we approved the project presented by the Executive Board.

The second Supervisory Board meeting of the year was held in Berlin on May 7, 2018. The Executive Board outlined the business performance of the Rheinmetall Group and the Automotive and Defence sectors in the first quarter of 2018. We were also informed of the current position regarding major projects of Rheinmetall Defence. Along with issues relating to overall and economic policy in individual customer nations of the Defence sector, our discussions dealt with questions relating to controls on exports of military equipment. The Executive Board also looked at the shareholder structure as at December 2017 and provided information on the Group's reclassification as 'Investment Grade' by rating agency Moody's after more than four years on April 27, 2018. In a brief overview, the successful development of the Recruiting Center, which has been organized centrally since March 2017, was presented along with the positive effects of the employer branding activities, which have since been strengthened considerably, on the number of applications received on the Internet platform TalentLink, for example. Later in the meeting, we prepared for the Annual General Meeting taking place the following day.

On August 22, 2018, at the Supervisory Board meeting that took place in Unterlüß, the Executive Board explained the development of the business as at July 2018 as well as the business performance expected for 2018 as a whole and in this context also addressed specific issues in the Automotive and Defence divisions. In addition, the Executive Board reported in detail on the current status of major programs in the Defence sector. The Executive Board also presented the results of the annual statutory audit relating to the European Market Infrastructure Regulation (EMIR). According to the certificate issued by the independent auditor from July 2018, the company's system for ensuring compliance with the requirements under section 20(1) of the Wertpapierhandelsgesetz (WpHG – German Securities Trading Act) was appropriate and effective overall and in all material respects during the period for which the audit was required from January 1 to December 31, 2017. We also dealt with the status of negotiations on a settlement with the D&O insurance company relating to the situation in Greece dating from 2014. Furthermore, we discussed the implementation of recommendations in the German Corporate Governance Code and, together with the Executive Board, issued a declaration of conformity in accordance with section 161 of the Aktiengesetz (AktG – German Stock Corporation Act), the content of which remained unchanged.

We were informed by the Chairman of the Audit Committee that PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Düsseldorf branch, which was elected at the Annual General Meeting on May 8, 2018, had been mandated in writing on August 1, 2018, to audit the single-entity and consolidated financial statements together with the combined management report for Rheinmetall AG and the Rheinmetall Group for fiscal 2018.

The Executive Board presented its report for the third quarter of 2018 at the final meeting of the year, which was held in Düsseldorf on December 6, 2018. It informed the plenary assembly about the current business situation of the Rheinmetall Group and provided an outlook on the performance to the end of the fiscal year. The medium-term corporate planning from 2019 to 2021 including the financial, investment and human resources planning was then presented to the Supervisory Board in detail and the assumptions made by the Executive Board for the corporate planning were discussed in depth. This also included the plausibility of the expectations presented as well as the opportunities and risks. We took notice of and approved the corporate planning from 2019 to 2021 and approved the investment master budget for fiscal 2019. We also dealt with issues relating to remuneration of the Executive Board.

In connection with liability issues in the compliance case relating to Greece in 2014, we looked in detail at the legal report presented by a respected German law firm and the status of negotiations on a settlement with former members of the Executive Board of Rheinmetall AG and the D&O insurance company.

Report on the work of the committees

The Supervisory Board had five permanent committees in the year under review: the Strategy Committee, the Audit Committee, the Personnel Committee, the Nomination Committee and the Mediation Committee in accordance with section 27(3) of the *Mitbestimmungsgesetz* (German Codetermination Act). The primary task of these committees is to prepare a structure for complex and time-consuming topics prior to plenary assembly meetings and to examine proposed resolutions submitted by the Executive Board in advance. The Chairman of the Supervisory Board presides over all committees with the exception of the Audit Committee. The members of the committees attended all meetings in 2018. Further information on the duties of the committees can be found in the corporate governance report on page 121 et seq. The membership of the committees is shown on page 2.

The Strategy Committee met in March and July of the year under review. The external boundary conditions presented by the Executive Board and the associated challenges and potential disruptions were discussed at length. Topics that were considered in greater depth included entrepreneurial ambitions, relevant trends, potential for further profitable growth, the expansion of strategic core areas of expertise and technological positions, possible new areas of business, initiatives for expansion into emerging markets and regions and the future positioning of the Defence and Automotive sectors with their respective business models and the resulting targets and measures.

The Audit Committee met in March, May, August, November and December in the last fiscal year. As well as a preparatory examination of the single-entity and consolidated financial statements, on which it issued a recommendation to the plenary assembly of the Supervisory Board on the passing of a resolution in accordance with section 171 AktG, it dealt in particular with the monitoring of the accounting process, the effectiveness of the internal control system, the risk management system, the internal auditing system and the compliance management system. Prior to publication, the quarterly and semi-annual results were discussed in detail with the Executive Board. The auditors of the financial statements participated in the meetings in March 2018 and December 2018.

Apart from the discussion of specific individual issues in the Automotive and Defence sectors, other subjects dealt with in the meetings included reports on major projects in the Defence sector, asset liability management and management of currency risks, the anticipated impact on the Rheinmetall Group of the application of the new IFRS 15 and IFRS 16 accounting standards, the non-financial statement in accordance with the CSR-Richtlinie-Umsetzungsgesetz (German Act on Implementation of the EU CSR Directive) as part of the combined management report, the EMIR statutory audit, the results of the shareholder structure analysis for 2017, the selection and mandating of the auditors for fiscal 2018 and the selection procedure for the upcoming rotation of the auditor in accordance with the Abschlussprüfungsreformgesetz (AReG – German Audit Reform Act), which came into effect on June 17, 2016.

At meetings during the year, the members of the Audit Committee were also informed by managers at the company about the Group function Legal, compliance and tax compliance, risk management and Internal Audit at the Rheinmetall Group. Along with the standard processes put in place, the individual content of reports was also discussed. The members of the Audit Committee were able to build up a more in-depth picture of existing structures and organizations, workflows and rules and had the opportunity to ask questions about and comment on developments that were presented and improvement measures planned across multiple stages in these areas. They concluded that Rheinmetall AG has appropriate, adequate and effective systems and control mechanisms in these areas and that it reviews these on an ongoing basis and is systematically and consistently expanding them.

Two members of the Audit Committee have particular knowledge and experience in the application of accounting principles and internal control processes (financial experts). They are independent and are not former members of the Executive Board of the company.

The Personnel Committee met three times in March, August and December 2018 and prepared topics for the Supervisory Board including personnel issues relating to the Executive Board of the Group, such as the amount and appropriateness of remuneration, the structure of target agreements, the extent to which targets were achieved for fiscal 2017 and the setting of targets and ranges for variable remuneration of the Executive Board in 2018. Details of remuneration for the Executive Board are presented in the remuneration report on pages 130 to 133.

In addition, the Personnel Committee, which was tasked by the plenary assembly at the Supervisory Board meeting on March 22, 2017 with leading negotiations on a possible settlement with former members of the Executive Board of Rheinmetall AG and the D&O insurance company relating to the situation in Greece, was informed of the opportunities and risks associated with the conclusion of a settlement.

The Mediation Committee did not convene in the past fiscal year.

The Nomination Committee did not meet in the year under review.

Membership of the Supervisory Board and Executive Board

There were no changes to the composition of the Supervisory Board or Executive Board in the year under review.

Conflicts of interest

The Supervisory Board was not notified of and did not otherwise become aware of any conflicts of interest involving members of the Executive Board or Supervisory Board within the meaning of item 5.5.2 of the German Corporate Governance Code in the last fiscal year. No former members of the Executive Board of the company are members of the Supervisory Board.

Attendance at meetings

	Member	Meetings | Attendance
Plenary assembly	Ulrich Grillo	4 | 4
	Dr.-Ing. Dr.-Ing. E.h. Klaus Draeger	4 | 4
	Professor Dr. Andreas Georgi	4 | 3
	Professor Dr. Susanne Hannemann	4 | 4
	Dr. Franz Josef Jung	4 | 4
	Detlef Moog	4 | 4
	Klaus-Günter Vennemann	4 | 4
	Univ.-Prof. Dr. Marion A. Weissenberger-Eibl	4 | 3
	Dr. Rudolf Luz	4 | 4
	Roswitha Armbruster	4 | 4
	Dr. Daniel Hay	4 | 4
	Dr. Michael Mielke	4 | 4
	Reinhard Müller	4 | 4
	Dagmar Muth	4 | 4
	Markus Schaubel	4 | 4
	Sven Schmidt	4 | 4
Strategy Committee	Ulrich Grillo	2 | 2
	Dr.-Ing. Dr.-Ing. E.h. Klaus Draeger	2 | 2
	Detlef Moog	2 | 2
	Dr. Rudolf Luz	2 | 2
	Dagmar Muth	2 | 2
	Markus Schaubel	2 | 2
	Klaus-Günter Vennemann (guest)	2 | 1
Audit Committee	Professor Dr. Andreas Georgi	5 | 5
	Ulrich Grillo	5 | 5
	Professor Dr. Susanne Hannemann	5 | 5
	Dr. Rudolf Luz	5 | 5
	Roswitha Armbruster	5 | 5
	Sven Schmidt	5 | 5
Personnel Committee	Ulrich Grillo	3 | 3
	Professor Dr. Andreas Georgi	3 | 3
	Dr. Rudolf Luz	3 | 3
	Dr. Daniel Hay	3 | 3

Corporate governance

The joint declaration by the Supervisory Board and Executive Board on August 22, 2018 – in accordance with section 161 AktG – states that Rheinmetall AG complies with the recommendations of the German Corporate Governance Code, with one exception. The declaration has been made permanently available on the company’s website, with an explanation of the deviation, and is also published on page 125 of this annual report. Further comments on corporate governance at the Rheinmetall Group in accordance with item 3.10 of the German Corporate Governance Code are provided in the corporate governance report, which has been combined with the corporate governance declaration in accordance with section 289f and section 315d of the German Commercial Code (HGB).

Auditing of the single-entity and consolidated financial statements for 2018

The single-entity financial statements prepared by the Executive Board in accordance with German GAAP as of December 31, 2018, and the consolidated financial statements prepared on the basis of section 315a HGB in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, together with the combined management report, including the non-financial statement, for Rheinmetall AG and the Rheinmetall Group, including the accounts, were audited by PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Düsseldorf branch, in accordance with statutory regulations and were issued with an unqualified auditor's opinion. The auditor conducted the audit in accordance with German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW).

The members of the Supervisory Board were issued with the single-entity and consolidated financial statements documentation, the draft proposal on the appropriation of net income and the audit reports prepared by the auditors in good time in order to ensure an in-depth, thorough review. This financial statement documentation was discussed in detail at the Audit Committee's meeting on March 11, 2019, and the Supervisory Board's annual accounts meeting on March 12, 2019, in the presence of the auditors and following the presentation of the auditors' report. They provided information on the scope, focal points and key results of their audit, answered all questions without reservations and also offered additional information.

We examined the single-entity and consolidated financial statements, the combined management report and the proposal for the appropriation of net income for the year. There were no objections. We concurred with the results of the audit performed by the auditors. We approved the single-entity and consolidated financial statements presented by the Executive Board for the 2018 fiscal year. The single-entity financial statements have thus been adopted under the terms of section 172 AktG. We concurred with the Executive Board's proposal for the appropriation of net income, which provides for the distribution of a dividend of €2.10 per entitled share for the year under review, taking into account the company's results of operations and financial position, investment planning and the interests of shareholders.

On behalf of my colleagues, I would like to thank all of our customers, shareholders and business partners for the confidence they have placed in Rheinmetall, often over many years. We would also like to sincerely thank all those who have helped to ensure Rheinmetall's success in 2018 over the last 12 months with outstanding commitment and important personal contributions – the Executive Board, managers and our 24,949 employees around the world.

Düsseldorf, March 12, 2019

On behalf of the Supervisory Board
Ulrich Grillo
Chairman

ARMIN PAPPERGER
Chief Executive Officer

Dear Shareholders,

The Rheinmetall Group is looking back at another record year. In a challenging market environment, we generated consolidated sales of € 6.1 billion and thus succeeded in increasing operating earnings to a new high of € 492 million and achieving an operating earnings margin of 8 %. It is important to us that our shareholders share in our financial success. The Executive Board and Supervisory Board will propose increasing the dividend to €2.10, from €1.70 per share in the previous year, to the Annual General Meeting.

Rheinmetall has the right answers to some of the key challenges of the 21st century. Rheinmetall Automotive not only offers products for continuous optimization of the combustion engine, but is also increasingly driving forward the development of hybrid and electric vehicles with our solutions for environmentally friendly mobility. The Defence sector is benefiting from the need for modernization of military equipment in many countries around the world. Our company's future-oriented technologies ensure profitable business development and create new growth potential, despite growing challenges in our markets.

But we are not standing still. The next few years will see us concentrate on five technological clusters that were identified in 2018 – automation, digitalization, next sensors, e-mobility and artificial intelligence – and thus step up our innovation processes and product developments.

Our teams give their best for our customers every day, laying the foundations for the future success of the Rheinmetall Group. The confidence our shareholders and business partners place in us provides us with both confirmation and motivation.

Yours,

HELMUT P. MERCH
Finance

Higher profitability with rising sales: Despite difficult overall conditions in our markets, we delivered in 2018. Both corporate sectors increased their profitability further and created the basis for sustainably profitable growth in new market segments. Our successful economic performance was thus also reflected in the performance of our share price.”

HORST BINNIG
Automotive

The automotive market is going through a period of upheaval in which the ability to innovate is needed more than ever. Our key figures show that we are very well positioned to deal with the challenges facing the mobility sector. Whether it’s about increasing the efficiency of combustion engines or innovative contributions to electromobility and hybrid technology, Rheinmetall Automotive is contributing substantially to the mobility of tomorrow.

PETER SEBASTIAN KRAUSE
Human Resources

With our restructured governance and the further strengthening of the Rheinmetall employer brand, we have created the right conditions in organizational terms for the Rheinmetall Group’s further growth. We remain true to our roots in Automotive and Defence, but are also laying the foundations to benefit from new cross-sector megatrends with our focus on five technology clusters.

Rheinmetall on the capital markets

Rheinmetall share basic information

	2018
Share class	Bearer shares
Securities identification number (WKN)	703000
International Securities Identification Number (ISIN)	DE 0007030009
Stock exchange	Xetra and all German stock exchanges
Deutsche Börse admission segment	Prime Standard/Regulated Market
Sector	Industrial products
Indices	MDAX, EURO STOXX 600
Bloomberg ticker symbol	RHM
Reuters ticker symbol	RHMG
Designated sponsors	Commerzbank, Deutsche Bank
Announcements	Electronic Federal Gazette
First listed on the stock exchange	November 14, 1894

Rheinmetall share key figures

		2018	2017	2016	2015	2014
Equity as of year-end						
Issued capital	€ million	111.51	111.51	111.51	111.51	101.37
Issued shares	Thousands of units	43,559	43,559	43,559	43,559	39,599
Free float (incl. treasury stocks)	%	100	100	100	100	100
Treasury stock	%	1.3	1.6	2.0	2.4	3.1
Share price						
Share price at end of fiscal year (Xetra)	€	77.16	105.85	63.90	61.48	36.27
Performance over the year	%	-27	+66	+4	+70	-19
Highest closing price (Xetra)	€	118.15	108.65	70.61	63.19	57.87
Lowest closing price (Xetra)	€	70.94	64.13	51.47	34.60	30.69
Stock exchange data						
Stock market value of all shares as of year-end	€ billion	3.4	4.6	2.8	2.7	1.4
Average sales per trading day (Xetra)	Thousands of units	179	156	179	225	211
MDAX ranking at year-end of shares						
according to market capitalization		23	16	21	19	33
according to stock exchange turnover		23	23	23	22	20
Key figures						
Earnings per share	€	7.10	5.24	4.69	3.88	0.47
Equity per share	€	50.58	45.67	41.78	40.07	31.34
Cash flow per share	€	14.54	10.49	10.06	9.39	5.91
Dividend						
Total payout	€ million	90.3	72.9	61.9	46.8	11.5
Payout ratio	%	30	32	31	28	64
Dividend per share entitled to dividends	€	2.10	1.70	1.45	1.10	0.30
Dividend yield	%	2.7	1.6	2.3	1.8	0.8

Stock markets experience a downward trend with increased volatility

After investors had enjoyed strongly positive share price growth in 2017, a more sober mood set in over the course of 2018. This was partly due to economic factors, which can be seen in the reduced growth prospects of many countries and regions. Having forecast growth of 2.4% in gross domestic product for the euro region in April 2018, the IMF lowered its expectations to 2.0% in October 2018. The major euro countries of Germany and France accounted for an above-average share of this decline. The IMF adjusted its growth forecast for Germany from 2.5% to 1.9% and for France from 2.1% to 1.6%.

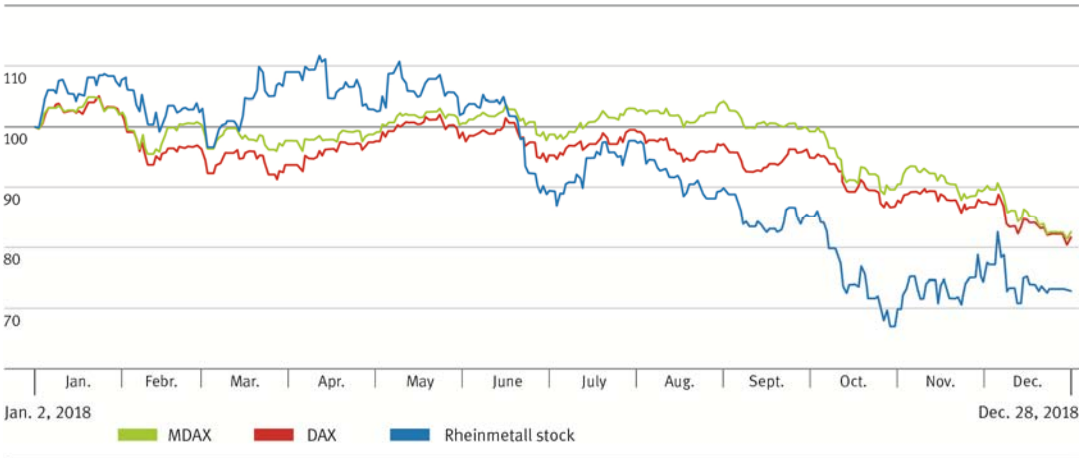
At the same time, other factors of uncertainty also had an impact on stock markets. While the US is increasingly focusing on its own interests with its “America First” policy and other countries such as Russia and China are starting to have much more of an impact beyond their own borders, international conflicts have escalated. These include the military disputes in Syria and Yemen, discussions about the nuclear deal with Iran and the ongoing conflict between Russia and Ukraine, which contributed to uncertainty during the course of the year. However, economic disputes over the introduction of tariffs on goods exported from China and Europe to the US and possible countermeasures also weighed heavily on the stock markets.

In Europe, the election of a populist government in Italy led to conflict with the European Union about the stability policy. In Germany, the Federal Administrative Court granted towns and local authorities the right to ban diesel passenger vehicles in January 2018, which further fueled the dispute over diesel technology that has been ongoing since 2015 and put the automotive industry, which is so important in Germany in particular, under pressure.

These developments resulted in a downward trend in the DAX that was initially moderate but became more marked in the fourth quarter. The index began the year at 12,872 points and had lost 5% by the end of September. In the fourth quarter, it fell as low as 10,559 points at close of trade on December 28, 2018, down 18% year-on-year. The MDAX also lost 18%, falling from 26,201 points at the end of 2017 to 21,588 points at the end of 2018. Of the 60 companies in this index, which also includes shares in Rheinmetall AG, only 16 experienced share price growth.

Rheinmetall stock price trend in comparison to development of the DAX and MDAX

January 2, 2018 (100%) through December 28, 2018



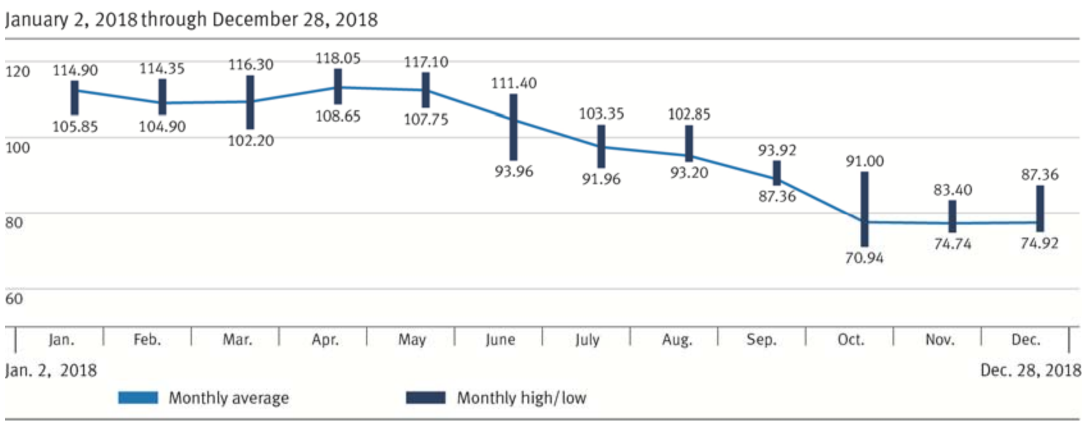
Letter to shareholders
Rheinmetall on the capital markets

The Rheinmetall share over the course of the year

Having gained 66% in 2017, the Rheinmetall share initially continued its extremely positive performance at the beginning of 2018. The share price reached a record high of €118.15 on April 10, 2018, representing growth of 12% since the end of 2017.

Triggered by difficulties in the European automotive industry with the certification of permissible emission levels in accordance with the new WLTP test procedure (Worldwide harmonized Light vehicles Test Procedure) and profit warnings from several well-known automotive manufacturers and suppliers, share prices in this industry fell significantly in the second half of the year. Although the market environment remained positive for the Defence sector and was characterized by high order intake, the Rheinmetall share was dragged into the downward trend in the automotive industry, resulting in an annual low of €70.94 on October 26, 2018. The last two months of the year saw a resurgence in investor confidence, however, and the share price recovered to €77.16 by the end of the year (-27% against the end of the previous year). The positive response at the Capital Markets Day in November 2018 played a part here, while the fact that, unlike most of the companies in the automotive industry listed on the indices, Rheinmetall did not have to issue a profit warning also buoyed the share price.

Rheinmetall share price performance €



Rheinmetall's share listing

The trend towards OTC (over the counter) trading, which has been ongoing for several years, intensified in 2018. In relation to the annual volume, 46.1% of trading in Rheinmetall shares took place via these systems. The importance of the Xetra system operated by Deutsche Börse remained more or less unchanged at 28.1%. In contrast, the share of turnover in securities going through multilateral trading facilities (MTF), which are similar to stock exchanges, and through regional exchanges dropped to 25.8%.

Rheinmetall shares processed on trading platforms %

Trading platform	2018	2017
1 Xetra	28.1	28.2
2 Over the Counter (OTC)	46.1	43.9
3 Other (MTF, Floor Exchange)	25.8	27.9

Ranking in the MDAX

Deutsche Börse changed the structure of its indices in September 2018. As well as opening the TecDAX to companies from the other indices and extending the SDAX from 50 to 70 companies, it raised the number of companies in the MDAX from 50 to 60. The change had no significant influence on Rheinmetall AG, which is listed in this sector.

The market capitalization is determined based on the free float of shares issued, measured at the respective share price. There are 43,558,850 Rheinmetall AG shares, 98.7% of which the stock exchange allocated to free float as of the end of the year. This resulted in a stock market value of relevance for the index calculation of €3.4 billion compared with €4.6 billion in the previous year. In the index rankings for the MDAX, Rheinmetall AG was occupied 23rd place in each case, compared with 16th in terms of market capitalization in the previous year.

In addition, Deutsche Börse takes account of the volume of shares traded and prepares a ranking of the order book turnover for this purpose. As of the end of the year, Rheinmetall's shares ranked the same, 23rd, as in the previous year. The underlying trading volume of the shares in relation to the previous twelve months amounted to €4.4 billion (previous year: €3.3 billion).

Ranking in the MDAX

	2018	2017
Number of shares	43,558,850	43,558,850
Free float of shares	98.7 %	98.4 %
Closing share price	€77.16	€105.85
Market capitalization	€3,400 million	€4,550 million
Ranking	23	16
Trading volume	€4,415 million	€3,339 million
Ranking	23	23

Source: Deutsche Börse Stock Reports December

At 179,304 shares, the average number of Rheinmetall AG shares traded via Deutsche Börse's Xetra system each day in 2018 was up on the level of the previous year (previous year: 155,749 shares).

Dividend distribution for fiscal 2018

Our dividend policy is earnings-oriented and designed to ensure that our shareholders receive an adequate share in the Group's profit on an ongoing basis. The dividend amount is based on business performance and a payout ratio geared towards Rheinmetall AG's business results. We take care to ensure that the dividend is widely accepted by shareholders and that it represents an attractive investment criterion, especially for investors geared towards long-term investment.

At the Annual General Meeting on May 28, 2019, the Executive Board and Supervisory Board will propose a dividend payment of €2.10 per entitled share (previous year: €1.70). The total distribution amount will therefore be €90 million (previous year: €73 million). Subject to approval by shareholders, the dividend will be paid on the following day. Based on the closing price of the shares for 2018 of €77.16 (previous year: €105.85), this corresponds to a dividend yield of 2.7% (previous year: 1.6%). The distribution ratio, i.e. the dividend in relation to earnings per share, will be around 30% for the year under review (previous year: 32%).

Letter to shareholders
Rheinmetall on the capital markets

Shareholder structure

At the end of 2018, an external service provider analyzed our shareholder structure – as had been done on a regular basis in previous years. The analysis was based on publications from investment companies and other institutional shareholders in addition to inquiries among investors. At 99% of all shareholders, the scope of the analysis once again reached a high level. The percentage of institutional investors increased from 73% in the previous year to 76%. The majority of this segment is based in Europe, with its share increasing by 8 percentage points to 46%. Shareholders who held over one million shares each came from Germany, the UK, France and Norway. Institutional investors from North America held 29% in Rheinmetall AG, 6 percentage points lower than at the end of 2017. A further 24% of shares (previous year: 27%) are held by private investors, Rheinmetall AG itself, other shareholders and investors who were not identified during the survey. The 50 largest institutional investors hold 70% (previous year: 64%) of shares.

Shareholder structure as of December 31 %

	2018	2017
1 Institutional investors	76	73
Europe	46	38
North America	29	35
Rest of world	1	0
2 Private shareholders	17	17
3 Rheinmetall Treasury Stocks	2	2
4 Other	4	6
5 Not identified	1	2

Treasury stock

The Annual General Meeting on May 10, 2016, authorized the Executive Board to acquire treasury shares. The Executive Board is thus authorized to acquire treasury bearer shares up to a maximum of 10% of the current share capital of €101,373,440 by May 9, 2021. At the end of the 2017 reporting period, the number of treasury shares was 679,709 or 1.6% of the share capital. The company withdrew 89,724 shares from this in fiscal 2018 (previous year: 98,101 shares) for the long-term incentive program (LTI) and 12,929 shares for the employee share purchase program. As the structure of the employee share purchase program was changed in March 2018, the figure for 2018 is not comparable with the previous year's figure (92,978 shares). The new system involves an individual monthly savings plan and provides for the allocation of shares after a defined holding period.

Once again, Rheinmetall AG did not exercise the aforementioned authorization to purchase treasury shares in fiscal 2018. The number of treasury shares was thus 577,056 shares or 1.3% of the share capital at the end of the 2018 reporting period.

Acquisition and use of treasury shares

	2018	2017
Acquisition of shares	–	–
Used for employee share purchase program	12,929	92,978
Used for long-term incentive program	89,724	98,101
Portfolio on December 31	577,056	679,709
Share of treasury stocks in Rheinmetall shares	1.3%	1.6%

Research coverage

Analyses and comments by national and international brokers are important tools in helping institutional and private investors to make decisions. Rheinmetall's coverage by these organizations is still at a high level and confirms the high level of interest shown by the capital market in our company. Two more major international brokers, Exane BNP Paribas and Société Générale, began covering Rheinmetall during the year.

21 equity research analysts (previous year: 20) published their analyses of the current development at the Rheinmetall Group and their assessments and recommendations regarding its shares at the end of 2018. 16 analysts gave Rheinmetall shares a "Buy" rating, while a further five analysts recommended holding the shares. No analyst recommended selling the shares at this date.

Investment recommendations for Rheinmetall shares as of December 31, 2018

Rating	Institution	Headquarters
Buy	Agency Partners	London
	Alpha-Value	London
	Bankhaus Lampe	Düsseldorf
	Bankhaus Metzler	Frankfurt am Main
	Bank of America Merill Lynch	London
	Berenberg	London
	Commerzbank	Frankfurt am Main
	Deutsche Bank	Frankfurt am Main
	DZ Bank	Frankfurt am Main
	Exane BNP Parisbas	Paris
	HSBC	Düsseldorf
	Kepler Cheuvreux	Frankfurt am Main
	LBBW	Stuttgart
	Société Générale	Frankfurt am Main
	UBS	Frankfurt am Main
	Warburg	Hamburg
Hold	CFRA (S&P Global)	London
	Independent Research	Frankfurt am Main
	MainFirst	Frankfurt am Main
	Oddo BHF	Frankfurt am Main
	Pareto Securities	Frankfurt am Main

Disclosures regarding the amount of the share of voting rights

The Federal Financial Supervisory Authority (BaFin) not only monitors the reporting thresholds for ownership of shares (section 21 WpHG), but also requests notification when financial and other instruments are acquired that entitle the holder to purchase shares (sections 25 and 25a WpHG). Rheinmetall AG notified the capital markets of this in accordance with section 26 WpHG and also informed the general public on its website.

Voting rights notifications in accordance with section 21 WpHG as of December 31, 2018

Shareholders	Total voting rights in %	Publication Rheinmetall
The Capital Group Companies Inc., Los Angeles, CA, USA	11.04	12 Dec. 2018
Janus Henderson Group plc, St. Helier, Jersey	3.03	24 Dec. 2018
Ministry of Finance/State of Norway, Oslo, Norway	3.06	30 Nov. 2018
BlackRock, Inc. Wilmington, DE, USA	4.99	9 Aug. 2018
Dimensional, Austin, TX, USA	3.01	22 Aug. 2018

Rheinmetall on the capital markets

Regular dialog with the capital market

The Executive Board and Investor Relations department maintain very close contact with the capital market. The aim is to create the right conditions for a fair assessment of the Rheinmetall share and enable investors to make a realistic estimate of the Rheinmetall Group's future development.

We held almost 300 meetings with investors and analysts during the period under review. A large proportion of these took place at a total of 16 investor conferences and roadshows. We focused on major financial centers in Europe, including Frankfurt am Main, London, Paris, Zurich, Madrid and Lisbon, and several cities in the US. Numerous individual meetings were also held during investor visits and telephone conferences. The investor relations team – in many cases with the direct involvement of the Executive Board – not only provided comprehensive information on the economic environment and the current business situation, but also discussed issues such as current trends, the potential of products and technologies, growth opportunities and risks and existing and future challenges for the Rheinmetall Group with national and international fund managers.

30 analysts and investors accepted the invitation to the Capital Markets Day in Berlin in November 2018. At this event, which was held at a plant of the Mechatronics division, the Executive Board presented the strategy of the Group and the corporate sectors. It also provided an overview of operational business and development on the markets. We have published the documents used for the presentations on the Investor Relations page of our website.

Following the press release on the provisional business figures on March 1, 2018, the Executive Board presented the single-entity financial statements for 2017 at the accounts and analyst conference on March 15, 2018. It also reported on the results for the first three quarters of the year in telephone conferences and was available to answer questions. The presentation documents and minutes of these meetings were made available on the Rheinmetall AG website. The Annual General Meeting was an important platform for dialog with private investors.

Our Investor Relations website provides an overview of capital market expectations for the Rheinmetall Group's key figures. The assessments issued by financial analysts regarding the future performance of our company are collated by an external service provider to form a consensus that is updated at regular intervals. These tables also document our close and trusting collaboration with equity analysts who monitor Rheinmetall AG on an ongoing basis and with in-depth expertise.

Money and capital market financing

Little use was made in 2018 of the commercial paper program that has been in place since 2002, which is currently worth €500 million, either with regard to the number of securities issued or with regard to the volume. Extremely attractive conditions were achieved throughout. There was no commercial paper outstanding at the end of 2018.

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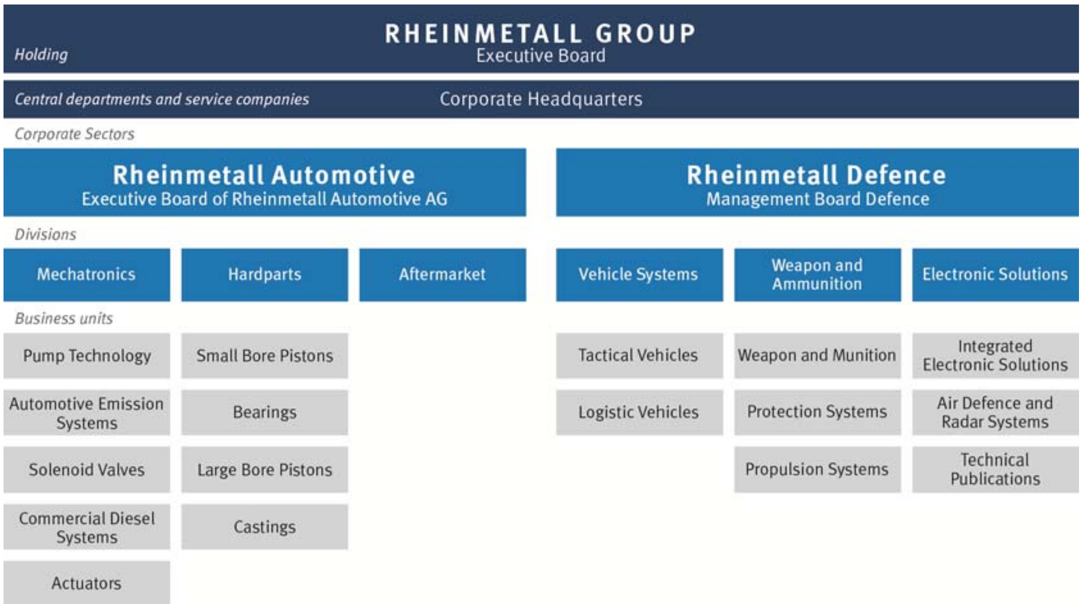
COMBINED MANAGEMENT REPORT

Basic information on the Rheinmetall Group
Corporate structure

Structure of the Rheinmetall Group

Rheinmetall Aktiengesellschaft (Rheinmetall AG), which is a listed stock corporation with its head office in Düsseldorf, is entered in the commercial register of the District Court of Düsseldorf under the number HRB 39401 and is the parent company of the Rheinmetall Group. The Articles of Association of the company were last amended May 8, 2018. The purpose of the company is to establish companies, to acquire and sell equity investments and rights similar to equity investments in companies concerned with mechanical engineering, the processing of metals and other materials, industrial electronics and related industries, to manage such companies and where appropriate to aggregate them under common management, as well as to acquire, sell, develop, use and manage land and buildings, including where this is not connected to the aforementioned companies.

Rheinmetall AG's corporate structure



As of December 31, 2018

Our market and customer-oriented approach is an important factor in our success. Lasting relationships with our customers have formed the basis of our business activities in the Automotive and Defence sectors for over a century. Our activities in the business areas of environmentally friendly mobility and threat-appropriate security are consistently aligned towards the three largest economic regions of Europe, the US and Asia. In the year under review, we concluded sales with customers in 144 countries. We are represented at 41 locations in Germany, a further 40 in Europe (excluding Germany), 13 on the American continent, 17 in Asia, six in Africa and three in Australia.

The business activities of the companies in the Rheinmetall Group have a strong international focus. In 2018, the international share of sales was around 72.3%. We now employ 12,624 staff abroad (previous year: 11,928 employees), which represents 50.6% of our total workforce (previous year: 50.3%).

Rheinmetall AG has direct or indirect holdings in 189 companies in Germany and abroad (previous year: 186) that are part of the Rheinmetall Group. A total of 151 companies (previous year: 149) are fully consolidated in the consolidated financial statements. 38 companies are carried at equity (previous year: 37). The consolidated group is presented in the notes to the consolidated financial statements on pages 200 to 204.

Basic information on the Rheinmetall Group
Corporate management and control

Corporate management and control

The Executive Board of Rheinmetall Aktiengesellschaft, which has consisted of four members since January 1, 2017, is the governing body of the Rheinmetall Group. The Executive Board is responsible for the Group's strategic orientation and development and for setting and monitoring corporate targets. Moreover, it is responsible for the introduction and further development of adequate management, control and monitoring processes, including the risk management system, internal control system, internal auditing and compliance management system and the allocation of resources.

The clearly defined core business areas of Automotive and Defence are equipped with all the necessary functions as independent sectors that operate in line with the strategies, targets and guidelines determined by the Executive Board of the Group, each with responsibility for their global business operations and their own management. The division heads report to the members of the sectors' executive boards on current business performance in regular review and strategy meetings and discuss operational and economic measures in addition to strategies and targets with them. The respective management bodies of the subsidiaries are responsible for operational management of their units. They are supported in their tasks by the service and support functions that have been set up within the management holding company.

The Supervisory Board, which consists of 16 members and is based on joint representation in accordance with the provisions of the 1976 German Codetermination Act, appoints, advises and monitors the Executive Board. The Executive and Supervisory Boards work together closely, constructively and in an atmosphere of trust, with the aim of ensuring the continued existence of the company and creating sustainable value added.

Rules of procedure are in place for both boards, containing regulations on the composition, tasks, responsibilities and areas subject to approval. Further details can be found in the corporate governance report starting on page 116.

In the Rheinmetall Group, the Automotive and Defence sectors are controlled and the economic success of the operational entities is assessed using the key performance indicators of sales, operating result (EBIT before special items), EBIT and EBT. Profitability is also assessed for management purposes on the basis of ROCE calculated on an annual basis, which represents the ratio of EBIT to average capital employed (average of values as of January 1 and December 31 of the year under review). Operating free cash flow is included in target agreements with managers as an additional control and management indicator.

Central management indicators

		2018	2017
Sales	€ million	6,148	5,896
Operating result	€ million	492	400
EBIT	€ million	518	385
EBT	€ million	485	346
Return on capital employed (ROCE) [1]	in %	17.1	13.8
Operating free cash flow	€ million	(35)	276

[1] Previous year's figure adjusted on account of the change to property valuations. The values as of January 1, 2018 following adjustments based on IFRS 9, IFRS 15 and IFRS 16 were taken into account for the calculation of the average capital employed for 2018.

In addition, the volume of capital expenditure, research and development expenditure and the headcount (FTEs) represent further indicators that are relevant to management. Further details are provided in the non-financial statement on pages 101 et seq.

Basic information on the Rheinmetall Group
Business model

Rheinmetall Group

Rheinmetall is an international group for leading technologies in the mobility and security segments. Urbanization, demographic change, migration flows, globalization, climate change and the increasing frequency and intensity of conflicts and military disputes mean that efforts to improve mobility and security are constantly increasing. With its two sectors, Automotive and Defence, Rheinmetall fulfills these basic key needs of modern society.

Operating activities of Rheinmetall Automotive

The Automotive sector with the management company Rheinmetall Automotive AG is one of the world's major automotive suppliers, particularly in the areas of air management, emissions reduction and pumps and in the development, production and supply of replacement parts for pistons, engine blocks and plain bearings. The core areas of expertise of companies in the Automotive sector lie in the reduction of emissions, pollutants and consumption, cooling and thermal management, downsizing and reduction of weight and friction in relation to combustion engines. This applies not only to passenger cars, but equally also to light- and heavy-duty commercial vehicles, off-road vehicles and large engines. Rheinmetall Automotive also works intensively on drives for the electric and hybrid vehicles of the future. Rheinmetall Automotive holds a tier 1 position in the value-added chain of automotive production, i.e. we supply most automotive manufacturers (OEM – original equipment manufacturers) directly and not via other suppliers or system integrators.

Corporate sector	Division	Areas of activity
Automotive	Mechatronics	Cutting emissions Actuators Solenoid valves Water, oil and vacuum pumps
	Hardparts	Pistons Engine blocks, structural components and cylinder heads Plain bearings and bushes
	Aftermarket	Global replacement parts business

Markets of Rheinmetall Automotive

Rheinmetall Automotive's business performance is largely determined by the development of our international customers' production and sales figures. This applies to existing customer contracts on the one hand, as well as to future projects relating to our customers' technological requirements on the other. Ongoing strong trends towards more efficient use of fuels, reductions in emissions and alternative drive technologies are having a particularly strong impact.

Sales in the Mechatronics and Hardparts divisions are defined by business-to-business transactions. The divisions have a relatively low number of internationally operating automotive manufacturers as potential customers. The customer structure is nevertheless diversified, which is also the case from a regional perspective. With production sites in the key economic areas of Western Europe, USMCA (formerly NAFTA) and Asia, the divisions are able to meet customer requirements for local or international production.

According to IHS Markit (February 2019), China was the world's biggest passenger car market once again in 2018, with around 27 million units produced. Rheinmetall Automotive has a presence in this market with a regional holding company as well as joint ventures with a major Chinese partner and wholly owned subsidiaries.

Business-to-business transactions also dominate our relationships with buyers of products from the Aftermarket division. Various distribution channels are used for this. These include websites, call centers and catalogs, as well as training for mechanics. In addition to passing on technical expertise with the aim of strengthening customer loyalty, these further training courses also allow the Aftermarket division to position itself as a provider of customized repair solutions.

The debate about the future of diesel technology for use in passenger car engines in the light of problematic nitrous gas emissions is not yet over, even if the proportion of new passenger car registrations with a diesel engine in Germany had stabilized at around 32% by the end of 2018, having previously been as high as 48%. The first legal restriction on the entry of diesel vehicles with the emission class Euro 4 or lower came into effect in Stuttgart on January 1, 2019. Other German cities are set to follow suit. If the driving bans on diesel cars up to Euro 4 do not achieve the desired result, an extension to emission class Euro 5 is possible, which in some circumstances would cause further uncertainty among new car customers. In addition, some cities in the “C40 Cities” group have announced restrictions on vehicles with diesel drives by 2025. These include Paris and Rome as well as Mexico City, Athens and Madrid.

The automotive industry faces far-reaching changes, including alternative drive system concepts in addition to networked and automated driving. The departure from exclusive use of the combustion engine as a drive system is particularly relevant for today's established suppliers in the area of drive trains. The introduction of partially or fully electric drives is causing the requirements that automotive manufacturers place on their suppliers to change in terms of expertise and technology. Yet although the supply of hybrid vehicles in particular is increasing, the absolute market volume remains low. The European Automobile Manufacturers’ Association (ACEA) counted 301,847 units for newly registered vehicles with alternative drives in the European Union in 2018, which equates to 2.0% of the total number of new registrations. Major European automotive manufacturers in particular have announced a large number of new plug-in hybrid models for 2019 and 2020. The combustion engine will nevertheless remain the main drive system for the transportation of passengers and goods by road for the foreseeable future.

In the “7th Global Top Automotive Suppliers 2017” study published by Berylls Strategy Advisors in June 2018, Rheinmetall Automotive was ranked 91st based on sales in fiscal 2017, after taking 94th place in the 2017 study based on sales in 2016.

Regulatory environment of Rheinmetall Automotive

Mobility in its current form is dominated by combustion drive systems. The burning of fossil fuels is inextricably linked to emissions of substances that are harmful to health and the environment. In metropolitan areas in particular, traffic is repeatedly leading to severe impairment of air quality. To reduce the negative impact on citizens’ health from traffic-related exhaust gases and cut greenhouse gas emissions, legislators in many countries are issuing limits for passenger cars and for light and heavy-duty commercial vehicles. The focus here is on emissions of hydrocarbons (HC), nitrous gases (NO_X), carbon monoxide (CO), carbon dioxide (CO_2) and particulate matter (PM) caused by road traffic.

An upper limit of an average of 130 g CO_2/km has applied to new car fleets in Europe since 2015 for emissions of the greenhouse gas carbon dioxide (CO_2). In the medium term, the European Commission has adopted a target of 95 g CO_2/km by 2021.

Basic information on the Rheinmetall Group
Business model

In accordance with the agreement reached between EU institutions, CO_2 emissions per kilometer are to be cut by a further 37.5% by 2030. Based on the limit for 2021 in line with the New European Driving Cycle (NEDC), this results in maximum permissible CO_2 emissions of around 59 g/km.

The maximum limit for light-duty commercial vehicles in Europe was set at 175 g CO_2/km for 2017. This limit will be reduced by 16% to 147 g CO_2/km by 2020. The agreement signed by the EU institutions in December 2018 will require a further reduction of 31% by 2030. Based on the limit for 2020 calculated in line with the NEDC procedure, this results in a maximum limit for CO_2 emissions of around 101 g/km.

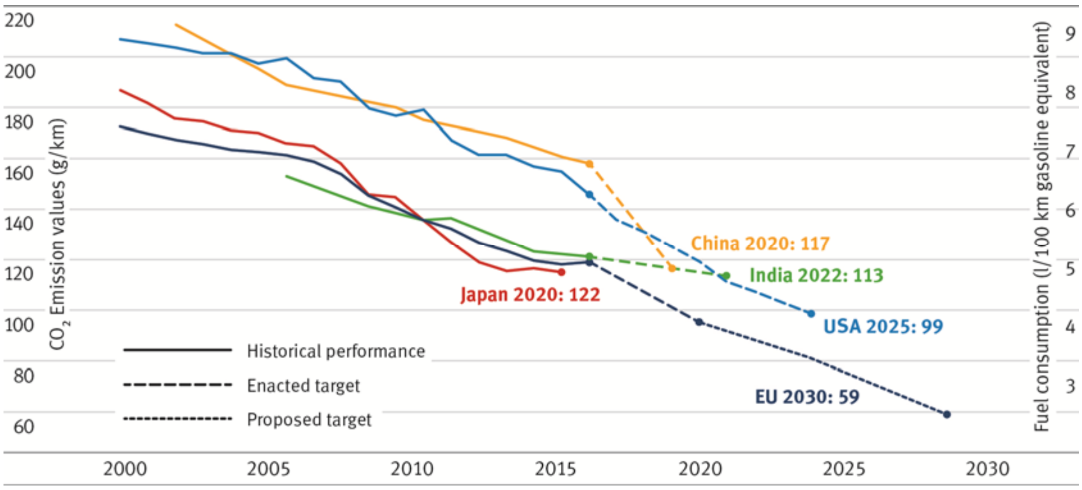
Non-compliance with the CO_2 fleet values will lead to substantial financial penalties for manufacturers. Failure to meet the limits will be penalized with gradually increasing fines per excess gram. Up to the end of the year under review, €5 had to be paid for the first gram for every car sold; this then increased to €15 for the second gram, €25 for the third gram and €95 per gram from the fourth gram upwards. From 2019 on, the fine amounts to €95 per excess gram, starting from the first gram exceeding the limit. According to information available from the International Council on Clean Transportation (ICCT), average CO_2 emissions of passenger cars sold in the EU in 2017 increased for the first time since 2001. Average CO_2 emissions came to around 119 g CO_2/km, a slight increase of 1 g/km year-on-year.

Since September 1, 2017, the new worldwide harmonized light vehicles test procedure (WLTP) has been used to provide proof of compliance with the Euro 6 standard required for type approval in Europe. The corresponding standard is referred to as Euro 6c, retaining the limits used for Euro 6. As a successor to the New European Driving Cycle (NEDC), the WLTP is expected to lead to more realistic figures for consumption based on more precise and more up-to-date test conditions. Since September 1, 2018, proof of exhaust gas and consumption data in accordance with WLTP has been compulsory for all new registrations of passenger cars and light-duty commercial vehicles, which has led to delays in approvals, partly owing to increased documentation requirements and bottlenecks in capacity at test facilities.

In addition to testing in a laboratory with the new WLTP driving cycle, the EU has made a supplementary “real driving emissions test” (RDE) mandatory in order to test real use on the road. Proof of fulfillment of emissions targets in accordance with Euro 6 has had to be provided for new vehicle models since September 2017 and will be required for all new registrations two years later, starting in September 2019. The corresponding standard is referred to as Euro 6d to ensure a clearer distinction, with the limits under Euro 6 being maintained. With regard to emissions of nitrous gases (NO_X), which are particularly problematic with diesel vehicles, the European Commission has allowed the limit to be exceeded 2.1 times over until 2019 (Euro 6d-TEMP) and 1.5 times over thereafter (Euro 6d). However, the European Court of Justice (ECJ) ruled at the end of 2018 that these “conformity factors” were not permissible, as it did not consider that the Commission had the authority to amend the Euro 6 emissions limits for the new tests during practical driving operation. The ECJ nevertheless says that an appeal may be lodged.

In international terms, the EU has in the past assumed a pioneering role with respect to the limits on CO_2 emissions. Some large countries have followed the EU’s example and have adopted limits equivalent to the EU target of 95 g CO_2/km. They include the US and Canada, each with 99 g CO_2/km from 2025, as well as South Korea with 97 g CO_2/km from as early as 2020. China has set a limit of 117 g CO_2/km from 2020 on.

Development of limits for CO_2 emissions in selected regions/countries g/km



Source: The International Council on Clean Transportation: Policy update, CO_2 emission standards for passenger cars and light-commercial vehicles in the European Union, January 2019

The Euro standards are being adapted by many countries worldwide and introduced simultaneously or with a time delay. Some countries, primarily the US and Japan, are issuing their own limits on emissions of pollutants. Standards around the world for reducing emissions of harmful substances will therefore gradually continue to become more stringent in the future.

Operating activities of Rheinmetall Defence

The Defence sector of the Rheinmetall Group is among the defence and security industry's leading providers of innovative products for the German and international armed and security forces. Rheinmetall Defence provides system and subsystem solutions as well as a broad portfolio of services for capabilities in the areas of mobility, reconnaissance, command and control, C4i and protection. It also offers customized training and simulation solutions.

As a leading European systems supplier for armed forces technology, Rheinmetall Defence has many years of experience and innovation in armored vehicles, weapons and ammunition and in the areas of air defence and electronics – including serving the requirements of the navy and air force and for internal security. Whether for requirements specific to different branches of the armed forces or overall requirements, whether for external or internal security, the sector has a wide product portfolio of platforms and components, which are offered as individual and connected system solutions. This makes Rheinmetall Defence a strong and reliable partner to the German armed forces, their allies and friendly armies, along with civil national security forces.

All development, production and service activities are geared towards ensuring the best possible protection for soldiers on deployment. Rheinmetall Defence continuously sets new technological standards here: from vehicle, protection and weapon systems, through infantry equipment and air defence, to the networking of function sequences, electro-optics and simulation.

Basic information on the Rheinmetall Group
Business model

Corporate sector	Division	Areas of activity
Defence	Vehicle systems	Armored tracked vehicles CBRN protection systems Turret systems Wheeled logistics vehicles Wheeled tactical vehicles
	Weapon and Ammunition	Large- and medium-caliber weapons and ammunition Weapon stations Protection systems Propellants and powder
	Electronic Solutions	Air defence systems Soldier systems Command, control and reconnaissance systems Fire control systems Sensors Simulation for the army, air force, navy and Civil applications

Markets of Rheinmetall Defence

The world of the 21st century occasionally faces very tense security situations as well as complex and new threats.

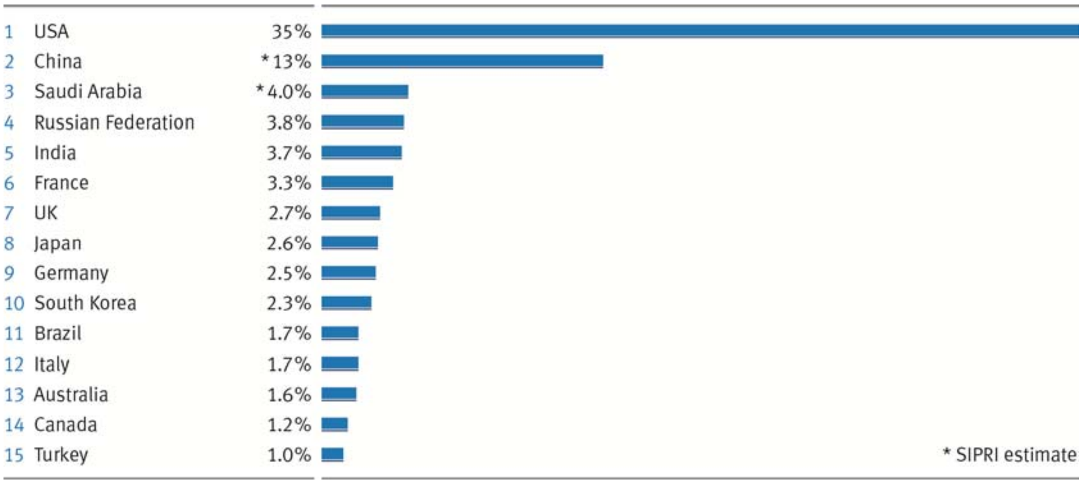
Blurred boundaries between peace and war, military interventions, latent trouble spots, the outbreak of new conflicts, uncontrolled and irregular migration flows on an unprecedented scale and the consequences of the collapse of state structures in countries in geopolitically sensitive regions call for new answers to the significantly heightened challenges and constant risks associated with external and internal security and new and/or extended and powerful capabilities for international efforts to maintain stability, security and peace.

The range of products and capabilities of Rheinmetall Defence is tailored to central defence technology requirements that result nationally and internationally from many armed forces' substantial ongoing need for technical modernization and replacements on the one hand and from new military deployment scenarios requiring armies to have an increased ability to react and to take action as well as increased readiness for duty and deployability, for example in order to ensure the security of allies or engage in international peace-keeping missions, on the other.

The market potential for Rheinmetall Defence comes mainly from the defence budgets of customer nations. Rheinmetall Defence is still in an international growth market in the medium term, even though national defence budgets fluctuate to varying degrees, depending on the security situation.

The overall trend towards increased spending is due in part to complex existing and new geostrategic challenges in terms of security and defence policy, the continuing significant need for modernization in the armed forces of many emerging and developing countries, demand for new military applications, calls to increase governments' resilience to internal and external threats and ability to take military action and the need to guarantee stable and secure supplies in periods of peace and war, which are resulting in additional investment in equipment and materials.

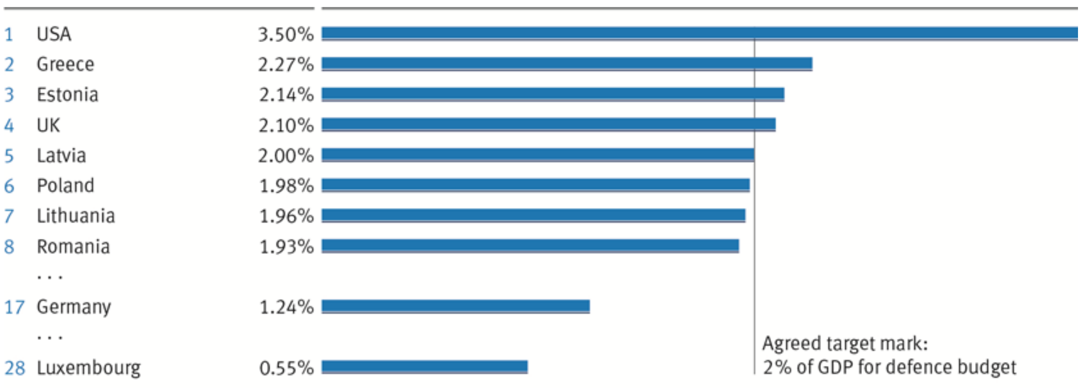
Share of the 15 countries with the highest defence spending in worldwide defence spending in 2017



Source: Trends in World Military Expenditure 2017, SIPRI Fact Sheet, May 2018

At the conference of the North Atlantic Council in Brussels in July 2018, the heads of government of the 29 member states of NATO reiterated the resolution adopted at the summit in Wales in September 2014, whereby each NATO member state (with the exception of Iceland, which does not have any armed forces) will spend at least 2% of gross domestic product on defence by 2024, with 20% of this sum being invested in new armaments and research projects. This target could create additional opportunities for Rheinmetall Defence, particularly with respect to procurement projects in the European and German market. The defence budget has increased continuously over the last few years from €32.4 billion in 2014 to €36.9 billion in 2017, €38.9 billion in 2018 and €43.2 billion in 2019, primarily in order to clear existing investment bottlenecks, improve the German armed forces' material equipment and maintain and further develop military capability. Furthermore, it is the German government's stated aim to further increase the defence budget to around 1.5% of gross domestic product by 2024.

Defence spending of selected NATO member states as a proportion of gross domestic product in 2018



Source: NATO press release, July 2018 | Excluding Iceland, which has no armed forces | Forecast

We will also continue with the internationalization of Rheinmetall Defence, which has been successfully pursued for years. The sector's strategic priority still lies in expanding its local presence in promising growth regions. We continue to see particular potential in Asia and Australia, as well as in the Western and Eastern European markets. In fiscal 2018, we achieved 47% of Defence sales with customers outside Europe. In the global ranking of the Stockholm International Peace Research Institute (SIPRI) from December 2018, Rheinmetall Defence was in 25th place based on 2017 sales, which was unchanged year-on-year.

Basic information on the Rheinmetall Group
Business model

Regulatory environment of Rheinmetall Defence

German military equipment exports are governed by the *Grundgesetz* (GG – German Basic Law), the *Gesetz über die Kontrolle von Kriegswaffen* (KrWaffKontrG – German War Weapons Control Act) and the *Außenwirtschaftsgesetz* (AWG – Foreign German Trade and Payments Act) in conjunction with the *Außenwirtschaftsverordnung* (AWV – German Foreign Trade and Payments Regulation).

The "Political Principles Adopted by the Government of the Federal Republic of Germany for the Export of War Weapons and Other Military Equipment" of January 19, 2000, and the Council Common Position of the EU defining common rules governing control of exports of military technology and equipment of December 8, 2008, provide the licensing authorities with guidelines.

Legal regulations on exports of military equipment – The Federal Republic of Germany has one of the strictest export control systems in the world. These strict rules apply in particular to companies in the security and defence industry.

Export law makes a distinction between the following types of goods, which should be understood to refer not only to products, but also to technology and software:

- Purely civilian goods
- Goods with two intended uses
  (known as dual-use goods, which can be used for both civil and military purposes)
- Military equipment

Purely civilian goods are not generally subject to any export restrictions. With a few exceptions, they can be exported without requiring a license.

The export of dual-use goods has been harmonized at the level of the European Union since 1995. Council Regulation (EC) No 428/2009 of May 5, 2009, "setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items" (OJ of May 29, 2009, L 134, p. 1) applies here. A "common list of "items" lists all dual-use items that are subject to uniform control regulations in all EU countries. The transfer of these goods within the EU is free, apart from a few exceptions.

However, with respect to classic military equipment, there are essentially no harmonized regulations within the EU. There is a "Common Military List" for the EU, which more or less matches the corresponding lists of EU member states. However, there are no common legal regulations on exports of military equipment. This is linked to the Treaty on European Union (TEU). According to Article 346 TEU, all member states can "take measures they consider necessary for the protection of their essential security interests". In particular, decisions on "the production of or trade in arms, munitions and war materials" are up to the respective national lawmakers. Although there are signs of efforts to harmonize regulations in the "Common Foreign and Security Policy", these have not yet been implemented on a large scale within the EU. For this reason, exports of military equipment to other EU countries continue to require a license.

German regulations on military equipment – With regard to defence equipment, the Federal Republic of Germany distinguishes between war weapons and other types of military equipment.

Regulations on war weapons – The War Weapons Control Act (KrWaffKontrG) lays down particularly strict rules. These are based on Article 26(2) of the Basic Law. This states that the manufacture, transportation and marketing of war weapons requires a license from the German government.

An annex to the KrWaffKontrG, the War Weapons List, lists all items that are definitively regarded as war weapons. War weapons include not only devices such as battle tanks, armored combat support vehicles and machine guns, but also certain types of ammunition such as tank or artillery ammunition. As well as complete devices and ammunition systems, certain assemblies and components such as the turret and chassis of a battle tank or the projectile, warhead or fuse for certain types of ammunition are additionally defined as war weapons.

The KrWaffKontrG includes an extensive licensing system for war weapons. Almost every activity relating to these goods requires a license. A license is required for the production of war weapons, both during development and in series production. Transfer of the actual control over war weapons also requires a license, as does the purchasing of these weapons. The transportation of war weapons within a country is also subject to licensing. Above all, the importing, exporting and transit of war weapons requires a license. Two licenses are actually necessary for exporting war weapons, one license in accordance with the KrWaffKontrG and one export license in accordance with the Foreign Trade and Payments Act (AWG)/Foreign Trade and Payments Regulation (AWV). Moreover, the transportation of war weapons using German ships or aircraft outside German territory requires a license. Trading and brokerage transactions involving war weapons that are not intended to affect German territory are also subject to licensing.

Dealings in war weapons are strictly controlled. Each individual movement of war weapons must be entered in the “War Weapons Book”, which must be submitted to the supervisory authority, the Federal Office of Economics and Export Control (BAFA), for checking on a half-yearly basis. In addition, the BAFA conducts an external on-site audit every two years of each company that keeps war weapons, in which it checks not only whether inventories match the entries in the War Weapons Book, but also whether a corresponding receipt is available for each entry.

Regulations on other military equipment – Other types of military equipment are listed in Part I Section A of the Export List, an annex to the AWV. In particular, the export of these goods requires a license. Licenses are also needed for certain types of services and technical support and for some trading and brokerage transactions. It is generally possible to import other types of military equipment without a license.

Decision of the German government on exports of military equipment – The German government makes decisions on exports of military equipment based on its “Political Principles for the Export of War Weapons and Other Military Equipment”. A key component of these principles is the “European Union’s Code of Conduct for Exports of Weapons”. This contains eight test criteria (e.g. observance of human rights, internal situation, compliance with international obligations in the country of receipt) and operational regulations that apply to decisions on which countries military equipment may be exported to.

Basic information on the Rheinmetall Group
Strategy

Profitable growth still at the heart of strategic development

We are constantly refining our strategy and adapting it to changing framework conditions. Our strategic development essentially remains focused on profitable growth, which has distinguished the Rheinmetall Group in the past. As an international technology group for mobility and security, we have sufficient potential for organic growth in our two corporate sectors, Automotive and Defence.

In the Automotive sector, these growth opportunities derive on the one hand from the ongoing tightening of regulatory conditions worldwide, which will lead to ever lower emissions limits for conventional combustion engines, and on the other hand from additional long-term opportunities arising from the electrification of vehicles. Growth potential in the Defence sector comes from the trend reversal that is currently taking place in the development of defence spending, which in many countries is linked to new and additional equipment initiatives. Both sectors also have good growth prospects thanks to innovations in the product portfolio that have been initiated in recent years at considerable expense.

Central technology clusters identified

In the medium to long term, our company's growth is to be based much more heavily on an intensive transfer of technology between the two sectors, Automotive and Defence, than has been the case up to now. Last year, we identified the technology clusters that are most important to us in this regard, in which we have knowledge, experience and engineering capacity in both sectors and at various sites. These include automation, digitalization and artificial intelligence, as well as electromobility and sensor technology. In the future, we want to combine this technological expertise systematically and in a controlled exchange, with the aim of speeding up our innovation processes and creating new products or new product generations in the long term. With this approach, we hope to better fulfill our ambition of acting as an integrated industrial corporation, strengthen the Group's competitiveness and make an important contribution to laying the foundations for our future growth.

The trend towards increased mobility continues

Major technological changes are set to occur in the Automotive sector over the next few years, with new mobility concepts becoming increasingly important. Along with alternative drive systems, which will expand with growing momentum, at least in certain urbanized areas, these radical changes will generally be reflected in increasing digitalization and autonomous driving. Irrespective of these developments, however, the trend towards increased mobility is continuing. This is associated with a further rise in global automotive production. Based on production of 94.2 million vehicles (up to 6.0 t) in 2018, experts at IHS Markit currently expect the number of vehicles manufactured worldwide to increase by around 15% to 108.6 million by 2025.

For our Automotive sector, which is present on all the world's major automotive markets – Europe, North and South America, Japan, China and India – with its own manufacturing facilities and with development expertise, the unabated expansion of global automotive production implies good growth prospects. As in previous years, we wish to share in the forecast expansion of automotive production. Our target remains annual sales growth that is slightly above the growth rates for automotive production.

Taking into account our joint ventures in China, we currently generate around 39% of sales at Rheinmetall Automotive outside Europe. We want to systematically expand this share. This applies in particular to the Mechatronics division, where we are continually expanding the business activities on the Chinese market in particular.

In addition to sales growth driven purely by the number of units, Rheinmetall Automotive is also benefiting from worldwide regulations on fuel consumption (CO_2 reduction) and the emission of pollutants. With our products, we make a significant contribution towards the fulfillment of these legal requirements, which are constantly being tightened. This means that the number, complexity and value of our components that are installed per vehicle are set to increase further.

In this context, and given that alternative drive systems will only gradually begin to gain acceptance, we expect the need for continuous optimization of conventional combustion engines to continue for many years to come. We are taking this into account in full with the further development and improvement of all our products relating to the drive train. We are also anticipating a growing trend towards hybridization in the coming years, i.e. towards a combination of conventional and electric drives in one vehicle. Pure electromobility will also become increasingly widespread, driven in particular by China. We have expanded our product portfolio step by step over the last few years in terms of both hybrid technology and fully electric drive systems. Together with our joint ventures, we have now received orders worth around €850 million for both types of drive systems combined.

In the medium term, the Automotive sector's research and development strategy is geared towards the optimization of risk. That means that on the product side, we want to gradually reduce our dependence on certain types of drives (drive neutrality) and allocate our development activities and research and development funding accordingly. In addition, we will continue to move into products for non-engine applications, such as structural components, or components that are not related to conventional passenger car applications. We presented a wide range of products for trucks at the IAA international automotive exhibition for commercial vehicles in Hanover in fiscal 2018. We are already generating annual sales of around €400 million in this segment, and this figure is rising.

A definite trend reversal in global defence spending

Changes in the geostrategic power structure and developments in the international security situation, in some cases linked to new and previously unknown threats, have further intensified the trend reversal towards an increase in global defence expenditure in recent months. More and more countries are prepared to invest more in their own security again and to modernize their armed forces. A definite reversal is thus becoming apparent in the previous trend towards lower defence spending and smaller armed forces, a quarter of a century after the end of the Cold War. International defence markets are at the beginning of a sustained, long-term cycle that will be characterized by rising budgets and new purchases. Our Defence sector is set to benefit from this in the coming years.

Basic information on the Rheinmetall Group
Strategy

The objective postulated by NATO member states to bring national defence budgets up to the level of 2% of their respective gross domestic product by 2024 and to invest 20% of total spending in equipment will create new market potential. In addition, the conflict in Crimea and Ukraine is causing NATO to refocus on the necessities and responsibilities of defending alliances. This defence of alliances in some cases requires different equipment for armed forces than that needed for stabilization missions abroad, which has boosted the political will to modernize and expand the armed forces in many countries in the western defensive alliance. That also applies to Germany, where the defence budget is expected to rise from €39 billion in 2018 to around €44 billion in 2020 and subsequent years. Further budget increases are planned in the medium to long term, and the German government has in the meantime announced that it is aiming for a target of 1.5% – in terms of gross domestic product – for the national defence budget in the coming years up to 2024. From today's perspective, that would involve an increase in the budget to about €60 billion.

This development is being driven by the German armed forces' responsibility as the lead nation in NATO's Very High Readiness Joint Task Force for protection of the eastern border within the alliance. This will lead to increased demand for new and additional systems for land forces in particular over the next few years. The portion of sales generated in Germany will therefore increase again significantly, with further growth in the overall business volume of Rheinmetall Defence.

The joint project agreed between the German and French governments to develop a new battle tank (Main Ground Combat System), in which Germany will play the leading role from a military and industrial viewpoint, is of particular strategic importance to Rheinmetall. Rheinmetall, along with Krauss-Maffei Wegmann (KMW, Germany) and Nexter (France), has been asked to develop and present realization concepts. As this project is the most comprehensive to date in the European land systems industry, it could turn out to be a possible starting point for further consolidation in the sector in Europe. In this context, we announced in November 2018 that we are in talks with Wegmann Unternehmens-Holding about possible transactions or cooperation and that the results of the talks are still open. We also announced a joint venture with BAE Systems in the UK in January 2019, in which Rheinmetall will hold a majority stake of 55%.

As well as our focus on the German and European market, we will consistently continue our internationalization strategy. In the year under review, we established two new centrally managed marketing units, or "hubs", in the US and Singapore for the South-East Asian market, which will manage and coordinate all our Defence activities in these markets.

Following the successful acquisition of two more large-volume orders for vehicles from the Australian armed forces, we are developing this continent into a "domestic market" with close, long-lasting customer relationships. We are currently in the process of setting up a center of expertise there for military vehicles, which, in addition to development capacity, will also include production and service capacity. In the long term, it may also serve as a base for exporting vehicle systems.

In general, we are continuing on our path that began with vehicles and are moving towards the expansion of our systems business, with the aim of increasing the number of platforms and systems we have in the international armed forces, in order to generate follow-up business with modernization and service over the coming decades.

Economic report
Executive Board statement on the general economic situation

In fiscal 2018, consolidated sales rose by €252 million or 4.3% year-on-year from €5,896 million to €6,148 million. Both the Automotive and Defence sectors posted rising sales and achieved improvements in operating earnings.

Rheinmetall Group – actual vs. forecast business performance in 2018

	2018	Forecast Q3/2018	Forecast Q2/2018	Forecast Q1/2018	Forecast 2018	2017
		November 2018	August 2018	Mai 2018	März 2018	
		Sales growth compared to last year				
Sales	€6.1 billion	up around 5 %	up around 8 %	up 8–9 %	up 8-9 %	€5.9 billion
Operating result	8.0 %	above 7 %	around 7 %	around 7 %	around 7 %	6.8 %

Following consolidated sales of €5.9 billion in fiscal year 2017, we forecast organic sales growth of between 8% and 9% for the Rheinmetall Group in the year under review on February 28, 2018, whereby we assumed an increase in sales for Rheinmetall Automotive of between 3% and 4% and growth in sales for Rheinmetall Defence of 12% to 14%. At that time, we planned to achieve an operating margin of approximately 7% for the Group, with a figure of around 8.5% for Rheinmetall Automotive and a margin of between 6.0% and 6.5% for Rheinmetall Defence.

In our half-yearly reporting, we once again forecast an increase in sales for the Automotive sector of 3% to 4% at the end of the year, while the target for the Defence sector was adjusted to 12% sales growth, at the lower end of the original sales forecast. The previous outlook for the Rheinmetall Group's operating earnings in 2018 was confirmed at around 7%. The earnings forecast of around 8.5% for Rheinmetall Automotive was confirmed in the financial report for the first half of 2018. We predicted an operating margin of about 6.5% for Rheinmetall Defence, which was at the upper end of the previously forecast range of between 6.0% and 6.5%.

In the first nine months of 2018 we recorded sales of €4,164 million, a similar level to the same period of the previous year (€4,174 million). Operating earnings were up €21 million at the end of the third quarter of 2018 at €252 million, compared with €231 million in the same period of the previous year. Based on expert forecasts for the development of global automotive production, which, contrary to previous estimates of 2.1%, now assumed reduced growth of only 1.4%, we adjusted our expected sales growth for the Automotive sector in 2018 to between 2% and 3%, instead of 3% to 4% previously. For the Defence sector, we lowered our growth forecast for sales in 2018 from 12% to between 6% and 7%, based on performance in the first three quarters and taking into account in particular the impact of suspended or outstanding export licenses and expected loss of sales owing to a tragic explosion at a South African production site. For Rheinmetall Automotive, the forecast for the operating margin that was announced in the semi-annual result in August 2018 was raised to slightly over 8.5%. We now anticipated a further improvement in earnings in the Defence sector in 2018 and assumed an operating margin of just over 7%, exceeding the previously forecast range of between 6.0% and 6.5%. Taking into account holding costs and including expenses in the mid-single-digit millions for the realization and marketing of new technologies, the Rheinmetall Group's expected margin for the fiscal year came to over 7.0%.

Operating segments – actual vs. forecast business performance in 2018

	Sales				Operating result		
	2018	Forecast March 2018	Actual 2018 vs. actual 2017	2017	2018	Forecast March 2018	2017
Automotive	€2,930 million	up 3 % – 4 %	up 2.4 %	€2,861 million	8.9%	around 8.5 %	8.7%
Defence	€3,221 million	up 12 % – 14 %	up 6.1 %	€3,036 million	7.9%	6.0 – 6.5 %	5.7%

Economic report
General economic conditions

Growth in the global economy slows slightly

Growth in the global economy slowed in 2018. Global economic output grew by 3.7%, 0.1 percentage points less than in 2017. Experts at the International Monetary Fund (IMF) came to this assessment in their "World Economic Outlook Update" from January 2019. This slight cooling of the economy was due in particular to the fact that economic expansion in parts of Europe and Asia was slightly lower than expected. "A global recession certainly isn't around the corner," Christine Lagarde, head of the IMF, said on the periphery of the World Economic Forum in Davos in January 2019. However, she added that the risk of a sharper decline in worldwide growth had increased. Global economic sentiment in 2018 was shaped by the trade dispute between the US and China and by developments relating to Brexit.

Economic output in mature industrialized nations grew by 2.3%. The US economy appeared particularly strong (+2.9%), partly because it had benefited from fresh impetus from the tax reform. The world's biggest economy recorded strong growth in gross investment in fixed assets and in private consumption. Overall, growth in the US in 2018 was more than one percentage point higher than in the euro region (+1.8%), where growth in the German and French economies lost momentum, with economic output in each of the two largest economies in the euro region increasing by only 1.5%. "The German economy is experiencing a downturn," Clemens Fuest, president of the ifo institute, said in view of the institute's business climate index in January 2019. Dark clouds are gathering on the other side of the English Channel, with uncertainty regarding a disorderly Brexit having a dampening effect on the UK economy. The IMF estimates that growth in the UK's gross domestic product came to just 1.4%, compared with 1.8% in 2017, against the backdrop of the country's forthcoming departure from the EU.

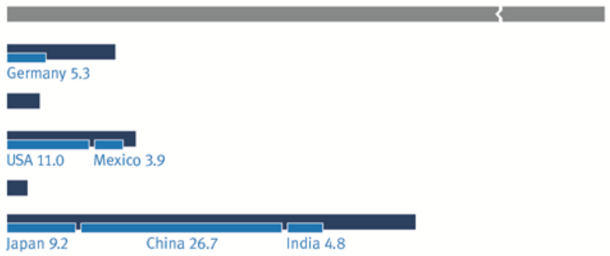
In Asia, the Japanese economy suffered a setback. Following an acceleration in growth in the previous year, the growth rate dropped to below 1% in 2018 (+0.9%). Emerging and developing countries in Asia recorded robust growth of 6.5%, well above the global figure for emerging and developing countries (+4.6%). The fact that growth in Asia was not higher was due in particular to muted economic development in China. Growth in the world's second-largest economy dropped to 6.6%, its lowest level since 1990. In contrast, India recorded growth of 7.3%, 0.6 percentage points more than in the previous year.

Global production of passenger cars and light-duty commercial vehicles remains high

At 94.2 million units according to data from IHS Markit from February 2019, the number of passenger cars and light-duty commercial vehicles up to 6.0 t produced worldwide in the year under review was below the previous year's historic high (95.2 million units). One thing that is striking is that the automotive markets that are important to Rheinmetall Automotive developed very differently from a regional perspective. At the European level, the decline in Western Europe (-3.6%) was offset by strong growth in Eastern European markets (+3.6%). Factors that had a braking effect included the introduction of the new EU test procedure WLTP (worldwide harmonized light vehicles test procedure), which played a significant part in the 9.5% decline in production in Germany. There was also a mixed picture in the USMCA (formerly NAFTA) region. Although there was a drop of 0.6% in production figures for 2018, it was a much smaller reduction than in the previous year (-4.3%). Development was favored by the fact that production figures in the US, the largest USMCA market, were up slightly, while Canada recorded another significant drop of 7.5%.

In Asia, production of passenger cars and light-duty commercial vehicles up to 6.0 t was down significantly on the previous year (-1.1%), largely owing to unusually weak Chinese production figures (-3.7%). The cooling of the overall economy had a noticeable impact on vehicle production in the world's largest automotive market. In contrast, the number of units produced grew particularly strongly in the Indian market (+6.7%). The Brazilian automotive sector, which had recorded very strong growth in the previous year owing to catch-up effects, also saw a further increase in production figures (+4.0%).

Production of passenger cars and light-duty commercial vehicles up to 6.0 t in selected countries million



	2018	2017
World	94.2	95.2
Western Europe	14.3	14.8
Eastern Europe	4.3	4.1
USMCA	17.0	17.1
Brazil	2.7	2.6
Asia	54.0	54.6

Source: IHS Markit, February 2019 | Figures for 2017 taken from IHS Markit from February 2019

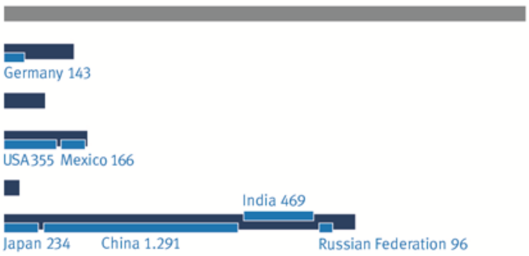
As a globally operating company, Rheinmetall Automotive has a global network of sites in the biggest automotive markets. In 2018, the company once again managed to exploit opportunities in growing sales regions and thus avoid dependence on individual markets at the same time. Rheinmetall Automotive generated 63.2% of its worldwide sales in Europe (Western and Eastern Europe including Germany). China accounted for 7.2%, while the USMCA region had a share of 16.0% in sales. Sales in Brazil contributed 3.0%, while Indian production had a share of 3.0%.

Global production increases in the commercial vehicle market

Rheinmetall Automotive found itself in a growing market in the segment for medium- and heavy-duty commercial vehicles over 6.0 t in 2018. According to IHS Markit, worldwide production of trucks increased to almost 3.5 million vehicles, which represented growth of 3.3% year-on-year. Although overall development was positive, there were different regional trends. Growth in Germany was moderate in comparison with the global market, at 1.6%, although it contrasted positively with the overall development in Western Europe (-2.5%). Eastern Europe recorded strong growth of 9.7%. The double-digit growth rate in the USMCA region (+12.1%) was due in particular to the strong growth in US production volumes (+14.5%). The number of units produced in Brazil rose by 24.9% as a result of catch-up effects. The growth rate on the Asian market (+1.9%) was lower in the year under review than in the previous year. Declining figures in Japan (-10.5%) and China (-6.9%) contrasted with very strong growth in India (+37.7%).

Economic report
General economic conditions

Production of engines for heavy-duty commercial vehicles over 6.0 t in selected countries ’000



	2018	2017
World	3,447	3,337
Western Europe	451	463
Eastern Europe	27	25
USMCA	541	483
Brazil	101	81
Asia	2,320	2,277

Source: IHS Markit, January 2019 | Figures for 2017 taken from IHS Markit from January 2019

Rheinmetall Automotive was quick to recognize the trend towards environmentally friendly mobility

Rheinmetall made significant progress on its journey into the age of e-mobility in 2018. This development is particularly relevant, not least because of the introduction of the WLTP test standard. This new measurement procedure for determining exhaust gas emissions and fuel/electricity consumption in vehicles is changing the automotive market and accelerating development towards new forms of environmentally friendly mobility. The number of newly registered electric cars in Germany rose by 24% to 67,500 in 2018. “Electromobility is a joint task for industry, politics and consumers,” said Bernhard Mattes, president of the Association of the German Automotive Industry (VDA), when the environmental committee of the European Parliament tightened CO_2 guidelines in September. Rheinmetall Automotive is taking on its share of the responsibility for the mobility of the future in the form of pioneering projects.

Governments are investing more in defence again

Changes in the global security situation and new technological developments led to further increases in defence budgets around the world in 2018. More and more governments believe they have a responsibility to promote the modernization of their armed forces. At the global level, this development is reflected in a total volume for defence budgets of USD 1,756 billion, which represents year-on-year growth of USD 64 billion.

The major NATO exercise Trident Juncture 2018 was an example of the growing importance of modern armed forces in the year under review. This multinational exercise was the largest of its kind since the Soviet Union was dissolved. As well as this presentation of defence capability and readiness, investment in the modernization of armed forces also rose further at NATO level. New projects were established in Europe as part of the Permanent Structured Cooperation (PESCO).

The US increased its defence budget by 6.8% in 2018. At around USD 718 billion, US defence spending significantly exceeded the figures for other countries. The second-largest budget worldwide was China's, at USD 208 billion. China thus also spent considerably more on defence than in 2017. This was followed by Saudi Arabia and India. As the European country with the highest defence budget, the UK increased its budget to almost USD 55 billion. France's defence budget rose to about USD 52 billion, and Russia increased defence spending again in 2018 following a significant drop in 2017.

Defence budgets of selected countries billion

	Currency	2018	2017
Germany	Euro	38.9	36.9
World	USD	1,756.2	1,692.4
USA	USD	717.5	671.8
China	USD	207.8	197.5
Saudi Arabia	USD	57.3	57.2
India	USD	56.9	55.3
UK	USD	54.8	53.3
France	USD	52.2	51.1
Russian Federation	USD	47.3	46.9
Australia	USD	30.6	31.0
United Arab Emirates (UAE)	USD	21.1	21.5
Canada	USD	16.0	16.4
Poland	USD	11.2	10.3
Netherlands	USD	10.4	10.1
Algeria	USD	9.6	10.4
Norway	USD	6.4	6.2
South Africa	USD	3.7	3.9

Sources | Germany 2018: Federal Ministry of Finance, provisional budget for 2018, federal budget for 2018 – Overview of spending, infographic dated January 15, 2019 | Germany 2017: Draft federal budget for 2019, section 14, Federal Ministry of Defence, page 2 | All other values for 2018 and 2017: IHS Markit, January 2019 | Figures for 2017 taken from IHS Markit from January 2019

The increase in European defence budgets is the result of economic, strategic and political considerations. Economic conditions have improved again in many countries following the economic and financial crisis, and the increased financial scope that this provides is enabling many European countries to spend more on defence. In Eastern Europe specifically, budget increases since the start of the Ukraine conflict are also a response to the altered relationship with Russia. In addition, many of Europe's largest economies have fallen victim to terrorist attacks in recent years. Cross-border European cooperation is more important than ever to ensure greater security in this context.

The German defence budget increased to €38.9 billion in 2018 (previous year: €36.9 billion). In doing this, Germany is emphasizing its willingness to take on more responsibility within the NATO alliance. By increasing the budget for the German armed forces, the German government comes closer to the target it has set of raising defence spending to 1.5% of gross domestic product by 2024. The German contribution to the Atlantic defence alliance is also strengthened by the fact that Germany will take over the leadership of the VJTF (Very High Readiness Joint Task Force) in 2019. "It is difficult to overestimate the importance of the VJTF to a modern army that is ready for action and Germany's role in the military alliance," Ursula von der Leyen, the Federal Defence Minister, commented regarding the new task at the turn of the year 2018/2019.

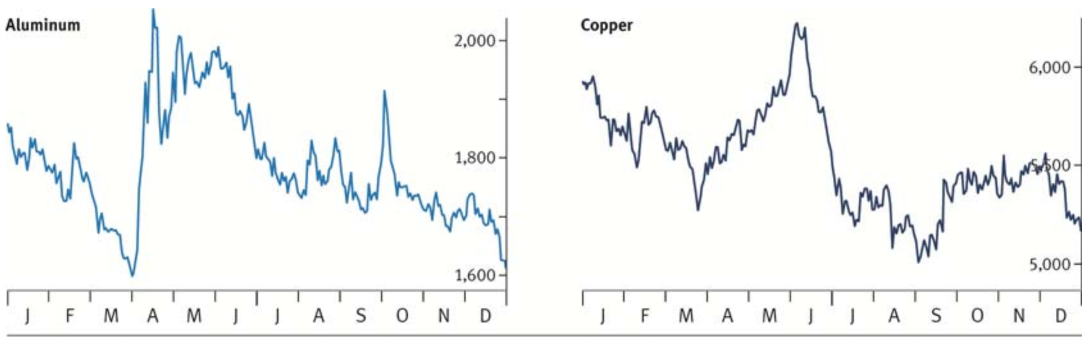
Economic report
General economic conditions

Metal and energy markets in 2018

The prices of many raw materials fell significantly in 2018. The index for industrial metals on the London Metal Exchange (LME) experienced volatility with a downward trend over the course of the year. As at December 31, 2018 it was down 13.7%. The four most important metals that we purchase from this index developed as follows compared with the start of 2018: The price of copper fell by 13% to €5,187 per ton, the price of aluminum also fell by 13%, and the price of nickel dropped by 11.3%. Only the price of tin rose by 2.0% to €17,020 per ton.

The main reasons for this decline in prices were the slowdown in global economic growth, the trade dispute between the US and China and less favorable financing conditions for raw materials owing to rising interest rates, particularly in the US.

Aluminum and copper prices in 2018 €/t

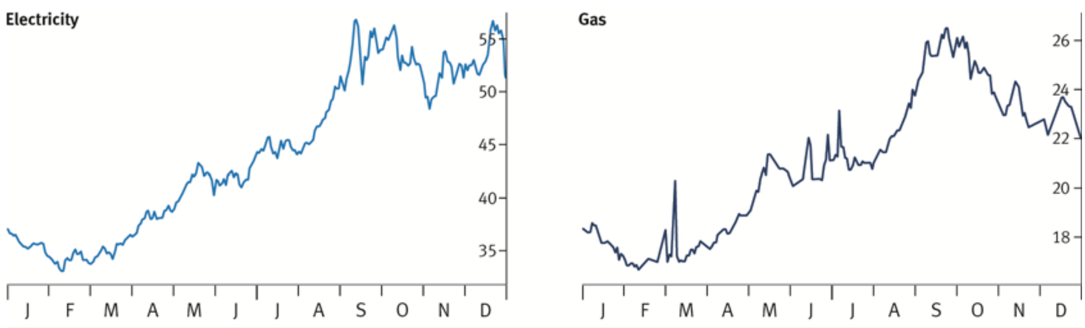


Source: Thomson Reuters Eikon

Electricity and gas prices rose substantially during 2018. The trend in prices was marked by considerable volatility. Forward prices for base-load electricity for supply in 2019 climbed by 38.8% over the course of 2018. The EEX price for supplies of natural gas in 2019 was €22 per MWh at the end of 2018, which was 22% higher than at the start of the year. The increase in electricity prices can be attributed to the rise in the cost of thermal coal, the primary energy source needed for electricity generation, and an increase in prices for CO_2 certificates.

Within the context of our electricity and gas price hedging strategies, we take action several years in advance based on our medium-term planning, meaning that our energy purchases did not suffer the full impact of the increase in EEX prices in 2018.

Electricity and gas prices in 2018 €/MWh



Source: www.eex.com

KEY FACTS RHEINMETALL GROUP

6,148
SALES € MILLION

492
OPERATING RESULT € MILLION

271
CAPITAL EXPENDITURE € MILLION

24,949
EMPLOYEES

9.1
ORDER BACKLOG € BILLION

5.5
R&D INTENSITY %

Economic report
Rheinmetall Group business performance

Consolidated sales up 4.3% at €6,148 million

The Rheinmetall Group increased its sales by 4.3% year-on-year to €6,148 million in fiscal 2018. Adjusted for negative currency effects, growth came to 6.1%.

Sales € million

	2018	2017
Rheinmetall Group	**6,148**	**5,896**
1 Automotive	2,930	2,861
2 Defence	3,221	3,036
Consolidation	(3)	(1)

Sales growth was driven by both corporate sectors. The Automotive sector increased its sales by 2.4% to €2,930 million. The Defence sector achieved sales of €3,221 million in the past fiscal year, an increase of 6.1% on the previous year's figure. At around 72%, the international share of consolidated sales in fiscal 2018 was lower than in the previous year (76%).

Sales by region € million

	2018	2017
Rheinmetall Group	**6,148**	**5,896**
1 Germany	1,700	1,423
2 Other Europe	1,864	1,827
3 North-, Middle- and South America	735	767
4 Asia	1,136	1,070
5 Other regions	713	809

Consolidated operating earnings up significantly

Operating earnings (EBIT before special items) climbed by 23.0% to €492 million in fiscal 2018 after €400 million in the previous year. The operating margin rose to 8.0% (previous year: 6.8%). The Defence sector achieved an operating result of €254 million, 46% above the previous year's figure of €174 million. Rheinmetall Automotive also increased its operating earnings. At €262 million, they were up 5.2% compared with the previous year's figure of €249 million. The operating result for Others/Consolidation includes the result for Rheinmetall AG and was negative at €-24 million, following the previous year's figure of €-23 million.

Operating result € million

	2018	2017
Rheinmetall Group	**492**	**400**
Automotive	262	249
Defence	254	174
Others/consolidation	(24)	(23)

The operating result was adjusted for special items of €26 million in 2018. Gains on the sale of properties came to €3 million in the Automotive sector and €30 million in the other companies. On the other hand, the Defence sector incurred restructuring expenses of €7 million. Adjustments of €15 million were made for special items in 2017, €9 million of which related to the gain on the sale of a property under other companies.

Special items 2018 € million

	Operating result	Corporate transactions	Restructuring	Others	Special items	EBIT
Rheinmetall Group	**492**	**-**	**(7)**	**33**	**26**	**518**
Automotive	262	-	-	3	3	265
Defence	254	-	(7)	-	(7)	247
Others/consolidation	(24)	-	-	30	30	6

Special items 2017 € million

	Operating result	Corporate transactions	Restructuring	Others	Special items	EBIT
Rheinmetall Group	**400**	**(10)**	**(24)**	**19**	**(15)**	**385**
Automotive	249	-	(22)	-	(22)	227
Defence	174	(10)	(2)	10	(2)	172
Others/consolidation	(23)	-	-	9	9	(14)

Consolidated net income € million

	2018	2017
EBIT	**518**	**385**
Net interest	(33)	(39)
EBT	**485**	**346**
Income taxes	(131)	(94)
Group net income	**354**	**252**
of which:		
Minority interests	49	28
Rheinmetall AG shareholders	305	224
Earnings per share from continuing operations (€)	**7.10**	**5.24**

Net interest income improved to €-33 million, compared with €-39 million in the previous year. The Rheinmetall Group's earnings before taxes (EBT) were €485 million after €346 million in the previous year. Earnings after taxes increased by 40.5% from €252 million in 2017 to €354 million in the year under review. After deduction of earnings of €49 million attributable to non-controlling interests (previous year: €28 million), earnings attributable to shareholders of Rheinmetall AG were €305 million (previous year: €224 million). Taking into account the weighted number of shares (2018: 42.95 million; 2017: 42.80 million), earnings per share came to €7.10, compared with €5.24 in the previous year.

Order intake at record level

At €8,451 million (previous year: €5,884 million), incoming orders for fiscal 2018 were 37.5% or €2,303 million higher than the level of sales. Incoming orders in the Automotive sector totaled €2,889 million after €2,922 million the year before. Incoming orders in the Defence sector amounted to €5,565 million, an increase of 87.8%, and were thus well above the previous year's figure of €2,963 million.

Order intake € million

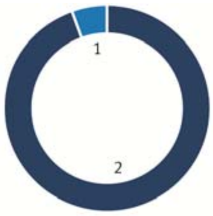
	2018	2017
Rheinmetall Group	**8,451**	**5,884**
1 Automotive	2,889	2,922
2 Defence	5,565	2,963
Consolidation	(3)	(1)

Economic report
Rheinmetall Group business performance

Order backlog

At €9,055 million, the Rheinmetall Group has an order backlog as of December 31, 2018 that is €2,119 million or around 31% higher than the previous year's value (€6,936 million), representing a significant increase.

Order backlog € million



	2018	2017
Rheinmetall Group	**9,055**	**6,936**
1 Automotive	478	520
2 Defence	8,577	6,416

Capital expenditure

As in previous years, the Rheinmetall Group made targeted investments in areas offering growth opportunities and enabling it to strengthen its profitability on a sustained basis, to increase its international competitiveness and to secure technological expertise in the business areas. Furthermore, to strengthen operating performance capacity and to improve efficiency, investments were made in the expansion and modernization of infrastructure, facilities, equipment, processes and manufacturing capacity. The Rheinmetall Group's capital expenditure on property, plant and equipment and intangible assets amounted to €271 million after €248 million in the previous year. This is equivalent to 4.4% of consolidated sales (previous year: 4.2%). Capital expenditure was offset by depreciation and amortization of €318 million (previous year: €241 million).

Capital expenditure € million

	2018	2017
Rheinmetall Group	**271**	**248**
Automotive (Net investments[1])	161	154
Defence	101	89
Other	9	5

[1] Total capital expenditure less payments received from customers of €31 million (previous year: €22 million).

Employees

Rheinmetall had 24,949 employees at the end of the 2018 reporting period, compared with 23,726 on December 31, 2017 (+5.2%). 12,855 employees or 51.5% of the Group workforce were employed in the Automotive sector (previous year: 51.7%), while 11,832 or 47.4% were employed in the Defence sector (previous year: 47.3%) and 262 employees or 1.1% at Rheinmetall AG and in the service companies (previous year: 1%). In the year under review, just over half of the workforce (50.6%; previous year: 50.3%) was employed at Rheinmetall companies outside Germany. 5,446 employees (previous year: 5,539) were in Europe, while there were 1,449 employees working in South America (previous year: 1,293) and 2,376 employees in North America (previous year: 2,242). 1,620 employees were attributable to Africa (previous year: 1,347) and 211 employees to Australia (previous year: 185). In Asia, the number of employees rose to 1,522 (previous year: 1,322).

In 2018, 821 employees at our German companies were foreign nationals (previous year: 769). In addition, 63 German employees were posted to Rheinmetall Group locations outside Germany (previous year: 75) in the period under review. In the last fiscal year, Rheinmetall's German companies employed 9,242 staff covered by collective wage agreements (previous year: 9,226), 1,412 staff with contracts not covered by collective wage agreements (previous year: 1,401) and 234 managerial staff (previous year: 223).

The Rheinmetall Group regards the employment of women, in management positions in particular, as a self-evident and important part of its diversity. 21.2% of employees were female in the year under review (previous year: 20.8%). Rheinmetall Automotive employed 3,000 women (previous year: 2,845) and Rheinmetall Defence 2,200 women (previous year: 2,000). 95 women worked in the Group holding company and the service companies (previous year: 90). Generally, the Defence and Automotive sectors are preferred by men, who predominantly tend to choose technical or scientific subjects for study and professional training. For these reasons, the percentage of women occupying management positions in our technology group is lower than in other industries. In the year under review, the Rheinmetall Group employed 2,392 managers across its four levels below the Executive Board (previous year: 2,423), 231 or 9.7% of whom were women (previous year: 215 or 8.9%). The ratio of women among the senior management staff of 268 people in the year under review (previous year: 273) was 4.9% (previous year: 5.5%). Our talent management helps us to identify and develop qualified women with potential at an early stage. Women in executive management and other management roles are also to be encouraged more in the future. Suitable women are prepared for future management responsibilities via the internal support and development programs for junior staff. At the same time, the internal management development programs set the respective line managers ambitious targets for the participation of women in these programs.

Whether employees are young or a little older, whether they have only recently joined Rheinmetall or have been here longer, our corporate culture aims to ensure that each individual employee can make an active contribution, with his or her personal qualities, skills and qualifications and commitment, to help the company to achieve its targets on a lasting basis. In 2018, 13.6% of the employees were aged 29 or younger (previous year: 13.7%), 65.5% were aged between 30 and 54 (previous year: 65.4%) and 20.9% were aged 55 or older (previous year: 21.3%). The average age of employees (excluding trainees and interns) in the Rheinmetall Group in 2018 was 43.3 years (previous year: 43.5). The average age in the German companies was 45.0 in 2018 (previous year: 45.3), while in the Rheinmetall companies outside Germany it was 42.0, as in the previous year. The average age of managers at the German Rheinmetall companies was 49.0 (previous year: 49.1).

In the year under review, the average tenure with the company was 12.7 years in the Automotive sector (previous year: 13.1) and 12.4 years in the Defence sector (previous year: 13.1). In the holding/service companies this was 8.9 years (previous year: 10.3), while the average within the Rheinmetall Group in 2018 was 12.5 years (previous year: 13.1). On average, employees in the Rheinmetall companies outside Germany had worked at the company for 10.4 years (previous year: 10.8), while those in the German companies averaged 14.7 years (previous year: 15.4). In the past fiscal year. 449 employees had been at the company for more than 40 years (previous year: 422). The average tenure for managers at the German companies fell slightly to 15.9 years, compared with 16.4 years in the previous year.

Personnel expenses came to €1,574 million in the year under review, compared with €1,548 million in the previous year, which corresponded to a personnel expenses ratio of 26]% (previous year: 26%). Personnel expenses per employee amounted to €70 thousand (previous year: €72 thousand). Sales per employee stood at €274 thousand in the last fiscal year (previous year: €276 thousand).

Employees

	2018	2017
Rheinmetall Group	**24,949**	**23,726**
Automotive	12,855	12,277
Defence	11,832	11,232
Others/consolidation	262	217

Total workforce | on the reporting date

Economic report
Rheinmetall Group business performance

Research and development

€336 million was spent on research and development throughout the Group in 2018, following €295 million in the previous year. €16 million (previous year: €15 million) of this was capitalized as development costs. €95 million (previous year: €71 million) of development expenses was passed on to customers. The Rheinmetall Group's research and development ratio was 5.5% (previous year: 5.0%), 6.6% (previous year: 6.5%) in Rheinmetall Automotive and 4.4% (previous year: 3.6%) in Rheinmetall Defence.

Research and development € million

	2018	2017
Employees in research and development	3,608	3,318
Employees in research and development as % of total workforce	14.5	14.0
R&D: Expenses	336	295
of which capitalized	16	15
R&D ratio (research and development expenses in relation to sales)	5.5	5.0

Statement of cash flows

Owing to higher earnings after taxes and a significant increase in working capital, the cash flow from operating activities was reduced by €304 million from €546 million to €242 million. Following a figure of €30 million in the previous year, €40 million was paid into an external fund (CTA) in the year under review to cover provisions for pensions and partial retirement obligations.

Operating free cash flow – defined as cash flow from operating activities less capital expenditure on intangible assets, property, plant and equipment and investment property – amounted to €-35 million (previous year: €276 million).

Taking into account the proceeds from the sale of assets and divestments, in addition to the payments for acquisitions, the free cash flow amounted to €34 million (previous year: €357 million), €323 million lower than in the previous year.

Statement of cash flows € million

	2018	2017
Net income	**354**	**252**
Amortization, depreciation and impairments	318	241
Payment into external Fund (CTA)	(40)	(30)
Changes in Working Capital and others	(390)	83
Cash flows from operating activities	**242**	**546**
Investments in property, plant and equipment, intangible assets and investment property	(277)	(270)
Operating free cash flow	**(35)**	**276**
Cash receipts from the disposal of property, plant and equipment, intangible assets and investment property	73	3
Net cash outflow from financial investments in/divestments of consolidated subsidiaries and other financial assets	(21)	8
Payments for the purchase of short-term commercial papers	17	70
Free Cash Flow	**34**	**357**

Asset and capital structure

The new accounting standards IFRS 15 “Revenue from Contracts with Customers”, IFRS 16 “Leases” and IFRS 9 “Financial Instruments” were applied for the first time in fiscal 2018. The previous year’s figures have not been adjusted for comparison. The comments therefore relate to January 1, 2018 where this makes sense. Section (3) of the notes contains information about these changes and a reconciliation of the balance sheet as at December 31, 2017 with January 1, 2018.

The Rheinmetall Group’s total assets rose by €429 million or 6.8% to €6,759 million in fiscal 2018. Non-current assets accounted for 44% of total assets as of December 31, 2018 after 45% in the previous year. They increased by €74 million to €2,951 million. This increase was essentially due to an increase of €56 million in other non-current assets. Current assets increased by €355 million overall year-on-year to €3,808 million. €295 million of this increase was attributable to trade receivables and €85 million to inventories. In contrast, liquid assets and cash and cash equivalents were down by €52 million.

Asset and capital structure € million

	Dec. 31, 2018	%	Jan 1, 2018 [1]	%
Non-current assets	2,951	44	2,877	45
Current assets	3,808	56	3,453	55
Total assets	**6,759**	**100**	**6,330**	**100**
Equity	2,172	32	1,860	29
Non-current liabilities	1,981	29	2,070	33
Current liabilities	2,606	39	2,400	38
Total equity and liabilities	**6,759**	**100**	**6,330**	**100**

[1] Adjustment of the carrying amounts as at January 1, 2018 as a result of the initial application of IFRS 9, IFRS 15 and IFRS 16, see note (4) in the notes to the consolidated financial statements.

The equity ratio is 32.1%, following 29.4% at the start of the year. The equity of the Rheinmetall Group rose by €312 million or 16.8% to €2,172 million in fiscal 2018. This increase mainly resulted from earnings after taxes (€354 million). This was offset by the distribution of the dividend to the shareholders of Rheinmetall AG of €72.9 million. The €89 million decline in non-current liabilities to €1,981 million is essentially due to a reduction in provisions for pensions owing to an allocation to the CTA in Germany in the amount of €40 million and the positive development of plan assets in Switzerland. Current liabilities increased by €206 million. This increase was primarily due to higher current financial debts (+€51 million) and a rise in income tax liabilities (+€47 million) owing to the positive earnings performance.

In terms of the total assets adjusted for cash and cash equivalents, the equity ratio was 36% after 33% in the previous year. Financial liabilities increased by €35 million or 4.3% set against the beginning of the year to €855 million. As of the end of the reporting period, cash and cash equivalents totaled €724 million after €757 million at the end of the previous year. An additional €100 million was held in commercial paper as the liquidity reserve (previous year: €119 million). Net financial liabilities for the 2018 reporting year totaled €31 million after €-56 million at the beginning of the year. The share of net financial liabilities in relation to adjusted total assets was 1% in the fiscal year, compared with -1% at the start of the year.

Economic report
Rheinmetall Group business performance

Capital structure € million

	Dec. 31, 2018	%	Jan 1, 2018 [1]	%
Equity	**2,172**	**36**	**1,860**	**33**
Current financial debts	151	3	100	2
Non-current financial debts	704	12	720	13
Total financial debts	**855**	**15**	**820**	**15**
Near-cash assets	(100)	(2)	(119)	(2)
Cash and cash equivalents/financial resources	(724)	(12)	(757)	(14)
Net financial debts	**31**	**1**	**(56)**	**(1)**
cash and cash equivalents	**6,035**	**100**	**5,573**	**100**

[1] Adjustment of the carrying amounts as at January 1, 2018 as a result of the initial application of IFRS 9, IFRS 15 and IFRS 16, see note (4) in the notes to the consolidated financial statements.

Value added

The Rheinmetall Group generated value added of €2,110 million in fiscal 2018, outperforming the previous year's figure of €1,952 million. The Group's total operating performance was €6,616 million, compared with €6,385 million in the previous year. The ratio of value added to the Group's total operating performance was 32%, above the previous year's figure of 31%. Value added per employee rose from €91 thousand to €94 thousand. At 75%, most of the value added benefited the employees in fiscal 2018. 7% related to Treasury. Interest payable to lenders was 2% in the year under review. The shareholders of Rheinmetall AG received 4% of the value added, or €91 million. The Rheinmetall Group retained €264 million compared with €179 million in the previous year.

Source and use of value added € million

	2018	%	2017	%
Source				
Group's total operating performance	6,616	100	6,385	100
Input	(4,188)		(4,192)	
Amortization and depreciation	(318)		(241)	
Value added	**2,110**	32	**1,952**	31
Use				
Employees	1,574	75	1,548	79
Treasury	142	7	104	5
Lenders/banks	39	2	48	3
Shareholders	91	4	73	4
Companies	264	12	179	9
Value added	**2,110**	**100**	**1,952**	**100**

The Group's total operating performance comprises all income, i.e. total operating performance, other operating income, income from equity holdings, interest income and other financial income. Input includes all expenses except personnel expenses, interest and taxes.

KEY FACTS RHEINMETALL AUTOMOTIVE

2,930

SALES € MILLION

262

OPERATING RESULT € MILLION

161

CAPITAL EXPENDITURE € MILLION

12,855

EMPLOYEES

478

ORDER BACKLOG € MILLION

6.6

R&D INTENSITY %

Economic report
Business performance of Rheinmetall Automotive

Rheinmetall Automotive increases sales to over €2.9 billion

Rheinmetall Automotive achieved sales of €2,930 million in 2018, which represented growth of 2.4% year-on-year or 4.2% after adjustments for negative currency effects. In contrast, the global automotive industry slackened slightly in 2018. Production of light vehicles declined by 1.0% year-on-year.

Sales € million

	2018	2017
Rheinmetall Automotive	**2,930**	**2,861**
Mechatronics	1,664	1,621
Hardparts	989	968
Aftermarket	367	359
Others/consolidation	(90)	(87)

All three divisions once again recorded year-on-year sales growth. Declining demand for diesel products for the passenger car market was offset, among other things, by new product launches and growth in business with other product groups (including trucks, large-bore pistons and gasoline drives). Sales of the Mechatronics division rose by 2.7% to €1,664 million in 2018 owing to a further increase in demand from automotive manufacturers for solutions to reduce fuel consumption and emissions as well as further growth in business with commercial vehicles. The Hardparts division recorded growth of 2.2% to €989 million, largely owing to the positive development of business with large-bore pistons and pistons for trucks and off-road vehicles. The Aftermarket division increased its worldwide replacement parts business by 2.2% to €367 million.

The divisions' shares of sales were unchanged on the previous year. The Mechatronics division remained the division that generated the highest share of sales, at 55%. As in the previous year, the Hardparts division's share of sales came to 33%. The Aftermarket division once again accounted for 12% of Rheinmetall Automotive's unconsolidated sales.

The regional distribution of sales for fiscal 2018 was virtually unchanged year-on-year. The share of sales generated with customers in Germany was 20% (previous year: 19%) and, accordingly, the share generated with customers abroad was 80% (previous year: 81%). Of business abroad, the portion attributable to customers in Western and Eastern Europe fell slightly to 43% (previous year: 45%). Sales to buyers in North and South America represented 19% of all sales, roughly at the same level as in the previous year (20%). This included business with customers in the USMCA economic region, consisting of the US, Mexico and Canada, which, as in the previous year, had a share of 16%. Deliveries to customers based in Asia accounted for a higher proportion of sales at 17% (previous year: 15%), of which 7% (previous year: 6%) was attributable to customers in China. The share of sales represented by customers in other countries once again came to 1%.

Our joint ventures operated with a Chinese partner in China and Germany are accounted for using the equity method and are therefore not included in consolidated sales. Sales of these companies totaled €1,193 million in fiscal 2018, which corresponds to year-on-year growth of 2.6%, or 4.4% after adjustment for currency effects.

Result marks a new record high

Operating earnings of Rheinmetall Automotive (EBIT before special items) came to €262 million for the last fiscal year, a new record in the company's history. The operating margin was 8.9% (previous year: 8.7%).

Operating result € million

	2018	2017
Rheinmetall Automotive	**262**	**249**
Mechatronics	171	176
Hardparts	65	60
Aftermarket	36	33
Others/consolidation	(10)	(20)

Operating earnings of the divisions developed positively, even if the Mechatronics division, unlike the other divisions, recorded no growth in earnings compared with the previous year. However, research and development costs for projects in the field of e-mobility were allocated to the Mechatronics division for the first time in 2018. Without the allocation of these expenses, the division's earnings would have been almost at the same level as in the previous year. The increase in earnings in the Hardparts division was due in particular to an improvement in castings business. Operational improvements in production also played an important part in earnings growth in the Aftermarket division.

Others/Consolidation reported a result €-10 million (previous year: €-20 million). This related to Rheinmetall Automotive AG and other holding, financing and real estate companies. The improvement in earnings was due to lower allocations to provisions for legal and environmental risks. In addition, expenses for research and development projects relating to electromobility were recognized in the Mechatronics division as at December 31, 2018, unlike in the previous year.

Capital expenditure

After deduction of payments received from customers, Rheinmetall Automotive invested €161 million in intangible assets, property, plant and equipment and rights of use from leases in accordance with IFRS 16 in fiscal 2018 (previous year: €154 million). The increase in capital expenditure was attributable to the Mechatronics division (+€22 million). Development costs of €12 million were capitalized in the last year, considerably more than in the previous year (€4 million). €7 million related to rights of use in accordance with IFRS 16. IFRS 16 was applied for the first time in 2018; the previous year's figures have not been adjusted. The investment ratio as the ratio of capital expenditure to sales increased slightly to 5.5% (previous year: 5.4%).

Capital expenditure[1] € million

	2018	2017
Rheinmetall Automotive	**161**	**154**
Mechatronics	103	81
Hardparts	51	68
Aftermarket	6	4
Others/consolidation	1	1

[1] Total capital expenditure less payments received from customers of €31 million (previous year: €22 million)

Economic report
Business performance of Rheinmetall Automotive

Companies in the Mechatronics division increased their share of capital expenditure significantly year-on-year to 64% (previous year: 53%). At 32%, a considerably lower share of total capital expenditure was attributable to the Hardparts division than in the previous year (44%). The share of the Aftermarket division in capital expenditure was 4% (previous year: 3%).

Capital expenditure was distributed almost equally between Germany and the international market, at 49% and 51% respectively. In regional terms, investment outside Germany focused on Western and Eastern European sites, which accounted for 21% (previous year: 30%) of the total volume of capital expenditure for 2018, although overall considerably less was invested in these sites in 2018, which affected plants in Spain and the Czech Republic in particular. At 13%, a smaller portion of capital expenditure also went to North America than in the previous year (15%): although investment was cut significantly in Mexico, it was stepped up considerably in the US. Capital expenditure at the Brazilian site represented 3% of total capital expenditure (previous year: 5%). Production facilities in Asia received 14% of investment funding in the year under review (previous year: 12%), where capital expenditure increased in China and India and was reduced slightly in Japan.

Employees

The companies of Rheinmetall Automotive employed 11,710 people as of December 31, 2018, after 11,166 as of the end of the previous year (+4.9%).

Employees Capacity

	2018	2017
Rheinmetall Automotive	**11,710**	**11,166**
Mechatronics	4,741	4,429
Hardparts	5,944	5,759
Aftermarket	833	817
Others/consolidation	191	161

In terms of the distribution of employees by division, there was only a slight shift year-on-year in the two large divisions. While the share of the Mechatronics division remained unchanged compared with the previous year at 40%, Hardparts' share decreased by one percentage point to 51% (previous year: 52%). As in the previous year, 7% of the employees were employed in the Aftermarket division. The share of employees in the Other division, determined by the companies Rheinmetall Automotive AG and KSPG (China) Investment Co., Ltd., increased slightly to 2% (previous year: 1%).

In the 2018 reporting year, 60% of the workforce (previous year: 61%) was employed at Rheinmetall Automotive companies outside Germany. In absolute figures, an additional 278 employees were employed at locations outside Germany in the year under review compared with the previous year.

Research and development

As one of the most important industries worldwide, the automotive industry is facing major changes resulting from the ever present tension between the megatrend of increasing individual mobility and the international consensus to make this climate-neutral and, above all, free from emissions of substances that are harmful to health.

As a result, the established drive technology of the tried-and-tested, inexpensive combustion engine is coming under ever greater pressure while electromobility is becoming increasingly important. It is forecast that up to 25% of passenger cars produced will be powered by electric batteries by the middle of the next decade. Nevertheless, the combustion engine will remain highly relevant in drive technology for decades to come, both in the passenger car segment and in particular in commercial vehicles. Along with the development of products for new electromobility technologies, optimization of combustion engine systems and components will therefore continue to be very important.

Electrical vapor pump (EVAP) – The permissible limits for evaporation of fuels from stationary vehicles are constantly being tightened by legislation. One classic problem is the evaporation of fuels due to warming of the tank. Gasoline is at a disadvantage here compared with diesel fuels. Another significant cause of evaporation is the plastic parts used in the vehicle. This fact illustrates very powerfully how demanding this legislation has now become. Activated carbon filter boxes that absorb gasoline fumes have been used for a long time to solve the problem of gasoline evaporation. The activated carbon filter must be regenerated from time to time. This is achieved by drawing in fresh air through the filter, mixing it with gasoline and then feeding it into the engine as part of the intake mixture. To comply with increasingly stringent legislation, regeneration must be feasible under almost all conditions. This may mean that, instead of using an intake manifold vacuum, as was previously normal, an active fan is required. In the year under review, the Mechatronics division became the first and so far only supplier to develop such an active fan (EVAP) and bring it to serial production with a major automotive manufacturer. For energy reasons, the EVAP was designed as a centrifugal fan with high rotation speeds, to ensure a long service life. With an innovative single-phase brushless DC motor, it was possible to meet the complex requirements at marketable costs. With this new product, Mechatronics is entering a promising market in which it currently has distinctive unique selling points.

Engine blocks and structural components made of aluminum, as well as aluminum housings for electric engines and aluminum battery housings for electromobility – Rheinmetall Automotive's development activities were very diverse in 2018. In the field of aluminum casting, we pressed ahead at top speed with development and production activities relating to engine blocks, structural and chassis parts and components for electromobility with our joint venture partner HUAYU Automotive Systems Co., Ltd. (HASCO). To meet strict requirements in terms of strength, rigidity, durability and functional integration, i.e. integration of additional water or oil channels, the existing low-pressure casting and die casting processes for engine blocks were constantly refined. The sand core-intensive low-pressure mold casting and the use of organic and inorganic sand cores and specially developed supply techniques means that the highest static and dynamic strength requirements can be fulfilled. Projects with German automotive manufacturers were started or moved into series production in 2018. In addition, development activities were launched for corrosion-proof cylinder working surfaces, which will be essential in order to meet CO2 emissions targets for 2025.

Economic report
Business performance of Rheinmetall Automotive

A new casting process has been developed at the site of KS HUAYU AluTech GmbH in Neckarsulm, which is particularly suited to very complex engine block constructions and housings for electric traction engines. The process has been transferred to a joint venture plant in China for production of various series products for global automotive manufacturers. The results are high-quality, heavy-duty engine blocks and water-cooled electric engine housings with filigree cooled housing structures, which can also be cast in comparatively short cycle times. In addition to the lightweight elements that have been added to the portfolio, such as structural components, cross members and rear axle mounts, further projects for aluminum shock absorber mounts have gone into series production. We continued moving the first projects in the field of electromobility into series production. An aluminum battery housing for the European market is cast in a die casting hall that was commissioned in 2018, after which it is finished and delivered to the customer ready to fit with a cathodic dip coating applied. The process transfer with the joint venture partner for the Chinese market will take place in 2019.

Research and development € million

	2018	2017
Rheinmetall Automotive	**193**	**186**
Mechatronics	160	148
Hardparts	32	34
Aftermarket	–	–
Others/consolidation	1	4

Rheinmetall Automotive increased spending on research and development activities in fiscal 2018. After deduction of research and development revenue of €36 million (previous year: €47 million), self-financed expenses came to €157 million, of which €3 million related to research projects in the field of e-mobility (previous year: €4 million). The research and development ratio as the ratio of expenses to sales rose slightly by 0.1 percentage points to 6.6%.

As of December 31, 2018, a total of 1,279 employees were employed in the research and development departments of the Automotive companies (previous year: 1,070). That means that around one in nine employees was entrusted with research and development tasks.

Employees in research and development Capacity

	2018	2017
Rheinmetall Automotive	**1,279**	**1,070**
Mechatronics	993	773
Hardparts	274	291
Aftermarket	7	–
Others/consolidation	5	6

Mechatronics division

Key figures

		2018	2017
Sales	€ million	1,664	1,621
Operating result	€ million	171	176
Operating margin	in %	10.3	10.9
Capital expenditure	€ million	103	81
Employees (Dec. 31)	Capacity	4,741	4,429

Sales – Despite some negative market influences, the Mechatronics division continued to grow in 2018, even if sales growth was lower than in previous years. Sales increased by 2.7% year-on-year to €1,664 million in fiscal 2018. Adjusted for currency effects, growth came to 3.6%. The undiminished growth in demand from automotive manufacturers for solutions to reduce emissions of pollutants and fuel consumption, together with the division's future-oriented product portfolio, once again had a positive impact on business performance. However, the division was unable to escape the negative effects of weaker demand for components for diesel engines and delays in call-offs by manufacturers owing to deferred engine approvals as a result of the introduction of the new WLTP measurement procedure for exhaust gases. The Mechatronics division increased the share of non-European sales from 20% to 21% in the last fiscal year.

Development in the individual business units varied. Particularly strong sales growth was achieved in the Commercial Diesel Systems and Pumps business units. Sales growth in the Commercial Diesel Systems business unit was driven in particular by exhaust gas recirculation valves (EGR) and EGR modules and exhaust gas flaps. The increase in sales in the Pump Technology business unit was mainly attributable to additional sales of variable mechanical water pumps, water recirculation pumps and electric water pumps. The Actuators and Automotive Emission Systems business units, on the other hand, experienced a decline. The weakness of the diesel market had an impact here.

Operating earnings – The Mechatronics division's operating earnings for fiscal 2018 amounted to €171 million, down slightly on the previous year. Despite low sales growth, the division managed to largely offset price reductions on the customer side and cost increases resulting from an increase in the number of employees in development. Through the further build-up of manufacturing capacity for new products and expansion of the Asian sites, the foundations were laid for further growth, although initial costs of around €8 million had a negative impact on earnings. The division's operating margin fell from 10.9% in fiscal 2017 to 10.3% in the year under review.

Capital expenditure – Companies in the Mechatronics division invested a total of €103 million in 2018, €22 million more than in the previous year. The investment ratio rose to 6.2% (previous year: 5.0%). Investment was needed to expand capacity for ongoing series products, owing to a further rise in demand from customers and in connection with the launch and ramp-up of new customer projects.

Economic report
Business performance of Rheinmetall Automotive

Capacity was created for an innovative electrical vapor pump (EVAP) for a globally operating automotive manufacturer, which will be used in a fuel vapor recovery system. The tightening of regulatory requirements regarding emissions of fuel vapors from the tank into the atmosphere, particularly in the US and China, makes the use of this pump necessary. In accordance with the local-for-local approach, the necessary investments were made at our site in Fountain Inn, US, and in the non-consolidated joint venture Pierburg Huayu Pump Technology Co., Ltd. in Shanghai, China. In building the facilities, we drew on the expertise of our own plant construction department at our site in Lanciano, Italy. The facilities were designed, built and run in there.

One area on which investment is focusing is Asia, where Mechatronics is set to continue its growth of the last few years. In China, we are expanding our capacity for a wide range of applications for our products. New facilities for coolant valves, throttle valves and exhaust gas flaps and for the newest generation of divert-air valves have been installed at Pierburg China Ltd. The first assembly facilities have also been created for the Mechatronics division’s first project worldwide in the field of variable valve drives. The variable valve drive project is being promoted in a production network with the German sites in Niederrhein and Hartha. Our fully consolidated joint venture Pierburg Mikuni Pump Technology (Shanghai) Corp. booked further projects for variable-control oil pumps, for which investments were made in 2018.

In India, new projects were received for exhaust gas recirculation valves for use in both light duty vehicles and in the truck segment ahead of the introduction of the more stringent BS VI exhaust emission standards from 2020. The relevant industrial capacity will be created for these in the coming years.

Employees – At the end of 2018, the number of employees in the division totaled 4,741, compared with 4,429 employees at the end of the previous year. This represents an increase of 7.0%. In particular, personnel numbers increased at companies outside Europe in India, China and Mexico, in response to strong growth momentum in these regions. Research and development activities in Europe were also strengthened further.

Research and development – €133 million was spent on research and development (R&D) in the division after deduction of R&D revenue, compared with €118 million in the previous year. The share of these expenses in sales was 8.0%, 0.7 percentage points more than in the previous year. This increase also reflects the Mechatronics division’s growing efforts to develop new products. Worldwide, 993 employees (previous year: 773 employees) were employed in research and development as of the end of 2018.

Development in the Mechatronics division was focused on application development for new projects, customer support with current products, development of existing product families and increased percentages of predevelopment for the development of new projects in electric and hybrid drive systems.

OEMs are increasingly exploiting the potential of thermal management in the development of new engines. Optimization of thermal management in a combustion engine is a cost-efficient and practical method of reducing fuel consumption, including during technical reworking of engines. In particular, this involves separating the flows of coolant to the various parts of the engine and regulating them as needed.

The technical focus is both on cooling and on the targeted warming of the relevant part of the engine. A thermal management system will also be required in vehicles powered by electric batteries, and this will call for more coolant valves. The Mechatronics division is the market leader in the field of small and medium-sized solenoid valves for various automotive applications and has developed a new generation of coolant valves on the basis of this expertise. The key development aims for coolant valves are good flow characteristics, compactness, low energy consumption and optimized costs. An order received from a major German automotive manufacturer confirms that these objectives have been achieved.

The Mechatronics division has received a large-volume order for electric vacuum pumps from a well-known European automotive manufacturer. Electric vacuum pumps are needed in all vehicles that do not have a sufficient vacuum in the intake manifold. In particular, this includes all diesel vehicles, which generally have a mechanical vacuum pump and use an electric pump only as a booster pump. All vehicles that can be electrically powered for a long time, particularly plug-in hybrids and battery electric vehicles (BEVs), have electric vacuum pumps on board. It is possible to use electrically activated braking systems in these vehicles, but these are disadvantageous in terms of cost. By far the biggest and most important market segment for electric vacuum pumps is the strongly dethrottled gasoline engine. Dethrottling ensures increased efficiency and reduces the vacuum; it will therefore be rolled out gradually to all gasoline engines. This means we can serve a steadily growing market with electric vacuum pumps. The key design features of an electric vacuum pump are noise generation, size and efficiency.

Hardparts division

Key figures

		2018	2017
Sales	€ million	989	968
Operating result	€ million	65	60
Operating margin	in %	6.6	6.2
Capital expenditure	€ million	51	68
Employees (Dec. 31)	Capacity	5,944	5,759

Sales – Sales of the Hardparts division increased by 2.2% year-on-year to €989 million in 2018. The sales figures for all consolidated business units exceeded the respective figures for the previous year. Relatively speaking, sales of the Large Bore Pistons business unit have improved the most, with a growth rate of over 7%, which was due to continued positive development of key market segments in large engines business. The Small Bore Pistons business unit grew slightly by 1%. Positive impetus came from worldwide business with pistons for commercial vehicles and from sales of equipment, which compensated for negative developments in European passenger car business. Development of companies outside Europe was stable to slightly positive. The Bearings business unit exceeded the previous year's sales by more than 4%. Growth at companies in India, which was dampened here by the weakness of the local currency, and in North America, together with higher quantities and copper prices in continuous casting, were the most important factors in this sales growth.

Economic report
Business performance of Rheinmetall Automotive

Operating earnings – The Hardparts division achieved operating earnings of €65 million in fiscal 2018, compared with €60 million in the previous year. Costs for the closure of the piston plant in France were eliminated in the previous year's operating earnings. The positive earnings performance was essentially due to the castings business, the pro rata income of which is included in the divisional result in accordance with the equity method. In the European castings business, the start-up problems with new products in the non-engine sector that had negatively affected the previous year's figures were overcome. Results also improved further in China despite difficult market conditions, leading to at equity income of €33 million for the joint ventures, well above the previous year's figure of €30 million. The Large Bore Pistons business unit managed to translate sales growth into improved earnings, while the other two business units, Bearings and Small Bore Pistons, remained stable year-on-year. The result also includes expenses for the development of new product areas, with which dependence on passenger car combustion engines is to be reduced. The division's operating margin increased year-on-year by 0.4 percentage points to 6.6%.

Capital expenditure – Capital expenditure by the Hardparts division was reduced by 25% year-on-year to €51 million in 2018. The previous year's figure included investment of €7 million in buildings at the Neckarsulm site. Even without this effect, however, there was a significant decline in other capital expenditure, with by far the largest share of this drop attributable to the Small Bore Pistons business unit. The focus of the division's investing activities was on the modernization of production facilities to include new aluminum passenger car programs in the Czech Republic, the US and Brazil.

Employees – As of the end of 2018, the number of employees in the division totaled 5,944 full-time equivalents, 185 more than at the end of the previous year. The workforce of the Small Bore Pistons business unit increased in the piston companies in Brazil, the Czech Republic and Mexico in particular, while the closure of the French plant led to a drop. In the Bearings business unit, the number of employees at the 2018 reporting date was higher than in the previous year, particularly in Germany and Mexico, owing to growth.

Research and development – The Hardparts division's expenses for research and development amounted to €21 million after deduction of R&D revenue (previous year: €24 million), representing a share of sales of 2.1% (previous year: 2.5%). Worldwide, 274 employees (previous year: 291 employees) were employed in research and development as of the end of 2018.

The Hardparts division's development focus included the further optimization of our components and systems for both automotive and industrial combustion engines. A friction-optimized piston system has been presented for trucks, for example, consisting of pistons and rings with a revised design and innovative coatings, which will help to economize further on fuel. In plain bearings business, a new family of materials has been developed from polymer bearings, which is specifically tailored to the requirements of hybrid vehicles.

In parallel, we stepped up development activities for new products and market segments that are independent of the combustion engine and whose share in sales is increasing continuously. In automotive business, activities with aluminum structural components and components for electric drives were further expanded systematically, also including additional production steps.

In industrial business, castings business moved into infrastructure components for the first time. Business with plain bearings was further expanded with adjusted material and product solutions. Infrastructure is also playing an increasingly important role here, for example the infrastructure used to generate renewable energies. As part of the "Invent25+" project, two concrete projects for innovation outside the established product range were developed to the point where a decision could be made.

Aftermarket division

Key figures

		2018	2017
Sales	€ million	367	359
Operating result	€ million	36	33
Operating margin	in %	9.8	9.2
Capital expenditure	€ million	6	4
Employees (Dec. 31)	Capacity	833	817

Sales – The Aftermarket division increased its sales by €8 million or 2.2% year-on-year to €367 million in 2018. Adjusted for negative currency effects, growth came to 4.6%. In the Independent Aftermarket (IAM) and Original Equipment Supplier (OES) entities, products of the Group's own Pierburg brand were responsible for growth. Strong demand and an expanded product program boosted sales in OES business. From a geographical perspective, the business performance of the European and North and South American sales regions particularly stood out. By contrast, business with customers in the Near and Middle East and Africa was adversely affected by crises and trade barriers, leading to a decline in sales in these regions.

Operating earnings – The Aftermarket division's operating earnings amounted to €36 million in 2018, up 9.1% year-on-year. Business in Eastern Europe and South America recorded an improvement in the quality of profit contributions, while the relative profit contributions of business in Western and Central Europe remained at the same level as in the previous year owing to the market. Operational development of the two production companies in Italy and the Czech Republic also contributed to the improvement in the result. In contrast, the sharp decline in the Turkish lira had a negative impact on results. Overall, improvements in earnings prevailed, causing the division's operating margin to rise to 9.8%, compared with 9.2% in the previous year.

Capital expenditure – At €6 million in 2018, investment by the Aftermarket division was higher than in the previous year (+€2 million). Investment in 2018 related to the expansion of the automatic small parts store at the Neuenstadt site, machinery, equipment and tools in the production plants as well as suppliers' tools, warehouse equipment and software.

Employees – The companies in the Aftermarket division employed 833 people as of December 31, 2018, compared with 817 as of the end of the previous year. At 2.2%, the increase in the number of employees was slightly lower than the growth in sales. The management company plus the central warehouse in Germany and the company in Brazil reported a sales-related increase in employees. The ramp-up of production at the Czech production company also resulted in an increase in the number of employees.

Economic report
Business performance of Rheinmetall Automotive

Joint ventures with Chinese partners

Sales – Sales of the five joint venture companies increased by 3.2% year-on-year, or 5.7% adjusted for currency effects, to €872 million in 2018. By comparison, production of passenger cars and light-duty commercial vehicles in China fell by 3.7%, according to figures from IHS Markit from February 2019.

The company Kolbenschmidt Pierburg Shanghai Nonferrous Components Co., Ltd., which mainly produces engine blocks and cylinder heads, exceeded the previous year's sales in 2018, while Kolbenschmidt Huayu Pistons Co., Ltd. (formerly Kolbenschmidt Shanghai Pistons Co., Ltd.), which produces small-bore pistons, recorded a drop in sales. Pierburg Huayu Pump Technology Co., Ltd. can look back on a successful year, having increased sales by 50% compared with 2017. The company Pierburg Yinlun Emission Technology (Shanghai) Co., Ltd. reported no sales as yet for 2018.

KS HUAYU AluTech Group generated sales of €321 million in 2018, compared with €318 million in the previous year (+0.9%).

Key figures € million

	Joint Ventures in China		KS HUAYU AluTech Group Germany	
100%-Basis	2018	2017	2018	2017
Sales	872	845	321	318
Net income	43	49	11	0
Net income (in % of sales)	4.9	5.8	3.4	0

Net income – Earnings after taxes of the joint ventures in China totaled €43 million, down 12% year-on-year. While earnings of Kolbenschmidt Pierburg Shanghai Nonferrous Components Co., Ltd. improved slightly owing to sales, start-up costs at both Kolbenschmidt Huayu Pistons Co., Ltd. at the new site in Chongqing and at Pierburg Yinlun Emission Technology (Shanghai) Co., Ltd. led to lower earnings than in the previous year. The company Pierburg Huayu Pump Technology Co., Ltd. was unable to deliver a higher contribution to income despite strong sales growth, owing to increased development costs in connection with the acquisition of new projects and additional costs for expansion of the site in preparation for further growth in sales.

KS HUAYU AluTech Group posted earnings after taxes of €11 million in 2018, having merely broken even in the previous year. The start-up problems with new products that had negatively affected the previous year's earnings were largely overcome in the year under review.

Deliveries of parts for electric vehicles in China – Together with its Chinese joint venture partner HUAYU Automotive Systems (HASCO) Rheinmetall Automotive opened another plant in China measuring approximately 16,000 square meters in July 2018. Along with aluminum cylinder heads, the plant will produce housings for electric vehicle engines for the Chinese market. This is the first time that the sophisticated, high-quality low-pressure casting process will be used in one of our joint ventures with HASCO. The new site will lay the foundations to allow us to participate in a rapidly expanding and sustainable market segment within the field of mobility. At the same time, we are playing an active role in the further expansion of electromobility in China.

KEY FACTS RHEINMETALL DEFENCE

3,221
SALES € MILLION

254
OPERATING RESULT € MILLION

101
CAPITAL EXPENDITURE € MILLION

11,832
EMPLOYEES

8.6
ORDER BACKLOG € BILLION

4.4
R&D INTENSITY %

Economic report
Business performance of Rheinmetall Defence

Rheinmetall Defence achieves sales growth of 6.1%

Sales in the Defence sector amounted to €3,221 million in the period under review, up €185 million or 6.1% compared with the previous year's figure of €3,036 million. When adjusted for negative currency effects, growth was 7.9%. Among other factors, sales growth was due to an increase in deliveries of trucks for the major Land 121 project with an Australian customer and to the fact that series production was being utilized to full capacity for the Puma infantry fighting vehicle for the German armed forces. In addition, the start-up of the major project Future Soldier System with a German customer contributed to a significant increase in sales in the Electronic Solutions division. The Weapon and Ammunition division, in contrast, suffered a year-on-year drop in sales of 10.1% or €119 million in 2018, owing to the loss of trading sales.

In addition to the German market (34.6%; previous year: 28.6%), sales were mainly generated in the regions of other European countries (18.5%; previous year: 17.4%), followed by the Middle East and Asia (20.0%; previous year: 21.5%), Australia/Oceania (14.8%; previous year: 13.2%) and North America (4.6%; previous year: 6.1%). Other regions accounted for 7.5% of sales (previous year: 13.2%).

Sales € million

	2018	2017
Rheinmetall Defence	**3,221**	**3,036**
Vehicle Systems	1,568	1,480
Weapon and Ammunition	1,056	1,175
Electronic Solutions	839	691
Others/consolidation	(242)	(310)

Order intake at record level

Rheinmetall Defence acquired orders worth €5,565 million in the period under review, compared with €2,963 million in the previous year. This represents an increase of €2,602 million or 87.8% against the previous year. Order intake was heavily influenced by the acquisition of the major project Land 400 Phase 2 with the Australian procurement authority. The book-to-bill ratio was 1.7 in 2018 (previous year: 0.98). The individual divisions of the Defence sector likewise demonstrated their future growth potential with a respective book-to-bill ratio of over 1.

Order intake € million

	2018	2017
Rheinmetall Defence	**5,565**	**2,963**
Vehicle Systems	3,616	941
Weapon and Ammunition	1,559	1,089
Electronic Solutions	1,060	1,078
Others/consolidation	(670)	(145)

Order backlog of €8.6 billion

The order backlog as at December 31, 2018 was €8,577 million. This represents an increase of €2,161 million or 33.7% compared with the previous year's figure of €6,416 million. Negative currency effects of €174 million affected the figures for the year under review. The largest single order in the order backlog was the Land 400 Phase 2 program that was acquired in 2018. The Puma infantry fighting vehicle programs for Germany, which are in the process of being delivered, along with the Australian truck program Land 121 (Phase 3b) and its extension Land 121 (Phase 5b) also represent a significant portion of the order backlog.

Order backlog € million

	2018	2017
Rheinmetall Defence	**8,577**	**6,416**
Vehicle Systems	5,030	3,021
Weapon and Ammunition	2,122	1,692
Electronic Solutions	2,117	1,914
Others/consolidation	(692)	(211)

Significant increase in operating earnings

Operating earnings (EBIT before special items) amounted to €254 million in fiscal 2018 after €174 million in the previous year. This represents an increase of 46.0%. The operating margin rose by 2.2 percentage points from 5.7% to 7.9%.

Operating result € million

	2018	2017
Rheinmetall Defence	**254**	**174**
Vehicle Systems	108	53
Weapon and Ammunition	121	117
Electronic Solutions	47	20
Others/consolidation	(22)	(16)

This significant improvement in results was achieved thanks to the positive performance of the Electronic Solutions and Vehicle Systems divisions in particular. Both divisions increased their operating earnings by more than 100% year-on-year, which was due above all to improved utilization of capacity and organic growth in both areas.

2018 was adversely affected by non-recurring effects totaling €7 million as a result of restructuring expenses in the Electronic Solutions division, resulting in EBIT of €247 million in the Defence sector in the reporting period.

Capital expenditure

In 2018, Rheinmetall Defence invested a total of €101 million (previous year: €89 million) in property, plant and equipment, intangible assets and rights of use from leases in accordance with IFRS 16. €15 million related to rights of use in accordance with IFRS 16. IFRS 16 was applied for the first time in 2018; the previous year's figures have not been adjusted. The investment ratio as the ratio of capital expenditure to sales was 3.1%, up slightly on the previous year (2.9%).

Economic report
Business performance of Rheinmetall Defence

€4 million (previous year: €11 million) of the capital expenditure volume related to capitalized development costs from ongoing key technology projects. In addition to the development of new and further technologies, capital expenditure focused primarily on the development, expansion and modernization of production capacity, production facilities and sites.

Capital expenditure € million

	2018	2017
Rheinmetall Defence	**101**	**89**
Vehicle Systems	23	20
Weapon and Ammunition	54	46
Electronic Solutions	24	22
Others/consolidation	–	1

Employees

The Defence sector employed 10,948 people as of December 31, 2018. The comparable figure for the previous year was 10,251 employees. While the Weapon and Ammunition and Vehicle Systems divisions recorded an increase in personnel of 9.4% and 9.2% respectively year-on-year, the number of employees in the Electronic Solutions division increased only moderately by 0.4%, meaning that employee capacity at Rheinmetall Defence grew by 6.8% in total.

Employees Capacity

	2018	2017
Rheinmetall Defence	**10,948**	**10,251**
Vehicle Systems	3,258	2,983
Weapon and Ammunition	4,753	4,343
Electronic Solutions	2,856	2,845
Others/consolidation	81	80

Research and development

Rheinmetall Defence specializes in the development and production of components and systems for protecting people, vehicles, aircraft, ships and assets and, in its role as an equipment supplier to the German armed forces, NATO and other responsible nations, helps to protect armed forces involved in military operations. The Defence sector is committed to capability-oriented innovation and is continuously setting new technological standards: from vehicle, protection and weapon systems, through infantry equipment and air defence, to the networking of function sequences and in the areas of simulation and training. It systematically gears its research and development activities to the main areas of national capability stipulated by the German armed forces and to mission requirements profiles of international armed forces facing the growing challenges and complex threats of the 21st century. They are often fighting at very great risk to preserve security and freedom. In addition to multinational deployments to prevent crises and deal with conflicts, attention is increasingly focusing on the tasks of national and alliance defence once more. Modern equipment that uses cutting edge technology and is adequate to the task can lead to vital improvements in ability to lead, stamina, mobility, effectiveness and ability to survive in the deployment scenarios faced by soldiers.

Research and development € million

	2018	2017
Rheinmetall Defence	**143**	**109**
Vehicle Systems	13	18
Weapon and Ammunition	74	51
Electronic Solutions	56	40

In fiscal 2018, Rheinmetall Defence invested €143 million (previous year: €109 million) in research and development projects. The research and development ratio as the ratio of expenses to sales increased by 0.8 percentage points to 4.4% (previous year: 3.6%). €68 million (previous year: €36 million) of development expenses was passed on to customers.

There were 2,314 employees in total in the research and development departments of the Defence companies as of December 31, 2018 (previous year: 2,243).

Employees in research and development Capacity

	2018	2017
Rheinmetall Defence	**2,314**	**2,243**
Vehicle Systems	614	526
Weapon and Ammunition	623	605
Electronic Solutions	1,077	1,112

Vehicle Systems division

Key figures

		2018	2017
Sales	€ million	1,568	1,480
Order intake	€ million	3,616	941
Order backlog (Dec. 31)	€ million	5,030	3,021
Operating result	€ million	108	53
Operating margin	in %	6.9	3.6
Capital expenditure	€ million	23	20
Employees (Dec. 31)	Capacity	3,258	2,983

Sales – The Vehicle Systems division reported an increase in sales of 5.9% to €1,568 million in 2018. The sales volume achieved was positively influenced by the ramp-up of major orders and the extension of the Australian truck program. Since the order of a total of 2,540 armored and non-armored medium to heavy military logistics vehicles for the Australian land forces in 2013, a total of 1,799 vehicles have been supplied to date, 735 of which were delivered in fiscal 2018. As in the previous year, 33 Puma infantry fighting vehicles were delivered to the German armed forces, which thus contributed once again to the division’s high sales. Another major project in 2018 related to the supply of kits to manufacture Fuchs wheeled armored vehicles to Algeria.

Economic report
Business performance of Rheinmetall Defence

Order intake – The Vehicle Systems division's incoming orders amounted to €3,616 million in the year under review after €941 million in the previous year, and mainly comprised three major orders. These included the Land 400 project in Australia involving the supply of 211 Boxer 8x8 wheeled armored vehicles with twelve specific mission modules. This order has a volume of around €2.1 billion, plus a support contract worth €110 million. Production is starting in Germany and will gradually be transferred to Australia. The Australian armed forces also placed a follow-up order with the Vehicle Systems division for the Land 121 truck modernization program, which is due to expire in 2020. With the extension of the program, an additional 1,044 vehicles will be supplied to Australia by 2024. The order is worth around €430 million. A further follow-up order for the major "Fuchs 2" project, which was acquired in 2013, was booked with an international customer. This relates to the supply of kits to manufacture Fuchs wheeled armored vehicles and is worth a triple-digit figure in millions of euros.

Operating result – The Vehicle Systems division improved its operating result by €55 million from €53 million in fiscal 2017 to €108 million in the year under review. The operating margin thus rose from 3.6% in 2017 to 6.9% in fiscal 2018. The 2018 year under review started with delays in deliveries resulting from capacity bottlenecks at various suppliers. As the fiscal year progressed, a higher proportion of more profitable vehicle categories in addition to improved capacity utilization and a reduced cost base had a positive impact on the trend in earnings in the logistics vehicle segment. Added to this were positive effects from updated project valuations in the course of regular cost reviews. A negative effect resulted in 2018 from the special write-down on a self-financed and capitalized development project.

Capital expenditure – The Vehicle Systems division invested a total of €23 million in 2018, compared with €20 million in the previous year. In the area of tactical vehicles, capital expenditure mainly focused on prototypes of the Lynx KF 41 infantry fighting vehicle, which were showcased for the first time at Eurosatory 2018. The Lynx KF 41 is part of a family of modular Rheinmetall vehicles that is characterized by a large number of standardized parts; this allows the vehicle classes to be configured for a variety of purposes. In addition to deployment as an infantry fighting vehicle, Lynx can also be deployed as an armored personnel carrier, a command vehicle, an armored recovery vehicle or an ambulance. The fact that the basic vehicles are the same also reduces lifecycle costs for the customer. The prototype is fitted with the Rheinmetall Lance 2.0 turret, which offers better protection against kinetic threats and splinters and thus improves ability to survive in combat situations. Another area on which capital expenditure focused was development and testing of a turret and protection demonstrator for the modernization and fitness program for the Challenger 2 British battle tank. With regard to logistics vehicles, the focus was on development services for the further militarization of trucks. Further investments related in particular to the replacement of machinery, infrastructure and buildings at the Vienna site.

Employees – The Vehicle Systems division employed 3,258 people as of the end of the fiscal year (previous year: 2,983).

Research and development – NATO has been pursuing the development of a NATO generic vehicle architecture (NGVA) for military land vehicles for some years. An international standard not only ensures that different manufacturers' system components are highly compatible, but also that there is general interoperability for example in communications and force. In February 2018, NATO published Standardization Agreement (STANAG) No. 4754. Rheinmetall will play a significant part in the further development of this agreement. One of the basic principles of such a system architecture is that components, e.g. reconnaissance sensors for various countries, should be interchangeable in a vehicle (plug and play). Proof of this functionality was prepared in-house in the year under review and will be demonstrated in extensive tests in the first few months of 2019.

The first concept studies and research work commenced with the public-sector customer in 2016 for a new connected combat system (Main Ground Combat System – MGCS), which is currently intended to replace the Leopard 2 battle tank in the mid-2030s, continued in the year under review. However, MGCS goes far beyond a purely linear continuation of the current capabilities of the Leopard 2, with its innovative approach and modern technologies. MGCS will be an assertive and superior system that is fit for the future and will have a direct impact on the ground against an opponent of equal strength. Another aim is to allow unmanned and manned systems to work together. Such basic studies, which also take into account, for example, ergonomic, psychological and physiological factors such as stress, overexertion and tiredness of soldiers, explore the basic technical feasibility of this planned combat system and also look at security and approval issues. The aim, moreover, is to identify and evaluate possibilities for the further development of technologies that are already in use as well as resulting trends. The public-sector customer thus receives support with the specification of requirements and the preparation of a technical requirements specification for MGCS.

Improvised explosive devices (IEDs) pose a major threat to soldiers on operations as a means of asymmetric warfare. Rheinmetall Defence offers the route-clearance system to open transport routes and keep them open by reconnoitering and clearing explosive ordinance such as mines and remotely triggered booby traps. It is highly efficient in locating explosive devices in the ground and consequently makes it far safer to travel on frequently used routes such as when traveling in convoy. In carrying out this dangerous mission, the remote control Wiesel detector vehicle, which has a dual sensor with integrated ground penetrating radar and a metal detector, has the task of detecting and exposing mines, explosive devices and remotely controlled bombs on the road or segment of the route being searched. To counter the increasing threat of IEDs more effectively and to be equipped even more effectively and efficiently for future deployments, the dual sensor was further optimized in the last fiscal year using the latest available technologies. Furthermore, the use of an additional sensor for detecting wires that are used to detonate IEDs, for example, is being investigated with the aim of increasing the likelihood of discovering IEDs.

Weapon and Ammunition division

Key figures

		2018	2017
Sales	€ million	1,056	1,175
Order intake	€ million	1,559	1,089
Order backlog (Dec. 31)	€ million	2,122	1,692
Operating result	€ million	121	117
Operating margin	in %	11.5	10.0
Capital expenditure	€ million	54	46
Employees (Dec. 31)	Capacity	4,753	4,343

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Business performance of Rheinmetall Defence

Sales – The Weapon and Ammunition division achieved sales of €1,056 million in the year under review (previous year: €1,175 million). This represents a decline of €119 million. Both delays in forming a government and a lack of export licenses adversely affected the processing of national and international orders in the year under review. The previous year's sales had been positively influenced by the last sales tranche of a transaction with an international customer (previous year: €113 million). Negative currency effects of €12 million also had an impact on the sales performance. Adjusted for these effects, the Weapon and Ammunition division recorded an increase in its own value added despite the drop in sales. Productivity increased, particularly in the international plants, which was thus also reflected in an improved operating margin. As well as production of ammunition, a significant portion of sales in the year under review was generated with production of armored and non-armored cabins for intra-Group delivery to the Vehicle Systems division.

Order intake – At €1,559 million, order intake in the Weapon and Ammunition division was up €470 million or 43.2% on the previous year's figure of €1,089 million. The German public-sector customer placed orders worth €200 million with the division in 2018, mainly for medium and large-caliber ammunition, compared with €255 million in the previous year. One large international individual order was a follow-up order for tank and artillery ammunition and weapon systems for a customer in the MENA region. Each business unit within the Weapon and Ammunition division increased its order intake compared with the previous year. The sites outside Germany performed particularly impressively in the context of Rheinmetall's internationalization strategy.

Operating earnings – The Weapon and Ammunition division's operating earnings increased by €4 million in the fiscal year to €121 million (previous year: €117 million). The operating margin improved to 11.5% after 10.0% in the previous year.

Capital expenditure – Funds totaling €54 million were invested in the Weapon and Ammunition division (previous year: €46 million). At the site in Domusnovas, Italy, the construction of a standalone filling system for polymer-bonded explosives (PBX) and the expansion of mixing and filling capacity, which began in 2016, were continued. The total volume of capital expenditure for this state-of-the-art PBX facility will peak in 2019, depending on the circumstances. In Boksburg, South Africa, the expansion and rationalization program spanning several years was continued with investments in production and infrastructure facilities. One investment particularly worth mentioning was in a modern hydraulic forging press including an induction facility and robots, which will support lubrication and handling. As well as increasing production capacity, the new press will significantly shorten lead times for the customer. A further investment was made in an extensive feasibility study into the construction of a new, state-of-the-art production facility for multi-purpose nitrate explosives and a related pilot facility at the site in Wellington, South Africa. Other investments related to functional traffic areas at the Unterlüss site.

Employees – The Weapon and Ammunition division employed 4,753 people as of the end of the fiscal year (previous year: 4,343).

Research and development – In the last few years, threat scenarios in Germany have fundamentally changed in the area of internal security and the combating of crime and terrorism. Attacks may occur anywhere and at any time in our country. Rheinmetall Defence is a longstanding partner to the armed forces and in the past has supplied them with plates that can be inserted into protective vests for ballistic protection, among other products. However, the increased security meant that individual police officers' mobility was reduced, owing to the additional weight. Wearing the protective vests could therefore become a security risk in extremely dangerous situations such as terrorist attacks or shooting sprees. Demand for lighter protective plates increased. Extensive research led to the conclusion that no materials or technologies were available on the market that could improve the technical equipment. The first preliminary tests therefore began in 2017. The current protective solutions were then subjected to a review in the reporting year, from the materials to all procedures and the manufacturing processes. Intensive studies of the ballistic structure of the materials used to date revealed potential for optimization. Changes in the number, type and composition of material components and adjustments to the manufacturing process led to a significant reduction in weight and a significant increase in the ballistic performance of the inserted plates, which now offer armed forces maximum protection in complex life-threatening deployment scenarios while having a low weight. These very light inserts can even withstand bombardment from assault rifles of the AK-47 type.

In the field of external security, the tasks faced by the German armed forces and NATO have shifted to focus again on national and alliance defence. To maintain or even increase the assertiveness of NATO systems against the now improved protective measures employed by potential opponents, we concentrated on the following issues, among others, in the year under review.

Based on a large number of theoretical analyses, initial shelling has been carried out with a newly developed tank weapon with a caliber of 120 mm+, to test its performance and penetration power in a real experiment and enable a comparison with forecasts from simulations.

Within 18 months, Rheinmetall Defence developed a new externally driven 35 mm medium-caliber weapon for land vehicles and conducted initial shelling campaigns. Compared with the 30 mm medium-caliber weapons introduced in the armed forces so far, the first systems produced have already shown significant advantages in terms of the weight of the weapons and target effects, resulting in a significant increase in combat effectiveness. A complete family of ammunition can already be offered for this new medium-caliber weapon, as the product portfolio already includes two 35 mm air defence weapons in serial production.

In the past fiscal year, Rheinmetall Defence developed and qualified technically redesigned delay compositions in the field of military pyrotechnics, which do not take effect directly, but rather with a delayed reaction time, upon contact with the target. The challenge lies in the fact that delay compositions must burn down evenly at a defined speed. Lead, chromium, nickel and barium compounds are avoided in the mixture of the material elements used in the newly developed delay compositions. As a result, the chemical composition of the delay composition complies with the EU chemicals regulation REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals). This means that Rheinmetall Defence is one of a few companies that can produce and market ammunition without a special license.

Economic report
Business performance of Rheinmetall Defence

Electronic Solutions division

Key figures

		2018	2017
Sales	€ million	839	691
Order intake	€ million	1,060	1,078
Order backlog (Dec. 31)	€ million	2,117	1,914
Operating result	€ million	47	20
Operating margin	in %	5.6	2.9
Capital expenditure	€ million	24	22
Employees (Dec. 31)	Capacity	2,856	2,845

Sales – The Electronic Solutions division reported an increase in sales of 21.4% to €839 million in 2018. This increase was largely influenced by the start-up of the major project "Future Soldier System" for the German customer, relating to the supply of 68 platoon systems of the cutting-edge infantry soldier system "Future Soldier System – Expanded System" (IdZ-ES). IdZ-ES integrates the "complete infantry system" in network-enabled operations.

Significant sales were generated with the modernization of an existing air defence system for a customer in the MENA region in 2018. Notable Air Defence sales were also achieved with an order received in 2018 for an international customer. Furthermore, sales from the delivery of 35 mm Skyguard 1 fire units increased.

Additional significant sales in 2018 resulted from the operation of a field exercise center in Letzlingen, Altmark, and the construction of a modern training center in Mexico, where operating staff for extraction and production platforms belonging to the Mexican state-owned oil and gas conglomerate PEMEX are to receive training and further development.

Order intake – Electronic Solutions reported incoming orders of €1,060 million in fiscal 2018, compared with €1,078 million in 2017. Order intake was influenced to a large extent by the share in the major project Land 400 Phase 2 attributable to the Electronic Solutions division.

Two major military air defence orders were also acquired.

Operating result – At €47 million, the Electronic Solutions division's operating earnings in 2018 were up €27 million on the figure for the previous year of €20 million. The operating margin rose to 5.6% (previous year: 2.9%). The growth in earnings is the result essentially of the improved sales performance over the previous year and increased measures to further optimize costs.

Capital expenditure – The total capital expenditure volume of the Electronic Solutions division amounted to €24 million in the period under review (previous year: €22 million). As well as the development and continuation of new technological products and systems, the focus was on continuation of modernization measures. As part of the offer phase for the modernization program for the British battle tank Challenger 2, relating to the elimination of obsolescence and improvement of capability, development focused on the manufacture of a central turret control unit and a crew terminal, among other areas. As in previous years, the focus of activities at the Rome site was on the further development of airspace radar technology to expand the product range. As regards capital expenditure on modernization and expansion, at the Bremen site work on upgrading fire protection technology for the simulation technology development, testing and production area, which began in 2016, continued. Implementation of this comprehensive fire protection concept, which includes the installation of extensive sprinkler systems in addition to lightning protection, the installation of fire protection walls and doors as well as the installation of escape corridors and escape tunnels, will be continued until 2019.

Employees – The Electronic Solutions division employed 2,856 people as of the end of the fiscal year (previous year: 2,845).

Research and development – Within the context of self-financed research and development activities, developers and technicians in the Electronic Solutions division concentrated in fiscal 2018 on digital networking within and between reconnaissance and weapon systems for land-based missions, to ensure reliable, efficient and secure tactical communications down to the level of individual soldiers. One component in this is generic and network-oriented architecture for video and data communication in land vehicles, which makes it possible to access all available sensors and effectors from each operator workstation via a standardized data distribution service. Corresponding applications in programmable operator terminals now allow the mission-specific configuration of display options and user interface for each workstation, in accordance with different levels and roles.

Research and development work in the field of Air Defence and Radar Systems focused on the further development and automation of the 35 mm air defence weapons and the development of the company’s own active electronically scanning antenna search radars (AESA). With the shift away from modular tracking sensors and the fire control of the recording and tracking unit towards the effector/weapon unit, a further goal was achieved in improving system performance, including multiple target capability and combating swarms while reducing the burden on system operators at the same time. These development steps lay the foundations for future Air Defence projects. The AESA technology can be used to develop a variety of radars in different sizes for a large number of applications. The availability of a state-of-the-art radar system for use in air defence has top priority. The system will be used for example as a sensor for various effector vehicles in the German program for close-range and very close-range defence.

Economic report
Financing

Principles and aims of financial management

Rheinmetall AG essentially has central responsibility for the financing of the Rheinmetall Group. The chief aim in financial management is to ensure that liquidity is available at all times.

The Group's global cash management system enables excess liquidity at Group companies to be pooled centrally at Rheinmetall AG and made available directly to other Group companies where liquidity is required. As well as optimizing existing internal financial resources, the Group also ensures through the agreement of external credit lines with banks or access to the money and capital markets that sufficient financial scope is available at all times to process operating activities. At the same time, it is ensured when determining the scale of these credit lines that adequate reserves are calculated for potential developments that are not covered in the rolling twelve-month forecast and three-year corporate planning.

Rheinmetall's financial management also aims to make a positive contribution to the Group's enterprise value and profitability. Financial risks are limited through a central recording, assessment and management system. This focuses mainly on currency, interest rate, price, counterparty and country risks. Potentially negative effects are mitigated as far as possible through corresponding contractual structures. The remaining risks are reduced as much as possible with the aid of derivative and original financial instruments. The aim of increasing enterprise value is achieved through efficient implementation of financial measures and optimization of liquidity, capital structure and contractual conditions, among other measures.

One of the most important principles of financial management is financial independence. It is ensured that Rheinmetall AG has a well-diversified portfolio of financial partners in which all the services needed to settle operating activities are available. Furthermore, dependence on individual service providers or lenders is limited through counterparty limits, which enable a counterparty to be replaced at any time.

All financial transactions are geared exclusively towards requirements arising from the underlying operating business. Transactions may not be used for speculative purposes. For this reason and to ensure compliance with legal and internal guidelines, transactions are carried out in accordance with the dual-control principle, keeping implementation, processing and checking separate. The principles also include guaranteeing data security, as well as documentation of transactions to ensure traceability.

Financing in the Rheinmetall Group

The financing of Rheinmetall takes place via a mix of existing liquidity as well as short-term and long-term financing instruments to guarantee access to liquidity at any time on a sustained basis. When selecting financing instruments, it is ensured that they are sufficiently diversified with regard to their sources, terms and counterparties. Promissory note loans with various terms totaling €300 million and the development loan from the European Investment Bank (EIB) for €250 million represent the key elements of long-term financing. While the EIB loan is to be repaid with a bullet repayment in 2023, the total volume of promissory note loans comprises several individual tranches with staged maturities between 2019 and 2025. Maturities are concentrated in 2022, at €121.5 million. There are also real estate loans and development loans of €75 million.

Rheinmetall AG has bilateral credit lines worth €3.3 billion. At the end of the reporting period, the latter were utilized in the amount of €1.1 billion for guarantees and €43 million in cash. As of December 31, 2018, neither the commercial paper program nor the syndicated credit facility were being utilized. Rheinmetall also regularly uses its asset-backed securities (ABS) program, which has been in place since 2004 and allows subsidiaries in both corporate sectors in five European countries to sell trade receivables without recourse, in order to reduce customer default risk and optimize the liquidity position. The volume of receivables sold under the ABS program was €169 million as of the end of the fiscal year.

Financing instruments € million

	Term	Nominal	Financing source
Promissory notes	2019-2025	300	International financial institutions
Development loans Research and development	2017-2023	250	European Investment Bank (EIB)
Commercial paper (CP)	Indefinite	500	Money market investors
Syndicated loan	2022		13 banks (back-up line for the commercial paper program)
Real-estate financing and development loans	2019-2026	75	Banks
Bilateral credit facilities (Cash and guarantee credit)	2018-2019	3,346	Banks and insurance companies
Asset-backed securities program	2020	170	Money market investors and banks

Financing activities in 2018

The essence of the financing strategy was to diversify the individual financing instruments more widely in terms of maturity, volume and lender than in previous years, while simultaneously optimizing interest on debt capital. In the first and second quarter of 2018, promissory note loans totaling €73 million, maturing up to 2025, were raised from international banks. €11 million of this sum related to transactions to replace existing promissory note loans and €5 million to the replacement of variable-interest promissory note loans that had been terminated. Overall, a lower interest rate and a longer term were achieved on average for the entire promissory note portfolio. The existing mix of promissory note, bank and development loans guarantees Rheinmetall, in conjunction with the short-term financing options of the commercial paper market and the good liquidity position, the security and flexibility it aspires to for the next few years. With regard to the financing of liabilities arising from the occupational pension scheme, Rheinmetall continued its strategy of gradually building up trust assets to service obligations in Germany and endowed a further tranche of €40 million to the total amount of €100 million in January 2018.

Rheinmetall’s rating

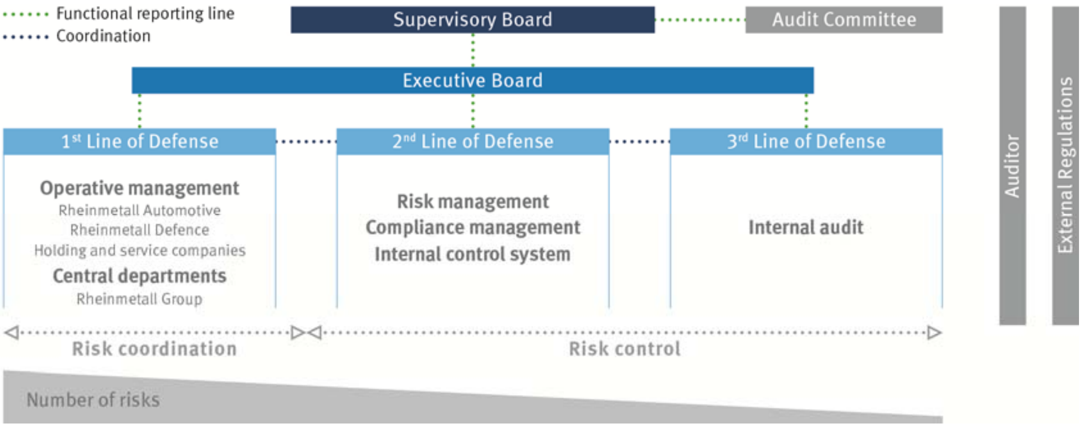
The rating agency Moody’s has assessed the Rheinmetall Group’s credit rating since 2000. It evaluated Rheinmetall twice within eight months and upgraded the company’s rating to ‘Baa3 stable’ on April 27, 2018. That means that we achieved an investment grade rating again after about four and a half years. In its decision, Moody’s acknowledged our conservative financial policy, continuous debt reduction and significant progress in terms of operating performance in particular. The rating agency expects us to further improve operating earnings in future on the basis of sustainable and prosperous Defence business and the successful strengthening of the Automotive activities.

Economic report
Risks and opportunities

Risk management system

The standardized risk management system that has been introduced throughout the Group for the early recognition of material risks and risks that could jeopardize the continued existence of the Group is based on risk policy principles stipulated by the Executive Board of Rheinmetall AG, which are geared towards financial resources and strategic and operational planning and which specify guidelines, responsibilities and the treatment and documentation of identified risks, as well as thresholds. This ensures that corporate decisions and business activities are monitored on an ongoing basis and are actively managed, and enables any necessary action to be determined as required in order to comply with legal requirements. In order to guarantee a functional and effective control and monitoring system, Rheinmetall follows the approach of the three lines of defence model when it comes to dealing with the risks in the company.

Three lines of defence model



The first line of defence lies with the management of the operating activities, which is responsible for recording, assessing and managing the risks that arise there. The second line of defence comprises the risk management, the compliance management and the internal control system. Internal Audit is the third line of defence and acts as the independent control organ of the Executive Board of Rheinmetall AG.

In order to identify, analyze and assess potential risks, the risk inventory is revised once a year during corporate planning. This contains all the most important risks potentially impacting the corporate targets and sub-targets, probabilities of occurrence, the potential level of damage, early warning indicators, responsibilities and suitable countermeasures. On this basis, the operating units and central functional departments record, process and communicate the risks associated with their current business situation and future development each month in accordance with prescribed standardized parameters, along with the probabilities of occurrence and financial impact of these risks.

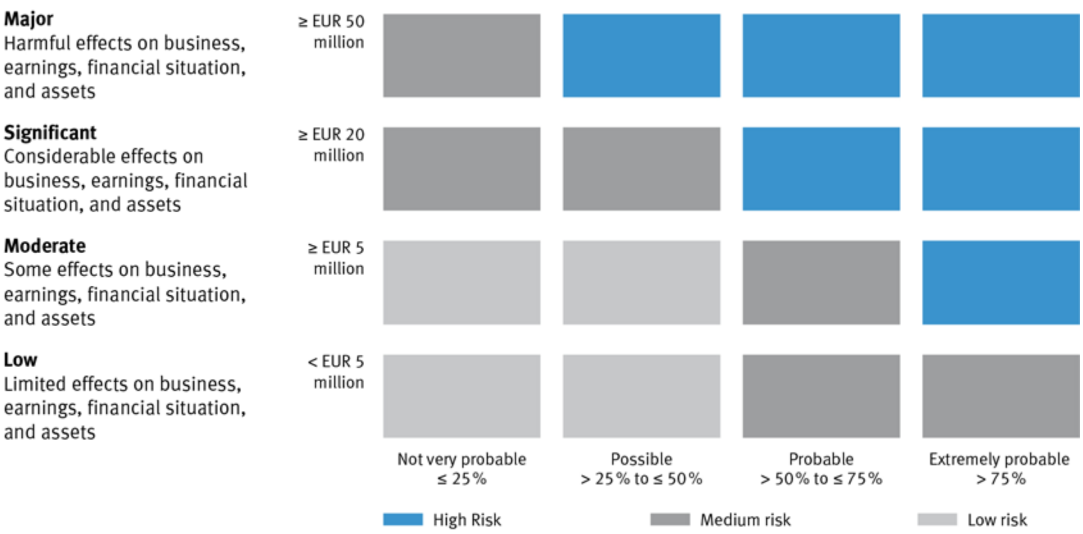
These detailed reports, which are an integral part of the integrated planning, management and information process, inform the Executive Board and managers of the status of and significant changes to important ventures subject to reporting requirements, and the status of countermeasures that have already been introduced. The measures introduced to ensure appropriate management of identified risks are monitored on an ongoing basis and adjusted to a new risk assessment where necessary. If necessary, adequate additional measures are taken in order to further limit and reduce identified potential risks. The Executive Board of Rheinmetall AG is regularly informed by Group Controlling of developments in the Rheinmetall Group's overall risk situation. Unexpected material risks and undesirable developments with significant consequences are reported to the Executive Board on an ad hoc basis.

Material risk areas

Overview of key corporate risks

Risk type	Probability of occurrence	Level of impact
Strategic risks		
Macroeconomic risks	Possible	Significant
Market risks	Possible	Significant
Competition risks	Possible	Moderate
Operational risks		
Technology and development risks	Possible	Significant
Investment risks	Possible	Significant
Production risks	Possible	Significant
Procurement risks	Not very likely	Significant
Project risks	Possible	Significant
Quality risks	Possible	Significant
IT risks	Possible	Significant
Personnel risks	Not very likely	Moderate
Pension risks	Not very likely	Low
Acquisition and integration risks	Possible	Significant
Environmental requirements	Not very likely	Moderate
Legal and compliance risks		
Legal risks	Possible	Moderate
Compliance risks	Possible	Significant
Regulatory risks	Possible	Significant
Tax risks	Not very likely	Low
Financial risks		
Credit risks	Possible	Moderate
Liquidity risks	Not very likely	Significant
Currency risks	Likely	Moderate
Interest rate risks	Not very likely	Low
Commodity price risks	Likely	Moderate

Risk classes



Economic report
Risks and opportunities

Macroeconomic risks

It is not possible to completely avoid risks that arise due to economic cycles. A deterioration in statutory, regulatory and/or general economic conditions in the sales regions can adversely impact the sales and earnings situation of the Rheinmetall Group. Geopolitical or economic crises can affect regional markets or individual industries. The consistent alignment of business towards the major economic areas in Europe, the US and Asia reduces dependence on individual customer countries, thereby distributing the risk. The diversified product portfolio of the divisions and consistent internationalization of the Automotive and Defence sectors help to ensure that temporary economic fluctuations can be offset in part by more favorable developments in other regions and markets.

Market risks

In times of advancing globalization and growing competition and market transparency, market risks are becoming more prevalent. Potential outcomes include fluctuations in prices, volumes and margins. Focusing on technologically demanding market segments, product innovations, process improvements, production and capacity adjustments and strict cost management all contribute to strengthening competitiveness in each of the company's industries and securing and building on the profitability of the Rheinmetall Group. In view of the technological progress in our industries we continue to strive to develop new markets and customer groups in the mobility and security segments. Thanks to our broad international presence, we can respond to market and demand fluctuations and balance out developments in individual regions.

Competition risks

The risk profile of Rheinmetall can also be negatively affected by the presence of new suppliers or trends towards consolidation on sales markets. Furthermore, where competition is fierce we cannot rule out the possibility of being unable to implement our margin targets.

Technology and development risks

Innovative strength is a key success factor. The future earnings situation of the Rheinmetall Group also depends on the ability to identify technological trends in good time, correctly assess their impact on operational business and promptly develop new, marketable applications, products and systems and launch them on the market. The sometimes long development lead times, continuously refined technologies and intense competition are key factors contributing to uncertainty regarding the economic success of current or future products. Misjudgments as regards future market developments or in the development of products, systems or services that are not taken up by the market as expected as well as fundamental changes in customer demand that were not foreseen or responded to adequately, increased startup costs for new products or delays in launching innovations on the market can lead to a deterioration in our competitive and economic situation.

However, intensive market and competitor monitoring and analyses, the market presence and customer proximity associated with international distribution structures as well as regular discussions with customers and suppliers make it possible for us to identify trends on the sales markets in good time and to align product strategies consistently towards new requirements.

Feasibility studies, profitability analyses, modern project management aimed at reviewing the criteria for technical and economic success, the involvement of customers in the definition, design, development and testing of new products and safeguarding our technological position through patents reduces potential R&D-specific risks such as misdevelopments and budget overruns.

Despite compliance with the processes described and the use of modern project management, monitoring, and controlling measures, the development of new products and launching these onto the market as well as changes to the existing product portfolio harbor cost risks. These exist not only in the actual design and development phase, but also during market launch, where startup costs may be higher than expected or unscheduled delays may arise. Risks can also arise following market launch due to the potential need for technical improvements, which will only come to light following use in real-life situations or through continuous operation.

Quality risks

Our quality management systems have been certified in accordance with ISO 9001 and ISO/TS 16949 for many years now. In addition, methods including Six Sigma, lean management and failure mode and effects analysis (FMEA) are used to prevent quality risks.

Investment risks

We review investment decisions carefully over several stages. Investments that exceed a defined limit are presented to the Executive Board for approval after undergoing a review. Nevertheless, unforeseen changes in general conditions can lead to higher investment costs or cause delays to facilities being commissioned.

Production risks

We counter potential production risks by applying high technical and safety standards. The availability of production plants is ensured through preventative maintenance with ongoing checks an constant modernization as well as through targeted investment. For potential damage and associated interruptions to operations or production downtime and for other conceivable loss occurrences and liability risks, insurance cover has been taken out as financially reasonable to ensure that the financial consequences of potential risks are contained or completely ruled out. Although the existing insurance cover is regularly reviewed in terms of covered risks and insured sums and adjusted if necessary, it may prove insufficient in individual cases.

Project risks

The scope and complexity of projects can entail risks in planning, calculating, implementing and processing. These include not only uncertainty in calculations, but also unexpected technical problems, underestimations of the level of complexity, project-specific additions and related cost increases, capacity and supply bottlenecks as well as quality problems with business partners or suppliers, unforeseeable developments during assembly and deferred dates of acceptance and settlement. These risks can be minimized, though not excluded altogether, through the technical expertise and longstanding project experience of the employees, professional project management, project milestones, verification levels for each project stage, comprehensive quality management measures and the appropriate formulation of contracts.

Economic report
Risks and opportunities

Acquisition and integration risks

Acquisitions, strategic alliances and joint ventures remain an important element of the Group's ongoing internationalization and growth strategy, in order to increase its market share, improve its market positions, supplement existing business or penetrate new segments. Potential companies are, according to guidelines, subjected to an analysis of opportunities and risks through standardized processes such as extensive due diligence procedures and are assessed on the basis of yield/risk considerations. When necessary, we involve external experts and consultants in the transaction processes. Furthermore, we ensure that contracts are designed in a way that is commensurate with the risk, in particular by obtaining warranties of specific properties or guarantees and by agreeing purchase price mechanisms and liability clauses or taking out appropriate insurance policies.

Following approval proceedings carried out over several stages, the Executive Board and, where the transaction volume exceeds defined value thresholds, the Supervisory Board of Rheinmetall AG decides on the acquisition project. However, it is possible that the objectives, potential synergies and cost savings that the Group is pursuing with the acquisition may not be achieved or may not be achieved to the planned extent.

The integration phase follows immediately after the acquisition has been completed. However, the integration of technologies, products, processes and employees harbors risks. The integration process could for example prove to be more difficult, time-consuming and cost-intensive than assumed. Risks can arise in connection with the activities of newly acquired companies that were either not previously known or not considered significant.

Procurement risks

Risks can arise in connection with the purchasing of raw materials, parts and components in the form of unexpected supply shortages, delays or bottlenecks in delivery, quality problems or price increases. This is countered through ongoing monitoring of the procurement markets, structured procurement concepts and the avoidance of dependence on individual suppliers. International purchasing activities, careful selection of efficient suppliers, annual supplier reviews, quality and reliability checks on suppliers, alternative suppliers and subcontractors, medium and long-term supply contracts and appropriate safety stocks also reduce potential risk. Cost escalation clauses are also agreed in contracts where possible, to minimize negative effects from increases in purchase prices to a large degree.

The new purchasing organization for non-production material (NPM), which is responsible for the whole Rheinmetall Group, started its work in January 2018. The task of the purchasing organization, which is managed by the Purchasing Council NPM, is to improve Rheinmetall's market position vis-à-vis suppliers and to achieve better purchasing conditions. This ranges from lower prices to more favorable, standardized payment and delivery conditions.

An inadequate energy supply for companies of the Rheinmetall Group under cost-efficient conditions constitutes a risk for competitive production at the sites. It is not possible to ensure complete hedging of fluctuations in the price of energy sources or to guarantee that increases in energy prices will be passed on to customers. Rising energy costs are addressed by bundling procurement volumes and through coordinated invitations to tender, long contract durations and optimization of the electricity price via the European Energy Exchange in Leipzig. Germany's energy turnaround is expected to lead to expansion of electricity grids and a significant increase in the share represented by renewable energies. We believe constantly rising electricity prices and the growing EEG levy represent a risk – a development that can jeopardize the ability of energy-intensive industrial companies, like some companies in the Automotive sector, to compete in the international marketplace.

IT risks

Information and data are exposed to a range of growing threats with regard to availability, confidentiality and integrity. The networking of sites and complex systems in organizational and IT terms entails risks. Disruptions to IT systems, IT applications and infrastructure components that are critical to operations can severely compromise the management of business and production processes and cause serious harm to the business. Networks can fail, disturbances and interruptions to operations can occur, and data can be falsified, destroyed, subject to spying or stolen as a result of program or user errors, manipulation or external influences. Potential risks relating to information technology are limited through modern IT infrastructure standards, IT security rules, IT security training and adequate precautions to protect against the loss of data, unauthorized access to data or misuse of data. Regular investment and security updates ensure that the software and hardware installed uses state-of-the-art technology. Appropriate back-up and recovery procedures are also implemented, along with virus scanners and firewalls to avert risks. The technical configuration, functional security structures and efficient operation of the IT architecture are reviewed on a regular basis with competent service providers certified to ISO 27001 and continuously improved.

Personnel risks

The achievement of our ambitious, growth-oriented corporate targets and the long-term economic success of the Rheinmetall Group, as an innovative technology company, depend to a large extent on qualified and committed employees. A shortage of managers and specialists could impact the further growth of the company, and technological advances could also be temporarily jeopardized in some circumstances. We limit potential personnel risks using various initiatives, campaigns and measures as part of our HR policy, which play a part in improving the company's reputation and in positioning Rheinmetall as an attractive employer. Losing competent employees as well as shortages and being unable to fill vacant posts adequately and/or in a timely manner could pose a risk, which is counteracted through, for example, interesting areas of responsibility, a motivating work environment, performance-related remuneration models, attractive benefits, diverse career opportunities, systematic and targeted employee development measures and individual career plans. Furthermore, we offer a variety of working time arrangements and working hour models at our German sites that support a better work and family life balance. In view of demographic change and the potential resulting skills shortage, age structure analyses are carried out at regular intervals and the results are taken into account in staff and succession planning and training activities.

Rheinmetall Automotive is faced with tough competition from other companies in attracting qualified employees. New mobility concepts and, above all, new drive concepts for cars, mainly hybridization and all-electric drive systems, will change the requirements for the available expertise in research and development as well as production. This applies equally to automotive manufacturers and their suppliers. Our companies are already discovering that it is becoming more difficult to attract engineers with specialist knowledge of electrical engineering throughout the world. Generally, this situation will get worse as the pressure to innovate in the industry as a whole will increase.

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Pension risks

The Rheinmetall Group's companies in Germany, Switzerland and other countries have awarded their employees defined benefit plans as part of company pension plans. These pension plans grant eligible staff lump sum payments or lifelong pensions, depending on how the plan is designed, which are subject to increases that are fixed, variable or linked to inflation. The development of inflation, the level of interest rates and longevity represent risks. Existing obligations under pension plans are covered by separate assets (e.g. real estate, bonds or shares) to differing degrees. The value of these pension assets is subject to risks, especially interest rate, market and share price risks. Investment strategies for pension assets take account of the maturity structure and funded status of the covered obligations, in particular.

Environmental requirements

A large amount of land owned by the Rheinmetall Group has been subject to industrial usage for decades. For this reason, it cannot be ruled out that pollution has also been generated during this time as a result of production that Rheinmetall is not yet aware of. Sufficient provisions have been recognized for necessary measures to safeguard against or clean up identified pollution. It is possible that the relevant authorities may issue regulations that require costly clean-up measures.

We counter potential environmental risks by implementing statutory environmental standards, certified environmental management systems, professional and safe storage of hazardous substances and environmentally friendly disposal of waste and hazardous substances. The tightening of environmental protection provisions and environmental standards could lead to additional unplanned costs and liability risks over which Rheinmetall would have no influence.

Legal risks

Legal risks can arise due to legal disputes with competitors, business partners or customers and as a result of changes to the legal framework in the relevant markets. When making decisions and designing business processes, the Group is not only supported by detailed advice from its own specialists but, in certain cases, also calls in renowned outside experts and specialists. Potential losses, damage and liability resulting from ordinary operations are appropriately covered by insurance policies or accounting provisions.

In March 2012, Rheinmetall Air Defence was blacklisted, in our opinion unfairly, by the Indian Ministry of Defence. In September 2012, Rheinmetall Air Defence went before the Delhi High Court to contest this order and its consequent exclusion from the Indian market. Proceedings are ongoing.

Appropriate provisions have been established based on the known facts for the risks arising from the legal proceedings described above and other proceedings as far as is considered necessary and economically viable. Our goal is to avoid litigation as far as possible. However, it is naturally difficult to predict the outcome of pending legal and administrative proceedings in the majority of cases. Costs can arise on the basis of adverse court or official decisions or the conclusion of settlements that are not covered or not fully covered by provisions or insurance policies and thus exceed the provisions that have been made. However, after a thorough review, we do not believe this will occur.

Regulatory risks

Regulatory and legislative changes at national or European level may involve risks that could negatively affect our earnings situation. This applies for example to new or extended laws and other amended legal frameworks, e.g. export controls. Embargos, economic sanctions or other forms of trade restriction could be imposed on countries in which we operate by the European Union, the US or other countries or organizations. We could be exposed to claims from customers due to the termination of such business activities in such countries.

Compliance risks

Compliance cases can cause many different types of damage and can have serious consequences, such as the discontinuation of business relationships, exclusion from orders, negative assessments on capital markets, the imposition of fines, the absorption of profits, claims for damages as well as civil or criminal proceedings. There is also the risk of significant and lasting damage to the Group's reputation. Customers, shareholders, employees and also the general public could lose trust in our company. In itself, the examination and clarification of alleged cases can result in considerable internal and external costs.

Compliance risks can occur in every area of the company. The compliance organization is therefore designed to ensure proper modes of conduct and behavior on the part of a company and its employees and to make sure that potential or actual infringements of external or internal regulations are responded to appropriately. This is supposed to prevent any liability risks, risks of a penalty or a fine and reputation risks, in addition to other financial disadvantages, loss or damage that the company may incur as a result of misconduct or violations of the law. The regular execution of a Group-wide compliance risk assessment (top-down and bottom-up) helps to identify systemic and companyspecific compliance risks. Measures to introduce or improve international or local structures, guidelines, processes, IT systems and training content are derived from the results.

However, despite extensive and multi-level inspection and control mechanisms, the possibility of risks arising from unlawful activities of individual parties cannot be ruled out. Alleged cases are investigated actively. In investigative proceedings we cooperate with the relevant authorities. Proven misconduct results in consequences for those involved as well as adjustments in the organization. However, the financial impact of compliance cases on the Group's results is very difficult to estimate. Depending on the case and the circumstances, a considerable range is to be assumed.

Tax risks

Tax risks can result from changes in the legal or tax structure of the Rheinmetall Group or from assessment periods which are still open. The differing assessment of circumstances during audits can lead to claims on the part of the tax authorities. There is also the risk that the tax burden for the Rheinmetall Group could increase as a result of changes to tax legislation or court decisions.

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Financial risks

Rheinmetall's global business operations mean that it is also exposed to the associated risks in the respective markets. The material financial risks for Rheinmetall are described individually and the measures for hedging and managing risk are explained in the following section. A key objective of the risk management is to exclude financial risks where possible or at least to limit them to such an extent that the profitability of the ongoing business operations and the assets of Rheinmetall remain unaffected as far as possible.

The liquidity risk describes the risk that payment obligations cannot be met, cannot be met on time or can be met only with excessive financing costs. To ensure that the Rheinmetall Group is solvent at all times, a rolling, twelve-month liquidity requirement forecast is drawn up in which the cash transactions of the Group companies are recorded, assessed, aggregated at the Group level. The requirement for the next twelve months that is determined in this way is stressed using Monte Carlo simulations derived from deviations between the actual and the forecast requirement and compared with the available financial scope in order thus to identify potential financing gaps at an early stage. These simulations also include worst-case scenarios such as payment defaults, reductions in credit facilities or unexpected working capital requirements. When determining the necessary financial scope, Rheinmetall takes great care to ensure that adequate reserves are held at all times.

Credit risks arise from financial transactions, e.g. deposits, financing commitments and other financial receivables such as positive fair values arising from hedging transactions, as a result of the relevant counterparty's possible insolvency or inability to pay. To manage these risks, limits are set that are based on the credit rating of the counterparty. Furthermore, financial transactions are conducted exclusively with partners that enjoy an investment grade rating from a recognized rating agency or alternative ratings with an appropriately comparable credit rating classification. Attention is paid here to a wide range that, in addition to the counterparties themselves, also takes diversification at the country level into account. In connection with long-term orders, especially in the Defence sector, these risks are examined on a case-by-case basis and mitigated or hedged accordingly by means of prepayments, credit insurance, guarantees or letters of credit or even contractual regulations. In both sectors, the credit risks from the operating business can generally be assessed as low on account of the customer structure.

Rheinmetall reduces risks arising from changes in market prices, such as exchange rates, interest rates or raw materials, as far as possible through appropriate contractual agreements or mitigates them using financial instruments.

In the area of currency, cost escalation clauses in the contracts that are entered into are essentially used, where long-term price agreements are referenced to specific rates and adjusted in a predefined form over the term of the contract. Any impact on earnings that may potentially remain is simulated and hedging strategies reflecting the different business structures of the corporate sectors are derived on this basis.

Changes in the area on interest rates on the money and capital markets lead to interest rate risks, which occur in two forms. On the one hand, variable-interest financial instruments are subject to a cash flow risk, as future interest payments can fluctuate in terms of their amount. In the case of fixed-interest financial instruments, on the other hand, interest rate changes result in fluctuations in fair values and thus to valuation effects that are of relevance to earnings.

The effects of these two forms do not constitute a significant risk for Rheinmetall, as the interest rates of the long-term debt instruments are largely fixed either in the contracts themselves or through appropriate offsetting derivatives. Fluctuations in fair value where the underlying balance sheet time is recognized at amortized cost do not lead to any notable burden in relation to the result or the equity. The cash flow risk from variable interest on money market programs is largely offset by corresponding opposite cash positions in the Group.

Price variation clauses in customer and supplier contracts are also used in principle in order to avoid commodity price risks as far as possible. Derivatives are additionally used if price variation clauses can be used only to a limited extent or cannot be used at all. This is regularly the case in the areas of industrial metals and energy. The management of all market price risks is carried out in regular committee meetings in which the hedging decisions are documented and where only standard instruments with counterparties with a defined minimum credit rating (investment grade) are used to hedge them.

Opportunity management in the Rheinmetall Group

Our business policy is geared towards maintaining and expanding our current business liberties and financial flexibility. The goal is to ensure the long-term and economically successful existence of Rheinmetall for the benefit of all stakeholders. Opportunities that present themselves must be identified early and systematically and the accompanying potential for success must be exploited in order to be able to continuing growing sustainably in dynamic markets. To this end, market, industry and technology trends are continually monitored, including as part of integrated strategy and planning processes, and target markets are analyzed intensively and assessed in terms of their strategic and economic significance for the Rheinmetall Group's areas of business.

The operating units are responsible for the identification and initial assessment of opportunities and the potential for success. They are supported in this by various functions at Group level, such as Corporate Strategy & Development.

Opportunities for the current business operations are managed among other things in regular review sessions between the Executive Board and the heads of the divisions and central departments. Based on an examination of structured assessments of market, industry and competition data, discussions focus on economic, market, industry and sales developments as well as the competitive situation and technological trends. The next step involves defining strategic initiatives and operational measures that are aimed at realizing the potential opportunities that have been identified. This can entail a reallocation of budgets that are provided for exploiting opportunities. Secondly, the opportunities that arise are logged and evaluated as part of the forecast produced three times a year.

Opportunities and potential for success deemed strategically important for the medium and long term are included in the three-year medium-term corporate planning on the one hand and, on the other, discussed at strategy meetings for periods beyond this horizon, where they are assessed and prioritized in terms of their significance for the future development of the business and assigned a budget if necessary.

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Risks in the Automotive sector

Any change with regard to customers, e.g. relocation of production sites, termination of customer relationships, sales of companies, insolvencies, declines in demand and changes in customer requirements, can lead to fluctuations in prices, quantities and margins, which can result in a decline in operating activities and/or reduce the value of investments. Vehicle manufacturers are engaged in fierce international competition with each other as a consequence of which they are exposed to tough innovative and, especially, cost reduction constraints, which they attempt to pass on to their suppliers. Companies in the Automotive sector are combating the impact of this development by investing in new products, deploying modern manufacturing processes, cost-saving technologies and new materials and realizing potential savings in corporate functions.

Declines in automotive demand worldwide and in certain countries are countered by the expansion of our international presence and by marketing products outside the automotive industry. Advantageous economic parameters for new locations and the expansion of existing production capacities are exploited. Additionally, the diversified customer structure allows fluctuations in the production figures of individual automotive manufacturers to be balanced out. Thanks to the broad product range and low reliance on individual customers, it is possible to cushion price risks, weak demand and insolvency risks. Despite all measures taken in relation to sales, production and the product portfolio to ensure capacity is utilized at the sites, the need to adjust capacity even to the extent of closing certain sites may arise.

Furthermore, Rheinmetall Automotive's risk profile may be influenced by structural market risks such as the emergence of new suppliers, product substitution, delivery bans and protectionist trade barriers such as punitive tariffs as well as consolidation trends on sales markets. For example, in the case of combustion engines diesel drive systems are a topic of intense debate due to their high level of nitrous gas and particulate emissions in passenger car applications. A legal restriction on entry of diesel vehicles with the emission class Euro 4 or lower came into effect in the first major German city at the beginning of 2019, and other German cities are set to follow suit. In addition, some cities in the "C40 Cities" group have announced restrictions on vehicles with diesel drives by 2025. Upheaval is expected in the automotive and automotive supply industries due, among other things, to new drive concepts. Hybridization and electromobility require new vehicle components, making it necessary to redefine the classic technology and supply chain relationships between manufacturers and suppliers.

Bottlenecks in supply and sharp fluctuations in prices for energy and raw materials involve significant risks. Price risks for raw materials, particularly aluminum, copper and nickel, are countered with cost escalation clauses in contracts on the sales side. When procuring raw materials that are traded on the stock market, the sector's central Commodities Office manages the timing of purchases and the volume purchased in consultation with the operating units, making use of financial hedging instruments.

The potential insolvency of suppliers represents a further risk on the procurement side. This risk is countered by carefully selecting subcontractors, spreading the risk by distributing the purchase volume across further suppliers and supporting suppliers in emergency situations if necessary.

Appropriate insurance cover is in place for warranty, product liability and recall risks, which is reviewed periodically and adjusted where necessary.

Rheinmetall Automotive is faced with tough competition from other companies in attracting qualified employees. New mobility concepts and, above all, new drive concepts for cars, mainly hybridization and all-electric drive systems, will change the requirements for the available expertise in research and development as well as production. This applies equally to automotive manufacturers and their suppliers. Our companies are already discovering that it is becoming more difficult to attract engineers with specialist knowledge of electrical engineering throughout the world. Generally, this situation may get worse, as the pressure to innovate in the industry as a whole will increase and extend to include production workers in countries with low unemployment levels.

In the automotive industry, manufacturers and suppliers are closely linked in working together to develop and produce vehicles. When selecting or even preselecting suppliers, the evaluation of whether the respective sustainability standards, which include, among other things respect for employment and social standards as well as internationally recognized human rights, are complied with in the delivery chain is increasingly significant for automotive manufacturers. A large number of manufacturers, including virtually all well-known European and North American manufacturers, oblige their suppliers to submit annual self-assessment questions, which enable them to rate performance and progress regarding sustainability. There is a risk that Rheinmetall Automotive does not sufficiently comply with OEM requirements and therefore cannot be considered when contracts are awarded.

Rheinmetall Automotive has had a comprehensive set of compliance-related rules in the form of guidelines plus company directives and operating instructions that ensure staff comply with legislation at all times and prevent violation of applicable legislation and guarantee staff act appropriately and correctly in their day-to-day business. However, despite multi-level inspection and control mechanisms, the possibility of risks arising from unlawful activities of individual parties cannot be ruled out. Provisions are created for any possible compliance cases.

Opportunities in the Automotive sector

Although business in the international automotive industry was sluggish in 2018 measured by the number of passenger cars and light-duty commercial vehicles produced – 1.0% fewer vehicles were counterparty than in the previous year – the mood among experts is cautiously optimistic about the future. For example, IHS Market forecasts annual growth of 1.8% on average for the next three years. We also see further opportunities for us.

Technological opportunities through the optimization of conventional drive systems – The combustion engine will remain the dominant drive system for individual mobility in the short to medium term. However, the engines used will have to comply with increasingly stringent international regulations with regard to emissions of pollutants, particularly carbon dioxide, which affects the climate. As a result of the introduction of the new worldwide harmonized light vehicles test procedure (WLTP) in Europe and regional adjustments in other countries and regions throughout the world, this is becoming ever more demanding for vehicle manufacturers.

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Development engineers influence consumption and emissions in diesel and gasoline engines both directly, through technical measures relating to mixture control and gas exchange, and through applications that will indirectly help to minimize friction losses and utilize auxiliary units according to individual needs. Rheinmetall Automotive already offers a wide range of innovative and competitive components and systems in both areas. These include divert-air valves, wastegate actuators and pressure control valves for exhaust gas turbochargers as well as specially coated pistons, plain bearings and engine blocks and variable oil, coolant and vacuum pumps. We have been able to book our first order for our new “UpValve” variable valve control system, which was developed for use in turbocharged gasoline engines and achieves consumption benefits of up to 5% depending on the reference cycle. Building on this high level of technological expertise, Rheinmetall Automotive will further exploit its capacity for innovation.

Technological opportunities through new drive concepts – The role of the combustion engine will change. The proportion of vehicles that rely solely on a combustion engine will decline in the medium to long term, while the use of hybrid vehicles as a bridge technology to electromobility and electric vehicles will increase.

As a specialist in the field of drive systems we see far more opportunities than risks in any extended portfolio. For example, we have already developed cast components for battery trays in electric vehicles and complex cooled aluminum housings for electric drives and have received the first series orders from well-known automotive manufacturers. An e-traction engine, which is characterized by high levels of efficiency and low levels of energy loss combined with minimized size, is under development. This drive system will offer numerous applications since speed and torque are extremely scalable.

Added to this are all-electric auxiliary units such as electric vacuum pumps that ensure comfort and safety, for example during braking, even when the combustion engine is switched off or there is no combustion engine. The efficient use of energy is a key capability, especially in electrically powered vehicles.

This also requires effective thermal management, which is why Rheinmetall Automotive has extended its portfolio to include system components for conditioning the passenger compartment or vehicle components in the form of electric coolant switch and control valves. Furthermore, in the future there will be a requirement for systems for extending the range of electric vehicles which can, for example, be created with heat pump components, for which orders for prototypes have already been received from several customers, or in an extreme case by using range extenders developed by Rheinmetall Automotive. Another key starting point for future vehicle concepts is light construction, which we are addressing with aluminum structural components and chassis components.

Opportunities through diversification – Policies on pollutants and greenhouse gases set targets not only for passenger cars and light-duty commercial vehicles, but also for heavy-duty commercial vehicles. Particularly stable, highly-developed and innovative drive systems must therefore also be introduced for heavy-duty commercial vehicles. Rheinmetall Automotive uses its extensive specialist knowledge, developed in connection with advanced drive technologies for passenger cars, for these vehicles as well. We also have long-standing close relations with manufacturers of heavy-duty commercial vehicles, which we have developed as a key pistons supplier in this segment.

We were therefore also able to supply products from the Mechatronics division to these customers and manufacturers of heavy construction site vehicles and agricultural machinery, such as exhaust gas recirculation valves, exhaust gas recirculation cooling modules and exhaust gas mass sensors, and to win related contracts. We also used our specialist technological expertise from the Hardparts division for products outside the automotive industry, for example in order to develop large-bore pistons and plain bearings specifically for electricity generation, heavy construction site vehicles, mining equipment, locomotives, shipbuilding and agricultural machinery.

Geographical opportunities – Rheinmetall Automotive intends to continue optimizing its business activities from a geographical viewpoint in the future, according to the needs of the automotive markets. In particular, the emerging economies of India and China are expected to offer automotive manufacturers and their suppliers growth potential in the coming years, due firstly to rising demand for passenger vehicles and light- and heavy-duty commercial vehicles, and secondly to the introduction of increasingly strict requirements to reduce emissions of pollutants and carbon dioxide.

Our aim is to benefit from these megatrends through the prudent expansion of our existing production capacities in China and India and the deployment of our expertise from the major automotive markets in USMCA and Western Europe. Specifically, we have expanded our presence in China with a new site for cylinder heads and housings for electric vehicle engines. We have thus laid the foundations for our companies to participate over the long term in a rapidly expanding and sustainable market segment within the field of mobility. Furthermore, we are playing an active role in the further expansion of electromobility in China and establishing ourselves as a serious player in this trend-setting technology. In India, we intend to increase our market share with the aid of our production facilities in Pune and Supa.

Risks in the Defence sector

Defence's business areas are not directly dependent on the state of the economy. Rheinmetall Defence's customers are national and international authorities. Risks lie in the dependence on spending patterns for public budgets in Germany and foreign customer nations. This continues to lead to shifts and cuts in state budgets, which can also affect defence. Political, economic, commercial, regulatory and export control influences and changes in the armaments technology requirements of customer nations, along with budget restrictions resulting from strained budgetary situations, or general financing problems on the part of customers, can result in risks in the form of delays in the awarding of contracts, time extensions or even the cancellation of orders. Risks also arise from increasing transatlantic competition. Moreover, there is tough international competition on export markets to which the Group has access. Higher pre-financing due to worsening conditions for prepayments and possible financial investments in projects also constitute risks.

Unforeseen difficulties with the implementation of projects can also lead to unplanned charges. As well as uncertainty in calculations, these include altered economic and technical terms and conditions following the conclusion of a contract, unplanned changes or additional customer requirements, unexpected technical difficulties or faults, problems with business partners or suppliers and deferred dates of acceptance and settlement. By means of professional project management and comprehensive quality management measures, as well as the appropriate formulation of contracts, it is possible to limit these risks, but not to exclude them altogether.

The expansion of international business activities harbors the risk that, in some regions of the world, due to the industry-specific practices in place in the countries in question, delays may arise in order processing or risks arising from the payment practices of customers or business partners that are customary in these regions may increase.

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Risks are limited as far as possible by means of compliance checks on business partners in line with the business partner guideline we introduced in the year under review, professional project management, comprehensive project controlling and suitable formulation of contracts. However, despite ongoing monitoring, delayed payments or even payment defaults on the part of contractual parties may unexpectedly arise.

The business activities of Rheinmetall Defence have a strong international focus. Approximately 65% of sales are achieved with customers outside Germany. New laws or changes to general legal and regulatory conditions, in procedural matters with existing export control regulations or in the national and international licensing practice for military equipment exports can hinder the development of our Defence business and thus negatively impact the earnings situation at the Rheinmetall Group.

Risks for the business of the Defence sector also lie in the impacts of the export control policy of the German government and also of other countries. As a result of these restrictions, which have arisen especially in the past year, Rheinmetall Defence is barred from pursuing business activities in significant sales markets. Cooperation with other companies in the European Union, especially France, is complicated considerably by the restrictive approach of the German government to export issues. As a global player, it is not just German export control regulations that we have to comply with. The law of other nations also has to be respected, especially that of the USA. This can result in additional risks.

Opportunities in the Defence sector

Opportunities thanks to the modernization of armed forces – In most western industrialized nations, there is an ongoing need for extensive modernization of military equipment, especially in terms of armed forces technology. Current threats and foreseeable potential risks in foreign military deployments mean that ongoing investment is still needed in improving equipment and protecting soldiers.

The companies in this corporate sector specialize in the development and production of components and systems for the protection of people, vehicles, aircraft, ships and assets. They are a strong partner to the German armed forces, their allies and friendly armies, along with civil national security forces, and protect the forces involved in foreign operations.

Opportunities for the business units of the Vehicle Systems, Weapon and Ammunition, and Electronic Solutions divisions result from the changing military requirements of the German armed forces and other armed forces around the world. The range of products and capabilities of Rheinmetall Defence is tailored to central defence technology requirements resulting internationally from the ongoing need for substantial modernization of armed forces and new military deployment scenarios. Reference projects commissioned by the German armed forces, such as the series contract for the Boxer protected transport vehicle, the Puma infantry fighting vehicle and the Gladius infantry project, are key factors in winning further orders abroad.

Opportunities resulting from political developments – Foreign deployments of UN and NATO troops, crisis intervention, peace keeping missions, as well as the increasing importance of defending alliances: Owing to constant changes in national and international security and defence policy, brought about, for example, by the geopolitical realignment of economically strong nations, political upheaval, new hot spots and escalating conflicts, the armed forces of the 21st century are facing new challenges in national security as well as in the planning, implementation and securing of military deployments abroad.

Huge threats to external and internal security arise from unstable nations and dictatorial regimes as well as terrorists and radical activists. Effective protection systems are of central importance in the deployment scenarios of today and the future, in order to offer a maximum level of safety to soldiers. The Defence sector may benefit from ad hoc procurements triggered by the deployment of forces in crisis regions.

Opportunities from German and European programs – Armed forces that are ready for operations and capable of reacting require sufficient resources and equipment, both in terms of personnel and material, that is correctly structured and adequate for the task. In Germany. defence expenditure as a percentage of gross domestic product has fallen to less than half since 1990 (1990: 2.7%; 2018 estimated: 1.24%). Numerous hotspots, expectations that Germany will play a more active role in foreign and security policy as well as demands arising from national and alliance defence have, however, led in the meantime to a change of thinking and a reversal of the trend. In its "Strategic Level Report that it recently presented, the German government has pledged to NATO that it will increase its defence budget to 1.5% of GDP by 2024. In absolute figures, this means almost doubling defence spending from €33 billion to €60 billion within a decade.

We also see opportunities in European customer nations in the next few years. By expanding their budgets, the Europeans are following the goal trend to increase military and security spending. Their defence budgets have even risen significantly more sharply (+7.5%) than the global average (+2.7%) since 2014 according to the defence study by AlixPartners from November 2018. The main reasons for this are the growing risks in the relationship with Russia and the pressure that the US is exerting on its European partners in NATO to take on more military responsibility of their own. This is accelerating the development of a common defence and security policy. Additional strategic opportunities for Rheinmetall Defence are thus also arising from the specific European initiatives to establish permanent structured cooperation in defence and in armaments projects, known as the Pesco Initiative (Permanent Structured Cooperation), which aims to increase interoperability between the member states in order to enhance the operational capability of multinational organizations by dovetailing defence structures and systems. This cooperation is particularly important for the projects agreed between Germany and France to develop joint military hardware for their land forces, in which we will have a significant part to play.

Furthermore, Rheinmetall Defence is well positioned to benefit from major European military vehicle programs. At the moment, we anticipate demand for around 250 tracked vehicles in Germany and for more than 600 in Europe. For wheeled vehicles, we currently estimate that demand in Germany runs to 700 to 800 Fuchs and Boxer vehicles and in Europe to more than 900 Boxers.

In June 2018, the European Commission published its proposal for a regulation on the "Establishment of a European Defence Fund" (EDF Regulation), which is part of the European Defence Action Plan (EDAP). The industry news service griephan reported in February 2019 that the European Commission is proposing funding of €13 billion for the period from 2021 to 2027, €4.1 billion of which is intended for research activities and €8.9 for capability development. According to AlixPartners, the EU and its member states will provide a total of €2.5 billion from 2017 to 2020.

Opportunities through further internationalization – Despite a recent moderate rise in defence budgets, including those of countries that have traditionally been important Rheinmetall customers, Defence's strategic priority lies in tapping into new growth markets. We believe Asia and Australia, but also individual countries in Western and Eastern Europe, represent particularly attractive growth opportunities.

Opportunities thanks to consolidation – Other growth opportunities may arise for us as a result of the expected ongoing consolidation process in the European defence market. This may occur as a result of targeted acquisitions of products and/or technology or on the basis of company acquisitions which allow more rapid regional market access.

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Internal accounting-related control and risk management system

The internal control and risk management system related to the accounting process at the Rheinmetall Group includes all principles, procedures and measures which ensure, by both organizational and technical means, that all business processes and transactions are recorded in the accounting system promptly, accurately and consistently. In addition to defined control mechanisms, e.g. manual coordination processes and technical coordination processes for systems, this includes the separation of administrative, executive, settlement and approval functions together with guidelines and operating instructions. Changes to the economic, legal and regulatory environment of the Rheinmetall Group are analyzed to determine whether adjustments to the accounting-related control and risk management system are necessary.

Accounting guidelines – The IFRS accounting guidelines cover all IFRS regulations that are of relevance to Rheinmetall AG. They explain the IFRS regulations and specify accounting procedures. The guidelines must be observed by all companies included in the consolidated financial statements, thereby ensuring standardized accounting. The IFRS accounting guidelines are adapted to changes in IFRS at least once a year. Companies are informed about specific changes to guidelines. The content of the guidelines is the responsibility of the main Accounting department of Rheinmetall AG.

Accounting processes in companies included in the consolidated financial statements – It is the responsibility of the management of the respective companies to prepare the financial statements of companies included in the consolidated financial statements. The accounts and financial statements are prepared using SAP-based accounting systems (SAP-FI). Procedures are implemented in the accounting process to ensure the correctness of the accounts and financial statements. The management of each Group company monitors compliance with IFRS accounting guidelines and other guidelines and operating instructions in force across the Group. The management must confirm the correctness of the financial statements in a corresponding declaration.

Consolidation and Group accounting process – The main Accounting department of Rheinmetall AG is responsible for central management of the Group accounting process. It stipulates the schedule for the consolidated financial statements and monitors compliance with deadlines.

The consolidated financial statements of Rheinmetall AG are drawn up with the aid of the consolidation software SAP SEM-BCS. A standardized, binding chart of accounts is incorporated into this system, which covers virtually all the information required for the IFRS consolidated financial statements of Rheinmetall AG. The individual companies record the financial statements prepared in accordance with IFRS accounting guidelines in the consolidation software. After this IFRS single-entity financial statement data is recorded, it then undergoes an automatic plausibility check and system-based validation. If error or warning messages are displayed during this process, these are to be analyzed and dealt with by the person responsible for the single-entity financial statements. Employees in the main Accounting department then perform additional automatic and manual checks. The manual and automated consolidation measures undergo system-based checks and automatic plausibility checks.

The consolidated financial statements are also audited on the basis of standardized reports using comparisons of target and actual performance, trend and deviation analyses and detailed evaluations. A check is carried out every quarter to ensure the completeness of the scope of consolidation.

Auditing and monitoring – As a central department that is independent in terms of instructions and processes in line with a guideline promulgated by the Executive Board, Internal Audit examines workflows, structures and policies for their correctness, security and economic efficiency on the basis of an audit plan adopted by the Executive Board. The audit plan establishes the focal areas for the risk-oriented audit activities and the scope of the audits to be performed. These are then implemented by Rheinmetall employees or auditing companies as mandated by Rheinmetall AG. If necessary, the Executive Board will also commission Internal Audit to conduct special audits. Risks identified and weaknesses discovered during audits are promptly eliminated by those responsible in each case. The Executive Board and Audit Committee of the Supervisory Board are regularly informed of the results of the audit and of the implementation status of improvement measures.

The auditors examine the consolidated financial statements and the combined management report to determine whether they comply with applicable accounting regulations and other relevant provisions. They check the IFRS accounting guidelines and make these available to the auditors of companies included in the consolidated financial statements. The auditors of these companies check whether the IFRS accounting guidelines have been applied in full to the financial statements prepared for consolidation purposes and establish the correctness of the annual financial statements prepared in accordance with applicable accounting principles. The audits performed by these auditors also include an assessment of the effectiveness of the accounting-related internal control system based on spot checks in subdivisions.

Assessment of the general risk situation

Potential risks for companies in the Rheinmetall Group include on the one hand factors that cannot be influenced, such as the national and international economy and the general economic situation, and on the other hand risks that can be influenced directly, which are generally operational risks.

The aforementioned risks are not necessarily the only risks to which the Rheinmetall Group is exposed. Risks that have not yet been identified or that are still assessed as insignificant can materialize under altered circumstances, hinder business activities and adversely impact the assets, financial situation and earnings of the Group. As part of its audit of the consolidated annual financial statements, the auditor, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, examined the early risk identification system of the Rheinmetall Group to ensure that it complies with the provisions of stock corporation law and confirmed that it fulfills all legal requirements in accordance with section 91(2) AktG and is suitable for identifying developments that could jeopardize the continued existence of the Group at an early stage.

In accordance with the basis outlined for the assessment of risk factors and taking into account the overall risk situation, major asset, financial and earnings risks jeopardizing the Rheinmetall Group on a long-term basis were not identifiable during the past fiscal year. The overall risk situation in the Rheinmetall Group did not change substantially in fiscal 2018 compared with the previous year.

The assessment of the overall risk situation is the product of consolidated consideration of all individual material risks. We are confident that the risks presented are limited and manageable. In our opinion, no risks exist from today’s perspective on an individual basis, in combination with other risks or as a collectivity that may significantly jeopardize the continued existence of Rheinmetall AG and the Rheinmetall Group as a going concern in the foreseeable future.

Economic report
Notes on Rheinmetall AG

Result of operations

The single-entity financial statements of Rheinmetall AG for fiscal 2018 have been prepared in accordance with the accounting regulations of the German Commercial Code (HGB) and the additional provisions of the German Stock Corporation Act (AktG).

In addition to the results of subsidiaries, the earnings situation of Rheinmetall AG is determined to a large extent by expenses and income in central Group financing.

Income statement of Rheinmetall AG in accordance with HGB (condensed version) € million

	2018	2017
Investment income	133	136
Net interest	(4)	(9)
Sales	70	59
Other operational income	132	65
Personnel expenses	40	40
Other expenses	154	109
EBT	137	102
Taxes on income and revenue	(40)	(28)
Net profit for the year	97	74
Changes in retained earnings	6	-
Net earnings	91	74

Net investment income of €133 million was generated in fiscal 2018 after €136 million in the previous year. The Defence sector accounted for €23 million of this (previous year: €29 million). The Automotive sector reported net investment income of €110 million (previous year: €107 million).

Net interest income from central financing improved by €5 million from €-9 million to €-4 million essentially as a result of the repayment of the bond.

In connection with the performance of the duties of a holding company, net other operating income and expenses of €-22 million (previous year: €-44 million) were incurred, together with personnel expenses of €40 million (previous year: €40 million). The net year-on-year reduction of €-22 million essentially results from the reversal of write-downs on financial assets, which exceeded the write-downs by €29 million. Reversals of write-downs on financial assets totaling €10 million were reported in the previous year.

Earnings before taxes amounted to €137 million (previous year: €102 million). Tax expenses amounted to €40 million in the year under review (previous year: €28 million). After deducting taxes, net income of €97 million remained for fiscal 2018 (previous year: €74 million). After appropriations to retained earnings, net earnings of €91 million (previous year: €74 million) were reported.

Proposed dividend

At the Annual General Meeting on May 28, 2019, the Executive Board and the Supervisory Board of Rheinmetall AG will propose that the net earnings be used to pay a dividend of €2.10 per share (previous year: €1.70 per share), whereby the treasury shares held by Rheinmetall AG (December 31, 2018: 577,056; previous year: 679,709) are not entitled to a dividend.

Net assets and financial position

The asset situation of Rheinmetall AG is largely defined by its holding function, i.e. by the management of investments and the financing of Group activities. This is reflected above all in the amount of the investments held and in the receivables due from and liabilities owed to Group companies. The total assets of Rheinmetall AG increased by €416 million to €2,922 million. Financial assets include shares in affiliated companies in the amount of €1,310 million (previous year: €1,081 million). This represents 45% total assets (previous year: 43%). Receivables from and liabilities to affiliated companies amounted to €870 million (previous year: €665 million) and €1,332 million (previous year: €1,013 million) respectively. The proportion of receivables in the total assets amounts to 30% (previous year: 27%), the proportion of the liabilities is 46% (previous year: 40%). The total assets as of December 31, 2018 are financed by equity of €905 million (previous year: €870 million). The equity ratio declined from 35% to 31% in the year under review. In equity, the dividend payment for 2017 of €73 million was offset by the net income generated for the year of €97 million. In addition, the equity increased by €11 million as a result of the reduction in treasury shares. Liabilities as of December 31, 2018 increased by €387 million year-on-year to €1,916 million.

Balance sheet of Rheinmetall AG in accordance with HGB (condensed version) € million

	Dec. 31, 2018	Dec. 31, 2017
Fixed assets		
Intangible assets, property, plant and equipment	43	45
Financial assets	1,317	1,089
	1,360	1,134
Current assets		
Receivables from affiliated companies	870	665
Other receivables, other assets	211	294
Cash in hand	481	413
	1,562	1,372
Total assets	2,922	2,506

	Dec. 31, 2018	Dec. 31, 2017
Equity	905	870
Provisions	101	107
Liabilities		
Liabilities due to banks	551	493
Liabilities to affiliated companies	1,332	1,013
Other liabilities	33	23
	1,916	1,529
Total liabilities	2,922	2,506

Economic report
Report on expected developments

Opportunities and risks, but no signs of a global recession

The outlook of the International Monetary Fund (IMF) on the future of the global economy is muted in comparison with previous reporting years. Two factors in particular, which already marked 2018, are the reason for the cautious forecast. On the one hand, the continuing trade war between the US and China is putting a strain on Chinese exports and thus on the global economy. On the other, the United Kingdom's political and economic future is creating a large element of uncertainty in Europe. "A no-deal Brexit is one of the greatest risks for our forecast", IMF chief economist Gita Gopinath said at the presentation of the World Economic Outlook Update in January. In their latest analysis, the IMF's economic experts estimate global economic growth of 3.5% for 2019.

The Ifo's business climate index highlights that the German economy is also less euphoric in light of the globally subdued mood. It fell to 99.1 points in January, its lowest level since February 2016. For all the risks, experts are also indicating that the situation is not critical.

The German government took the primarily external economic risks as an opportunity to significantly downgrade its forecast for growth in Germany's gross domestic product (GDP). Last fall, the Federal Ministry for Economic Affairs had projected growth of 1.8% for 2019. Growth expectations were cut to 1.0% in January 2019.

The figures in the European Commission's Economic Forecast from February 2019 are similarly cautious. It forecasts economic growth of 1.3% for the countries of the eurozone for 2019, down 0.6 percentage points from the fall forecast.

In the assessment of the IMF, the developed economies will be slightly harder hit by the decline in global growth than the developing and emerging countries. Growth will fall from 2.3% to 2% in the industrialized nations. After improving significantly to 2.9% in 2018, the growth rate in the US will fall to 2.5%, which however, is still higher than the figure from 2017 (+2.2%). A decline in growth by 0.2 percentage points to 1.6% results for the eurozone. A slight upturn is expected for the Japanese economy, where growth will probably surpass the one-percent mark again (+1.1%).

A picture that is generally similar to the one in the past period under review is produced for developing and emerging countries. The growth rate turns out to be 0.1% lower and stands at 4.5%. The IMF experts see a good chance that the increase will turn out to be significantly higher again in 2020. The cautious growth forecasts for the Chinese market (2019: +6.2%) are acting as a brake on the overall picture for developing and emerging countries. The trend is upward in India, in contrast, where the growth rate increases by 0.2 percentage points to 7.5 %. Positive figures are also expected from the Brazilian economy, which is projected to grown by 2.5% in 2019, set against a figure of 1.3% in 2018.

The JEFTA treaty between the European Union and Japan will offer new economic opportunities. Entering into force at the beginning of February, it lays the foundation for the largest free trade area in the world. Trade barriers between the two markets of more than 600 million people in total will be almost completely eliminated by the treaty. "Japan and Europe are thus confronting the uncertain global economic prospects with exemplary open markets, high standards and reliable trading rules", was the reaction from the Federation of German Industries (BDI).

More passenger cars and light commercial vehicles set to be produced in 2019

According to the analyses of the experts at IHS Markit from February 2019, the global production volume for passenger cars and light commercial vehicles up to 6.0 t is set to increase in 2019. After a 1% decline in global production in 2018, an increase to around 95 million units is expected (+1.0%). Western Europe is expected to record a slight reverse (-0.5%). For the US, the analysts also suggest a decline in performance in comparison with the period nude review just ended (-1.4%). A more positive picture is set to emerge for Asia, where around 54.7 million passenger cars and light commercial vehicles are expected to be produced in 2019, which would be equivalent to a 1.3% rise.

In the forecast, the Asian market benefits from the fact that – following a 3.7% fall in 2018 in comparison with 2017 – production figures in China are set to rise again (+1.6%), while the Indian automotive sector will continue on its stable growth path with an expected increase of 5.9%. Outside of Asia, IHS Markit expects the markets in Mexico (+3.4%) and Brazil (+7.1%) in particular to record even stronger growth. The following table provides an overview of the forecast for 2019 in the regions that are relevant to us.

Production of passenger cars and light-duty commercial vehicles up to 6.0 t in selected countries million

		2019	2018
World		95.1	94.2
Western Europe	Germany 5.3	14.2	14.3
Eastern Europe		4.3	4.3
USMCA	USA 10.9, Mexico 4.1	16.9	17.0
Brazil		2.9	2.7
Asia	Japan 9.4, China 27.1, India 5.0	54.7	54.0

Source: IHS Markit, February 2019

"The requirements specifications of the German automotive industry are full to bursting. We are designing a transformation process that will change the automobile, mobility and thus the industry itself as well", Bernhard Mattes, president of the Association of the German Automotive Industry (VDA), said during the 2018 press conference presenting the annual financial statements. Key issues in the context of this process are digitalization as a whole and networked, automated driving. The opportunities for applying artificial intelligence (IA) in road traffic will continue to gain in importance in 2019.

As for the entire industry, these developments present both a challenge and opportunities for Rheinmetall Automotive. Beyond the vehicles themselves, production will also be influenced by digitalization over the long term. Production processes can be further optimized and better networked with each other. As a company with locations around the world, we will make targeted used of the opportunities that arise from this.

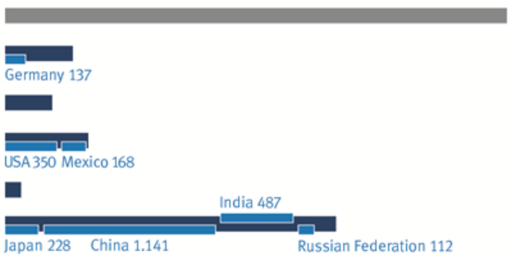
Global truck production reverses slightly after record year

Based on the forecasts of the analysts at IHS Markit from January 2019, global truck production looks likely in 2019 to drop behind the strong performance of the period under review just ended. The experts predict a 3.8% decline in the production of heavy commercial vehicles over 6.0 t. China is expected to be particularly hard hit, with IHS Markit anticipating a drop of 11.6% in Asia's largest economy. China will thus leave its impression on the development of the whole Asian production market (-5.7%), where growth is nevertheless expected in other countries. India is forecast to grow by 3.8%, while the figure for Russia is 16.5%. Production figures are expected to fall slightly in Western Europe and the USMCA region (formerly NAFTA). Potential growth can be seen in the production markets in Eastern Europe and Brazil on the other hand.

Economic report
Report on expected developments

Production of engines for heavy-duty commercial vehicles over 6.0 t in selected countries ’000

	2019	2018
World	3,317	3,447
Western Europe	447	451
Eastern Europe	31	27
USMCA	537	541
Brazil	105	101
Asia	2,187	2,320



Source: IHS Markit, January 2019

Rheinmetall Automotive is also driving forward the mobility of tomorrow

Environmentally friendly mobility has become the issue of the future for the automotive industry bar none, not least since the introduction of the WLTP and the first driving bans in major German cities. Rheinmetall has worked for many years not only on the development of more efficient and low-emission combustion engines. System solutions for alternative drive systems are an ever more important part of the product portfolio. Alongside the expansion of expertise in e-mobility, additional business models are also being developed for this.

A glance at the situation in Germany shows that the automotive industry will in the next few years lay down the tracks for the e-mobility of the future. The selection of models in the area of e-mobility will already start to be expanded in 2019. Over the next three years, German automotive manufacturers will triple the number of e-models they offer to 100. Investments totaling €40 billion are planned for this. Developments are being pushed by an expansive spirit of innovation. In the area of electromobility and hybrid drive systems, one in three patents originates in Germany.

A good example of the contribution being made by Rheinmetall Automotive can be send in the development of the vehicle called EMove (electric mobility vehicle). This efficient, clean model is based on the Fiat 500. With the battery pack developed in-house by Rheinmetall Automotive and the high-performance traction engine, it can reach a maximum speed of 135 km/h and has a range of around 250 kilometers.

Together with our joint venture partner HUAYU Automotive Systems, we are investing in the construction of a new 5,000-square-meter production hall at the Neckarsulm site of KS HUAYU AluTech GmbH. The expansion of production capacity is important so that we can execute additional orders for components that are not related to the combustion engine, such as seats for shock absorbers and suspension struts, aluminum cross members, and battery trays for electric vehicles currently in development.

Our system skills and expertise in the area of e-mobility can also be seen on two wheels. We are looking to become active in the rapidly expanding market for electric drives for pedelecs with the young company Amprio GmbH.

Higher defence spending for modernization

According to the assessment of the analysts at IHS Jane's, global defence budgets will increase from USD1,756.2 billion to USD1,797.5 billion in 2019. The forecast underlines the positive trend in the spending to modernize the defence sector. The demands of the US for higher military spending had an impact among NATO members, which now plan to spend an additional USD100 billion on defence by the end of 2020, according to NATO secretary general Jens Stoltenberg. They are thus taking on more responsibility as a group and setting an example on the way to achieving the target agreed in 2014 to increase spending to 2% of their respective gross domestic product by 2024.

Reinforcement of military cooperation also remains an important endeavor at the EU level. In order to expand the ongoing European partnership in the area of armed forces, the foreign and defence ministers decided in November 2018 to launch 17 new projects within the framework of the Permanent Structured Cooperation (Pesco). German federal defence minister Ursula von der Leyen said of the decision: “These are steps on the path to a European army”.

In the light of the global security situation, countries in Europe are continuing to invest in the ability to bear military responsibility of their own. This is also expressed in the intensification of a common European security and defence policy. The intention behind the bundling of defence activities is to better protect the fundamental interests of the EU and its member states. The competitiveness of the European defence industry will be further strengthened here by the expansion of cooperation in the development of European defence systems.

What is more, many Asian nations, including Australia, are also making investments to modernize their armed forces. Japan, for example, is planning to significantly increase its defence budget. Starting in April 2019, the Japanese government will look to invest 27 trillion yen (around €211 billion) within five years in order to enhance its defence capabilities.

Defence budgets of selected countries billion

	Currency	2019	2018
Germany	Euro	43.2	38.9
World	USD	1,797.5	1,756.2
USA	USD	725.2	717.5
China	USD	219.5	207.8
India	USD	58.4	56.9
Saudi Arabia	USD	57.4	57.3
UK	USD	55.5	54.8
France	USD	53.5	52.2
Russian Federation	USD	44.1	47.3
Australia	USD	31.1	30.6
United Arab Emirates (UAE)	USD	22.7	21.1
Canada	USD	16.4	16.0
Poland	USD	11.7	11.2
Netherlands	USD	11.7	10.4
Algeria	USD	10.1	9.6
Norway	USD	6.8	6.4
South Africa	USD	3.6	3.7

Sources | Germany 2019: Draft federal budget for 2019, section 14, Federal Ministry of Defence, page 2 | Germany 2018: Federal Ministry of Finance, provisional budget for 2018, federal budget for 2018 – Overview of spending, infographic dated January 15, 2019 | All other values for 2019 and 2018: IHS Markit, January 2019

Economic report
Report on expected developments

The part of the 2019 German federal budget allocated to defence totals €43.2 billion. The German government thus followed the plans of the Federal Ministry of Defence and intends to provide €4.3 billion more for section 14 in comparison with the previous year. The increased budget is to be used in particular to modernize the armed forces. Defence minister Ursula von der Leyen believes the German armed forces are on the right track. “Because you can’t shake off 25 years of cuts in just two or three years”, the minister said in the speech to the Bundestag on the 2018 budget legislation. The volume of the defence budget is expected to reach 1.5% of gross domestic product by 2024. The Parliamentary Commissioner for the Armed Forces, Hans-Peter Bartels, takes a positive view of this development. In the commissioner's 60th annual report to the Bundestag on January 29, 2019 on the status of the German armed forces, he called among other things for more speed in the procurement of machines and material in the future.

Given the expansion of the tasks involved in national and alliance defence, the armed forces require suitable equipment. Technical progress is also closely connected with digitalization in the Defence sector. Rheinmetall has formed the joint venture RRS-MITCOS GmbH, in which Rheinmetall holds 74.9% of the shares, with Rohde & Schwarz, Munich, the technology group specializing in communication, information and security technology, in order to support the German armed forces in the future in the digitalization of their command and communication architecture and also to serve the need for integrated deployment and communication systems of the German land forces.

Major opportunities for Rheinmetall Defence – especially in NATO and Europe

As a leading European systems supplier for defence technology and a longstanding partner of the German armed forces, Rheinmetall Defence has an important role to play in the global modernization of armed forces within a dynamic environment. In addition to the backlog of requirements that the Federal Republic currently faces in military procurement, the budget increases in the other NATO countries and also in Australia present new opportunities. The US is growing as the world’s largest defence market and is at the same time also encouraging its alliance partners to take on greater responsibility. Rheinmetall's work will benefit on the European market from the fact that defence budgets have experienced significantly higher growth (+7.5%) than the global average (2.7%) since 2014. Decisions such as Pesco and the European Defence Fund (EDF) will offer additional opportunities here. They will result in even greater focus being placed on cross-border projects.

Executive Board statement on expected development in 2019

Rheinmetall is continuing its growth trajectory – Rheinmetall anticipates another phase of organic growth for the Group in the current fiscal 2019. Starting from around €6.1 billion in fiscal 2018, Rheinmetall AG’s annual sales are expected to grow organically and before currency effects by 4% to 6% in the current fiscal year. This sales growth will be supported by a dynamic performance in the Defence division. Noticeable contributions to growth form the Automotive division cannot be expected in fiscal 2019, on the other hand, on account of the general development of the market.

Against the background of the market uncertainties that currently exist, which are likely to weigh down on the first half of the year in particular, we are assuming for the Automotive division that the development of the global automobile production will stagnate at best and even go into reverse in 2019 Based on this expectation, we find ourselves here predicting a slightly lower range than the current up-to-date expert projections of IHS Markit for light vehicles (up to 6.0 t), which, as of February 2019, forecast annual automobile production of around 95 million units, which would correspond to small growth of 1%.

With an increase in the global defence budget to around USD1,798 billion (+2.4%) forecast by the IHS Markit experts, the Defence sector will also perform above average and should experience a substantial boost to growth in 2019.

Sales – 2019 forecast

		Forecast 2018		2018
Rheinmetall Group	Year-on-year growth in %	4 - 6	€ billion	6.1
Automotive	Year-on-year growth in %	0 -1	€ billion	2.9
Defence	Year-on-year growth in %	9-11	€ billion	3.2

Sales performance in the Automotive sector will be strongly influenced by economic developments in the automotive markets of Europe, North and South America and Asia as well as by a noticeable market recovery that is expected in the second half of the year. Against the background of our currently cautious market expectations in the automotive sector, we forecast – in terms of the whole year – a rather stagnant to slightly positive sales performance overall, before currency effects, for the Automotive division.

For Defence division, we expect sales growth of between 9% and 11% before currency effects in fiscal 2019, which is assured thanks to relatively high coverage through the existing order backlog.

A further absolute improvement in earnings expected in fiscal 2019 – Based on the expected development of the market and the sales forecast derived from that, Rheinmetall expects an operating margin of around 8% for the Automotive segment in fiscal 2019. Rheinmetall anticipates a further improvement in operating earnings in the Defence sector in 2019 and forecasts an operating earnings margin of between 8.0% and 8.5%.

Operating result – 2019 forecast

		Forecast 2019		2018
Rheinmetall Group	%	around 8	%	8.0
Automotive	%	around 8	%	8.9
Defence	%	8.0 - 8.5	%	7.9

Taking into account holding costs, the Rheinmetall Group's margin comes to around 8%. Positive net income slightly higher than the previous year's level is forecast for the Rheinmetall AG management holding in fiscal 2019 (2018: €97 million).

Group EBT – On the basis of the forecast improvement in Group EBT, the discontinuation of positive non-recurring effects from the previous year, and an expected deterioration in the net interest result, we expect pre-tax earnings (EBT) to stay around the same level as the previous year (2018: €485 million).

Return on capital employed (ROCE) – On the basis of the planned business performance, we expect an increase in capital employed in fiscal 2019, with the result that, despite the forecast increase in Group EBIT, we anticipate a reduction in the return on capital employed, which is expected to amount to between 15% and 16% (2018: 17.1%).

Non-financial aspects of business activities

The general public's interest in corporate governance, compliance, sustainability, environmental protection and conservation as well as corporate responsibility is growing. Inquiries to the company from all sections of society are increasing. The expectations for transparency and the requirements for comparability are rising. Investors are looking for sustainable investments. Employees want a secure job, but more and more frequently would also like to balance their professional goals better with their family life and private interests. Environmentally friendly products are attracting ever more consumers. Legislators, authorities and even non-state interest groups demand that increasingly strict regulations and limit values are complied with. People living next to locations used for industrial purposes fear that their quality of life is being adversely impacted. Municipalities, associations and charities in turn value the support that companies give their social, cultural and sports activities.

Management approach

If we know the needs, interests, attitudes, concerns and opinions of our key stakeholders, we can focus our commercial decisions more effectively in line with their expectations. We therefore attach great importance to open and transparent discussion and regular dialog. With 189 companies in 31 countries, we have a very prominent presence in our markets and enjoy continual and lively dialog with various stakeholders, which include customers and business partners, shareholders and investors, employees, suppliers, the media, representatives of the worlds of science and research, society, politicians and authorities as well as associations and organizations. This allows us to establish and develop a trustful relationship as well as to receive inspiration and specific proposals at an early stage. As part of our holistic approach, we use a variety of external and internal formats and channels for communicating with our stakeholders.

Reporting on aspects of sustainability

Rheinmetall is one of Germany's 100 largest listed stock corporations. The international operations and production of the companies of the Rheinmetall Group mean that they are involved in the general economic, ecological and social conditions of various countries and regions.

The Rheinmetall Group has been reporting on its sustainability activities on its website in the "Responsibility" section since October 2011. In May 2017, we also published our first comprehensive report on Corporate Social Responsibility in the Rheinmetall Group, which is based on the "core" option of the guidelines of version 4.0 of the Global Reporting Initiative.

In terms of content, the focal areas of our sustainability reporting stem from the materiality analysis carried out at the end of 2016, with which we identified the significance of various sustainability aspects and the areas of action for our companies with the aim of continually improving our sustainability management.

Business model

The Rheinmetall Group operates in the markets for environmentally friendly mobility and threat-appropriate security technology. The Automotive sector occupies a leading position worldwide as an automotive supplier for engine-related modules and systems. As a leading European systems supplier for armed forces technology, Rheinmetall Defence is a reliable partner to the national and international armed forces and security forces. The Rheinmetall Group's business model is described in detail on pages 22 to 29.

Non-financial aspects of business activities
Technology and innovation

Management approach

Our corporate responsibility is apparent in our products. Innovative strength and technological competence are key measures of competitiveness in the rapidly changing world of business. Tradition and innovation – the Rheinmetall technology group can draw on around than 130 years of specialist knowledge, system expertise and industry experience in the Automotive and Defence sectors. Our consistent focus on research is a prerequisite for not only picking up on the developments of our time, but also for actively helping to shape technological change and, as a result, achieving long-term business success in a diverse range of technologically demanding markets.

Technology and product developments open up growth opportunities

As a longstanding partner to our customers, we have a detailed understanding of their requirements. Rheinmetall invests large sums year after year in research and development in order to increase its technological expertise, expand its technological and market positions and secure the basis for the company's future success with a diversified product portfolio. Market, industry and technological trends are systematically observed before being analyzed and assessed in terms of their strategic and economic significance. Thanks to close collaboration between Sales, Development, Production, Service and Marketing as well as intensive project work in partnership with our customers, new requirements of products, systems, processes and applications are quickly identified and acted upon with the shortest possible development periods. Product lines are continuously improved and expanded, while new or associated business areas are gradually developed further thanks to innovative products, future-oriented systems and customized services.

In the medium to long term we also intend to support our company's growth with products that are not directly derived from the existing portfolio or that promote the transfer of technologies between our Automotive and Defence sectors. The best product ideas from the Rheinmetall Intrapreneur Award 2016 are backed with specific business plans and provided with venture capital. Two companies are already active on the market now: The Group's extensive in-house knowledge in 3D printing with metal materials have been bundled in the newly founded Solidteq GmbH. At Amprio GmbH, the pioneering Amprio pedelec drive system – consisting of engine, battery and display – will be marketed. This is the first product from the micro e-drive systems unit.

Over the next few years, we will also increase our focus among other things on the five technology clusters identified in the year under review: automation, digitalization, next sensors, e-mobility and artificial intelligence.

Our own application-related research and development work is supplemented by studies into the latest scientific findings from basic research programs. Another key pillar of our research work is collaboration with industrial partners, renowned research institutes and skilled experts who support the transfer of knowledge from research into practice. The junior professorship endowed by Rheinmetall Automotive at RWTH Aachen also conducts research into virtual engine development and the development of hybrid drives. Furthermore, Rheinmetall Automotive promotes young scientific staff at an international level with three professorships at the prestigious Tongji University in Shanghai, China.

We provide more information on our specific research and development activities in the past fiscal year and the expenses associated therewith in our comments on business performance.

Risks

We provide information on avoiding or reducing technology and development risks on page 74 et seq.

Non-financial aspects of business activities
Environmental protection and conservation

Management approach environmental protection and conservation

Business activities and, in particular, production processes are associated with the consumption of natural resources. From our perspective, environmental protection and conservation play a major role in ensuring we have a sustainable future that is worth living. The careful use of natural resources is part of the Rheinmetall Group views itself. Using raw materials and energy economically and avoiding environmental damage in business and production processes are also among the key foundations on which the Group companies' business activities are based, as is dealing with residual materials and emissions responsibly. It is of key importance here that environmental protection – in keeping with a holistic approach – is considered an integral part of our management system in the Rheinmetall companies.

Environmental protection

Accordingly, our employees' sense of responsibility towards the environment is encouraged at every level of the value-added chain. We make every effort to further minimize its environmental load with the best available, economically viable technology. The careful use of natural resources is supported through the use of modern technology and contemporary process technologies which help to prevent emissions and waste. Handling materials, energy, water and waste in a considered manner not only protects the environment, but also reduces costs at the same time. We continue to strive to use resources even more efficiently and to prevent the accumulation of hazardous substances. Safe and modern facilities at certified production sites ensure resource-conserving and low-emission production processes as far as possible. Country-specific regulations and the requirements of international standards for quality (ISO 9001, IATF 16949 and AQAP 21102210), environmental protection (ISO 14001) and energy management systems (ISO 50001) are observed and processes are certified accordingly. Regular audits ensure transparency in terms of the status quo and provide objective confirmation of high quality standards. In Rheinmetall Automotive, 30 companies/sites are certified in accordance with ISO 14001 and seven are certified in accordance with ISO 50001. In the Defence sector, 16 companies/sites are currently certified in accordance with ISO 14001 and 16 companies/sites are certified in accordance with ISO 50001.

Conservation – Encouraging biodiversity

Our responsibility also includes preserving the diversity of natural habitats, especially for future generations. We are convinced that industrial use does not have to conflict with active conservation. On the contrary. Rheinmetall Defence has tested its products on heathland near Unterlüss in Lower Saxony for over a hundred years. The company's own site – a restricted zone except for one small area – encompasses 3,400 hectares of forest and 800 hectares of heathland. 90% of the area is managed in keeping with the typical original character of the landscape and the fauna and flora maintained for hunting in accordance with the strict rules for integrated conservation. Active landscaping creates individual habitats for the unique animal and plant life. The result is an unusually rich array of flora, which in turn attracts a rare diversity of insects and birds and also provides a habitat for large wild animal populations.

Our South African subsidiary Rheinmetall Denel Munition is also engaged in protecting nature and species at risk of extinction at three of its four production sites. Similar to in Unterlüss, large, demarcated safety areas far from residential areas enable rare animals to expand their habitats unimpeded. We develop partnerships locally to preserve these conservation areas along with their great biodiversity and rare species.

Non-financial aspects of business activities
Employees

Management approach

A customer-focused corporate culture, based on the values of respect, trust and openness, in which the performance and commitment of each individual is appreciated and is free from prejudice and discrimination is one of the requirements for being attractive as an employer. Rheinmetall's success depends to a great extent on the ideas, expertise, enthusiasm and commitment of its employees. Companies in the Rheinmetall Group are faced with increasingly tough competition from other companies to gain qualified personnel. Acquiring skilled employees for these companies is therefore a key task in our contemporary HR work. In addition to transparent structures and processes, performance-based remuneration and progressive benefits, we attach importance to diversity and equal opportunities and, in particular, to a wide spectrum of career opportunities in the Automotive and Defence sectors, interdisciplinary career paths, deployment opportunities in the international Group companies and tailored training opportunities for individual professional and personal development.

Recruiting and employer branding

In addition to traditional and modern means of recruitment, Rheinmetall also relies on its own training and development of junior employees and is also in close contact with universities, colleges and research institutes in order to get to know suitable science, technology and business graduates at an early stage. Among other things, the establishment of the recruiting center, which has been organized on a central basis since March 2017 and which is responsible for the internal and external recruiting of managers and employees, with the exception of trainees, students on dual courses, high school interns and contract workers at the 41 Rheinmetall sites in Germany and thus for end-to-end applicant management., has standardized the recruitment process, improved the quality and speed when filling jobs and generated cost savings through synergies and economies of scale. 50,158 applications were registered on our TalentLink application platform in the year under review (previous year: 40,169). In 2018, 2,027 positions (previous year: 1,048) were vacant at the Rheinmetall companies, of which 1,157 (previous year: 639) were then filled. In the past fiscal year, we recorded a total of 3,381 people joining and 2,103 people leaving the Rheinmetall Group as a whole (previous year: 2,995 and 1,846 respectively).

Of the various activities, two campaigns stand out in particular: around 200 jobs have to be filled in Germany for the Australian Land 400 project. As the result of an extensive multimedia approach, we received around 6,500 applications from the beginning of April to the beginning of December 2018. 20 skilled workers/fitters were sought for the Hartha site, and a concerted media presence enabled us to find them within three months.

In 2018, various employer branding measures were also implemented to strengthen the Rheinmetall employer brand. For example, the newly produced video clip "Working at Rheinmetall" went live in September 2018. The Global Employer Branding network prepared the international roll-out of the measures previously conducted in Germany to modernize and harmonize the employer brand presence in order to guarantee greater recognition for example during campaigns, in advertisements and online in all important market segments at an international level.

The attractive employer profile and target-group-specific appearances at university fairs, graduate conferences, recruitment events, on social media portals and online job sites continue to bear fruit. The "trendence study" once again calculated the attractiveness of German companies as employers in 2018. Rheinmetall was again rated as one of the 100 most attractive employers in the "Engineering Students Edition", coming in 45th place (previous year: 51st). In the Universum rankings (Germany Top 100 Ideal Employers) in the field of engineering students, we improved our standing once again, reaching 31st place in the year under review after being ranked 38th the year before.

Non-financial aspects of business activities
Employees

Further training as an investment in the future

In the face of tough international competition, the development of employees, talented management trainees and experienced specialist and managerial staff in line with current and future requirements is a key factor in the successful achievement of the Rheinmetall Group's ambitious growth targets. A range of training opportunities, including individual opportunities, allow Rheinmetall employees to improve their performance in their field of work and expand their knowledge and skills beyond the requirements of their current position.

Specific demand for staff development measures is determined at regular intervals on the basis of the Rheinmetall competence model, broken down according to employees paid in line with collective pay scales, managers and employees not covered by collective wage agreements, either in accordance with a collective agreement for qualification or as part of potential analyses or the "Management by Objectives" program. Training objectives can also be derived from strategic objectives (e.g. from the increased internationalization of the Group).

Managers must be adequately prepared for strategic and operational tasks and must be able to adapt quickly to new challenges and respond flexibly to changes. This is not just about professional qualifications, but also calls for first-class leadership qualities and management skills. The Rheinmetall Academy focuses on entrepreneurship and leadership in the development of managers; it successively prepares employees at various stages in their careers for assuming leadership or specialist roles. Along with external seminars and events, high-quality in-house training and qualification events were offered in the year under review in the areas of strategy, leadership, innovation, negotiation and change management. These training courses, programs and workshops geared towards various hierarchical levels and functions constitute a platform for employees to exchange overall knowledge, ideas, experience and opinions.

In the year under review, 1,205 employees (1,034 men, 171 women) attended 107 (previous year: 81) one-day or multi-day events at the Rheinmetall Academy, compared with 1,037 (889 men, 148 women) in the previous year. Approximately 51% of the participants came from the Defence sector and around 44% from companies in the Automotive sector. At 14.2%, the proportion of participants was on par with the previous year. In 2018, Rheinmetall invested €6.8 million (previous year: €6.4 million) in specialized, interdisciplinary and management-related training programs in Germany alone. 14,998 male and 3,336 female participants (18,334 people; previous year: 12,669 employees) benefited from 4,441 training activities in 2018 (previous year: 3,866) over 24,829 days (previous year: 21,705).

A strong commitment to professional training

As well as university graduates, the operational units need qualified skilled workers. We continue our strong commitment to multifaceted training comprising qualifications and practical experience, that includes the opportunity to complete a dual course of study with a technical or commercial focus. In 2018, 831 young people (previous year: 770) in Rheinmetall companies in Germany and abroad received vocational training, 424 of whom were based in Germany (previous year: 401). In the year under review, 66% of the young people in the Rheinmetall Group received industrial technical training, 18% received training for commercial careers, while 16% completed a dual course of study. The share of female trainees in the Rheinmetall Group was 16.0% (previous year: 14.9%), while the ratio in Germany was 19.1% (previous year: 19.2%). The apprenticeship ratio was 4.0% of the workforce for the German locations (previous year: 3.9%) and 3.8% (previous year: 3.7%) for the Rheinmetall Group as a whole. In 2018, 409 people started their training in the Rheinmetall Group (previous year: 455), of whom 126 people (previous year: 219) were at Rheinmetall companies in Germany.

In the same year, 135 trainees (previous year: 106) took up temporary or permanent employment after successfully completing their training. Within the wide spectrum of training courses for skilled occupations on offer during the fiscal year, industrial mechanic, machining mechanic, qualified IT specialist for application development and industrial business manager represented the most important professions for the trainees in Germany. Rheinmetall invested €13.1 million (previous year: €12.1 million) in training at the sites in Germany in 2018.

Looking ahead to the 2020 training year, work was already started in March 2018 under the heading "Training @Rheinmetall – the best4you" on compiling a toolbox for even more targeted marketing of training by the German companies, which is additionally intended to reinforce our brand identity. In addition to extensive advertising material, this also contains instructions for our presence on social media, at trade fairs and on the Internet. The mission statement that has been developed for our training program in this connection presents the advantages of training at the Rheinmetall Group in a target group-specific, contemporary design.

Modern remuneration systems

Appropriate, fair and standard market pay systems are a key aspect in recruiting and retaining dedicated staff at the company. Rheinmetall offers attractive contractual terms. In addition to the category of work, these are based on the content of the role and the amount of responsibility and are linked to market rates. In addition to fixed remuneration components in line with market requirements, performance-related bonuses and variable salary components are also paid.

The "Management by Objectives" concept is linked to variable salary components for managers and employees not covered by collective wage agreements. An individual variable portion of income is paid in accordance with the achievement of individually agreed targets and depending on the company's performance. Depending on the extent to which targets are achieved, this amounts to between 0% and 200% of variable target income. The fact that these income components are based on targets provides incentives for employees to act independently and to take on challenges.

Division heads, managers and executives receive a long-term incentive in addition to this short-term component. This is geared towards long-term corporate success and includes payment of 40% of the long-term incentive amount in Rheinmetall shares, which are subject to a four-year lockup period. The number of shares granted is based on a reference share price which corresponds to the average price on the last five trading days in February of the subsequent fiscal year. 60% of the long-term incentive amount is paid in cash and is also used to pay tax on the Rheinmetall shares immediately.

The company's success benefits employees, including staff covered by collective wage agreements in Germany, in two ways: Firstly, employees receive an annual bonus subject to the annual performance put in by their business unit or sector and, secondly, the increase in the value of the company achieved is paid out in a success-oriented component in the company pension, thus leading to improved support in old age.

Employee share purchase program

The employee share purchase program "My Share Rheinmetall AG 2.0" was launched on March 1, 2018 for the employees of participating German companies. The system that has been newly introduced with this program offers an individual monthly savings plan and provides for shares to be allocated after a two-year holding period. The program is divided into a basic and an extended savings plan, to which Rheinmetall contributes a 30% employer allowance.

Non-financial aspects of business activities
Employees

Internationality and diversity

The international nature of our business activities means that people from many different countries are employed in our company. With locations on six continents, supply relationships in 144 countries, 12,624 employees abroad (50.6%) and 73 nationalities represented at Rheinmetall in Germany, internationality and diversity have long been part of everyday life in the Rheinmetall Group and are key factors in why we remain successful together in our global business activities despite all dissimilarities. At the end of fiscal 2018, 821 employees at our German companies were foreign nationals (previous year: 769). The management teams are made up of German and foreign managers. Multinational teams work on major projects. In addition, 63 German employees were posted to Group locations outside Germany (previous year: 75) in 2018. We view our employees' diversity as a strategic factor for success. It is what makes us attractive to applicants. There is great potential for further growth by the Rheinmetall Group in this diversity and the opportunity to attract and retain the best talents.

The activities of the Diversity sector first created by Rheinmetall Automotive in 2017, the responsibilities of which were extended to the Defence division in 2018, are planned to be gradually and systematically expanded in the Rheinmetall Group's companies in the next few years. One of the things that our training concepts and planned personnel development measures aim at is the appropriate participation of women in management.

By signing the principles of social responsibility in October 2018, the parties stress the importance of human and cultural diversity for working together, an inclusive and respectful corporate culture and tolerance in dealing with each other. The global framework agreement contains regulations governing compliance with international human rights, fair working conditions and the rights of employee representatives. The contents of the agreement were negotiated with the European Works Council. Representatives of IG Metall and the international trade union confederation IndustriALL Global Union were provided support through accompanying consultancy and coordination processes.

Inclusion

We consciously encourage autonomous and equal participation and create the conditions needed for this. As long ago as 2002, we formulated key principles and inclusion targets with the Group representative body for severely disabled employees in a framework integration agreement to this end. An action plan for employing people with disabilities was developed for the German companies of Rheinmetall AG with the representative body for severely disabled employees, which sets out the intention to enter into an agreement with the Group representative body for severely disabled employees of the Group Works Council containing specific targets for the employment of severely disabled people. The Cologne Integration Office conducted a training course for HR managers and representatives of severely disabled employees in order to communicate the legal basis and provide information on funding opportunities.

People with disabilities or employees with health problems are integrated into the working life at Rheinmetall, where they are able to bring their talent and skills to the table and prove what they can do. Once again, the focus here is on developing existing strengths and potential. An important prerequisite for this is workstations individually adapted to the type and degree of disability, which allow the employees concerned to achieve work of the same quality as that of colleagues without disabilities. In the year under review, the German-based Rheinmetall Group companies employed 555 severely disabled people (previous year: 457), who are represented by the Group representative body for severely disabled employees.

Work-life balance

Career success depends, among other things, on how content an employee is outside of their working hours. Many employees want to take greater account of individual life stages and specific life situations in their working life and wish to create a more healthy balance between their professional goals and their family and private interests through more flexible working hours. For us, it is important to support our employees with a family-friendly HR policy. Options including working hour models with varying weekly working hours and a range of part-time options as well as flexitime on trust allow employees a more flexible timeframe and, in turn, greater freedom. There are also agreements on remote working in some German companies of the Rheinmetall Group. Rheinmetall also offers parents financial support in helping them to find individual childcare solutions for their child or children at German sites. Furthermore, we provide a family service throughout Germany to support employees in matters concerning career and children and career and care through advice and assistance. In 2018, 123 employees (previous year: 105) were on parental leave in the German companies (89 female employees, 34 male employees; previous year: 70 female employees, 35 male employees). In the year under review, the opportunity to be temporarily released from work, either fully or partly, in order to care for close relatives went unused (previous year: one female employee).

Constructive dialog for fair working conditions

Corporate co-determination is a long-standing tradition at Rheinmetall. We respect the concerns of our employees and protect their fundamental right as part of the freedom of association to join trade unions and to be represented by them internally and externally on the basis of national laws and regulations. The global framework agreement on the principles of social responsibility, which was signed in October 2018, deals with issues such as the international observance of human rights, fair working conditions and the rights of employee representatives. It contains significantly more extensive commitments to social responsibility than the previous regulations. Statements on the corporate culture and on the constructive cooperation between the companies of the Rheinmetall Group as well as the representative organizations of the employees and unions can also be found in the agreement for the first time.

Working with the employee representative organizations and trade unions we strive to treat each other fairly and to achieve a trustful and constructive exchange of views to reconcile the interests of the company and the employees. The Group's Works Council and the European Works Council are key partners in this respect. Workforce representation is based on local works councils or general works councils. They represent the rights of employees to the managers of the companies of the Rheinmetall Group. Matters, which are of relevance for a cross-company division or a corporate sector, are dealt with in the Sector Works Council or the Automotive Sub-Works Council. Topics, which can only be dealt with uniformly for all Group entities in Germany, are discussed in the Group Works Council. While the codetermination of employees in Germany is regulated by law, in other countries it is based on the respective national laws and regulations. In the case of cross-border issues, the European Works Council, which has been in existence since April 2000, looks after employees' rights to information, consultation and advice. We keep the Economic Committees of the Group Works Council and the general works councils informed about the economic situation and the changes in the Rheinmetall Group. In the Supervisory Board of Rheinmetall AG, which is based on joint representation, the employees are also represented by two trade union representatives, five elected employee representatives and one representative of the managerial staff.

Risks

We provide information on avoiding or reducing personnel risks on page 77.

Non-financial aspects of business activities
Procurement and the supply chain

Management approach

The quality of our products is significantly affected by the quality of the raw materials, parts and components supplied. We expect a high quality assured by internationally recognized standards such as ISO 9001, IATF 16949 und AQAP 2110/2210 from our suppliers. Our suppliers are selected on the basis of the quality, reliability, performance, suitability and price of the products or services offered. Compliance with the exacting requirements and standards is ensured through international purchasing activities, annual supplier reviews, quality and reliability checks on suppliers, and possible alternative suppliers.

Purchasing organization non-production material

In January 2018, the new purchasing organization for non-production material (NPM), which is responsible for the whole Rheinmetall Group, started its work, which is managed by the Purchasing Council NPM. By NPM we mean all products and services that are purchased by the Rheinmetall Group but do not become part of the final products. This includes, for example, production equipment, processing tools, packaging, office material, freight but also consultancy services and travel management. The task of the new purchasing organization is to improve Rheinmetall's market position vis-à-vis suppliers and to achieve better purchasing conditions. This ranges from lower prices to more favorable, standardized payment and delivery conditions.

Rheinmetall Automotive

The "Supplier Portal: SupplyOn" tool has been introduced throughout the world for Rheinmetall Automotive in close collaboration between the Automotive divisions Mechatronics, Hardparts and Aftermarket. SupplyOn is the shared supply chain collaboration platform of a growing number of globally active companies, most notably from the Automotive and Aerospace sectors, which makes business processes between customers and suppliers more transparent and more secure. In an initial step, three modules (Business Directory, Sourcing and Project Management) were configured and implemented, with which optimized purchasing processes can be transmitted in an online format. Possible extensions, for example to logistics and quality (complaints process and supplier assessment), are under consideration.

Rheinmetall Defence

Supply chains in the defence industry are characterized by very complex structures: supply chains in this industry easily comprise up to eight stages for the needs of Rheinmetall Waffe Munition and Rheinmetall Landsysteme, for instance. The high proportion of specific materials and processes combined with a broad product range leads, as is generally the case in this industry, to a high proportion of single and sole-sourcing, also because only a few companies throughout the world completely manufacture or command the very specific products and processes. In the defence technology industry, switching to new suppliers is very costly, both from a financial and time-related perspective. The qualification of products carried out by military authorities is linked not only to the performance of the product itself but also to the manufacturing process, manufacturing location and suppliers. A change of suppliers therefore automatically results in costs for re-qualification or even new shelling campaigns, for instance. The procurement business in the area of ballistic protection has the characteristics of a project, i.e. it is characterized by intermittent production by our suppliers. This requires a high level of quality assurance measures. Furthermore, specific legislation, such as the War Weapons Control Act, the Foreign Trade and Payments Act, the International Traffic in Arms Regulations (ITAR), to cite just a few, must be taken into consideration for procurement in the Defence sector.

Transparency in the supply chain

We also wish to anchor our values and principles in our supply chains and therefore expect our business partners to share our principles regarding responsible and fair conduct to employees, customers, suppliers and the public and demonstrate this responsibility accordingly. We therefore support and explicitly encourage our business partners to take into account and to apply the principles laid down in our Supplier Code of Conduct, which was published in January 2018, in their own corporate policy and to view them as an advantageous basis for further business relationships. With this Supplier Code of Conduct, Rheinmetall also complies with the guiding principles for the automotive industry for improving sustainability in the supply chain, which have been developed by the Association of the German Automotive Industry (VDA) and which describe the minimum expectations regarding ethical business conduct, environmental standards, working conditions, human rights as well as harassment and discrimination.

Transparency in the automotive supply chain

The automotive industry consists of a complex network of globally active players. A distinction is made between original equipment manufacturers (OEMs), first tier suppliers and second and third tier suppliers. Manufacturers and suppliers are closely linked in working together to develop and produce vehicles. Automotive manufacturers have been working for some time to align their production ever more closely with the principles of sustainability. The issue here is anchoring economic, ecological and social objectives vertically, i.e. across all stages of the value added chain. Therefore, when selecting suppliers or even preselecting suppliers, the evaluation of whether the respective sustainability standards, which include, among other things respect for employment and social standards as well as internationally recognized human rights, are complied with in the delivery chain is increasingly significant.

The automotive manufacturers BMW Group, Daimler AG, Ford, Honda, Jaguar Land Rover, Scania CV AG, Toyota Motor Europe, Volkswagen Group, Volvo Cars and Volvo Group (publication in April 2018) are members of the European Automotive Working Group on Supply Chain Sustainability. Under the leadership of CSR Europe, the European Business Network for Corporate Social Responsibility, this group is working on improving corporate social responsibility in the automotive supply chain. The self-assessment questionnaire that they developed and that covers 23 positions on six topic areas (Company Management, Social Sustainability, Business Conduct and Compliance, Environmental Sustainability and Supplier Management and Special Areas) is currently used by these OEMs, with the exception of Ford Motor Company and Groupe PSA, which for their part carry out questionnaires on sustainability and compliance issues via the Automotive Industry Action Group (AIAG) and Ecovadis platforms. The sustainability performance of suppliers is increasingly taken into consideration when contracts are awarded.

Rheinmetall Automotive holds a first tier position in the value-added chain of automotive production, i.e. we supply the automotive manufacturers directly and not via other suppliers or system integrators. The self-assessment questionnaire mentioned above has to be submitted by the European Rheinmetall Automotive plants at regular intervals, so that the OEMs can analyze and assess the services and progress in terms of sustainability and determine the degree to which their requirements have been met. Individual OEMs now also conduct in-depth on-site checks and audit suppliers' manufacturing facilities based on sustainability criteria from the areas of environment, social responsibility, and integrity.

Risks

We provide information on reducing or avoiding procurement risks on pages 76 and 83 et seq.

Non-financial aspects of business activities
Compliance

Management approach

The reputation of Rheinmetall, the success of the business and the trust of customers, investors, employees and the general public depend not only on the quality of our products and services, but also to a large degree on good corporate governance and, in particular, on effective compliance processes. In line with our values and rules, we are committed to impeccable conduct characterized by responsibility, integrity, respect and fairness. We are an honest, loyal and reliable partner to our stakeholders.

Rheinmetall stands for clean business. We would rather not do business than breach the law. Compliance serves to safeguard our business success on a lasting basis. The members of the Executive Board and managers, executives and employees naturally have an obligation to comply at all times in their working environment with all the applicable country-specific laws, guidelines and regulations, to conduct themselves correctly in business dealings, to preserve the company's tangible and intangible assets and to avoid anything that may result in operational or financial disadvantages or damage to the image of individual companies or the Rheinmetall Group. The Executive Board takes a zero-tolerance approach to illegal and/or unethical behavior and to corrupt business practices, no matter what the circumstances.

International business activities

In the day-to-day business of an international company, the different national political and legal systems as well as cultural values, customs and societal norms of different cultural groups have to be taken into account. In addition to the applicable legislation of the countries of exportation, European Union regulations as well as anti-corruption laws such as the US Foreign Corrupt Practices Act, the UK Bribery Act and the French Sapin II Anti-Corruption Act must be strictly observed. The requirements that our companies have to fulfill are therefore many and varied. With deliveries made to 144 countries around the globe in 2018, management and employees now more than ever need guidance when it comes to national and international business and in relations with business partners, office holders, authorities and other state bodies in order to avoid potential errors and any resulting reputational, business or liability risks.

According to the 2018 Corruption Perceptions Index from Transparency International, which ranks 180 (previous year: 180) countries in terms of the degree of perceived corruption in the public sector, we generated around 70% of our sales in countries with a very low or low corruption risk in the year under review (previous year: around 70%).

Compliance organization

Illegal conduct can cause many different types of damage and can have serious consequences, such as the discontinuation of business relationships, exclusion from orders, negative assessments on capital markets, imposition of fines, the absorption of profits, claims for damages as well as civil or criminal proceedings. There is also the risk of significant and lasting damage to the Group's reputation and thus a detrimental effect on its market position. Compliance at Rheinmetall is therefore taken very seriously and has for a long time been an integral part of the corporate culture.

To provide its employees with guidance and allow them to conduct business with confidence, the company took a holistic approach and set up a compliance organization very early on providing standardized general conditions and clear guidelines for legal and rule-compliant, ethically correct and fair conduct in day-to-day business.

At the holding level, the four areas Prevention, Policy & Reporting, Investigation and Data Protection each have their own staff and are assigned to the Chief Compliance Officer (CCO), who reports directly to the Chairman of the Executive Board. Also serving as the Sector Compliance Officer, the CCO is simultaneously responsible for the Defence and Automotive sectors and in this function manages the compliance officers of the six divisions within the matrix organization. Compliance officers from the sales regions of Europe, Brazil, India, China, Japan and the USMCA region (Rheinmetall Automotive) or from the management companies of the Defence sector undertake preliminary work for the division compliance officers. The staffing levels in the Compliance unit have been gradually expanded over the past five years, with the result that there is one full-time compliance officer for around 1,000 employees today.

The area of responsibility was divided into the sections Prevention, Policy & Reporting, Investigation, and Data Protection in the year under review so that the performance of the tasks can be enhanced still further. Furthermore, the Data Protection and Policy Management functions were integrated in the compliance organization. In addition, the contents of the tasks were allocated to the related functional departments of Legal and Internal Audit. Moreover, the separation of the Legal and Compliance units was completed in the divisions of Rheinmetall Automotive. The organizational connection of the foreign sites and companies has additionally been strengthened.

The Chief Compliance Officer, who regularly reports to Executive Board meetings on compliance issues, keeps the Executive Board and Supervisory Board's Audit Committee constantly informed of the status and effectiveness of the compliance management system and of the latest developments. In serious cases, the committees are informed immediately. In addition to the Executive Board members of the Automotive and Defence sectors, the heads of the divisions will also be kept informed monthly by Corporate Compliance of current developments in the area of compliance, new rules, planned training measures or possible compliance infringements and the status of possible investigations. Furthermore, the monthly standard reporting was implemented in the international subsidiaries.

Compliance management system

Compliance is taken into account as an aspect of risk in decision-making processes, not only when it comes to considerations regarding the strategic and operational alignment of the Rheinmetall Group, but also in day-to-day business. The central compliance management system, with its integrated and dynamic focus on constantly updated key risk aspects, such as corruption, cartels and breaches of export controls, is firmly anchored in the Group-wide management and control structures and includes all instruments, processes, guidelines, instructions and extensive measures intended to ensure that procedures in the companies of the Rheinmetall Group comply with the applicable country-specific legislation, general legal conditions, regulatory provisions and the company's own guidelines. It also creates an organizational structure that allows the applicable standards to be publicized across the divisions. If binding legal regulations in individual countries deviate from the rules set out in the compliance management system, the stricter regulation shall apply.

The compliance management system is updated at regular intervals, not only in line with the applicable legal requirements but also in the light of new findings from reporting, comparisons with other compliance systems and the assessment of external specialists. It is also reviewed on an ad-hoc basis if any breach of compliance regulations is suspected or discovered. Implementation of the compliance management system is monitored by monthly reports prepared by the Compliance Officer for the Corporate Compliance Office and by routine and special audits conducted by Internal Audit and the compliance organization.

Non-financial aspects of business activities
Compliance

Compliance Officers also monitor important transactions in the companies, such as mergers and acquisitions, the establishment of joint ventures, pre-employment checks and the integration of sales brokers, thereby supporting the respective departments in their work. In addition, Compliance Officers advise the people responsible in the operational units on how to take compliance into account in operational business processes.

In the area of sales support, there is a platform containing information on over 90 countries and regions. Moreover, the tender process in the Defence sector is structured to the effect that in the course of the bid/no bid decision a compliance audit using defined criteria is obligatory for projects over a certain value threshold.

The project that was commenced in May 2016 to have the compliance management system certified by an external auditing firm in accordance with the IDW PS 980 standard (Principles for the proper auditing of compliance management systems) was completed in October 2018. This audit standard sets out in detail the requirements for a generally recognized compliance management system and describes the basis on which auditors conduct voluntary audits of compliance management systems.

In this connection, the preparation of a compliance management system manual to provide a full description of the Group wide compliance structures and compliance activities was also completed in 2018. This is based on the seven-pillar model of the audit standard IDW PS 980 promulgated by the Institut Deutscher Wirtschaftsprüfer (Institute of Public Auditors in Germany).

Furthermore, the “Compliance Assessment & Monitoring” center of expertise, which conducts pre-employment checks on applicants for key positions as well as all compliance due diligence checks on new and existing business partners (e.g. purchasing, cooperation, and sales partners) on a Group-wide basis as a shared service center, started its work in February 2018. The focus lies here on determining whether the commitment is legally permissible, whether all attributable people can be identified and whether conflicts of interest are excluded, and determining the general capacity and integrity of the business partner. The local Compliance organization will continue concentrating on assessing the transaction-specific compliance risk associated with the commitment of a business partner at company level. The center of expertise will be integrated in day-to-day operational business through various technical and procedural interfaces. The selection, management and supervision of sales partners, in particular, will be fundamentally improved through the implementation of a business partner database, which started at the same time. Around 800 business partners and people who applied for key positions at the Rheinmetall Group were subjected to a check in the past fiscal year.

The Executive Board adopted a new Code of Conduct on the governing compliance and social standards throughout the Group, which contains requirements for the behavior of Rheinmetall employees, for the Rheinmetall Group in March 2018. It is available in eight languages and started to be rolled out throughout the Group in June 2018.

An agreement on compliance management applicable to the Rheinmetall Group was entered into with representatives of the Group’s Works Council in February 2018.

Training and advice

To make employees at all hierarchical levels aware of compliance risks, numerous seminars and workshops are held, some of which are tailored to specific functions such as management, buyers or sales staff. Legislation and important regulations are explained, further content is provided. Attention is also drawn to internal compliance requirements, risks and possible sanctions and, based on case studies, practical advice is given on correct conduct in specific situations during everyday work. These classroom training sessions, which also serve as a practical forum for discussions, are accompanied by interactive online programs. Each year, as part of Compliance Awareness training, employees at sites in Germany and abroad not only receive training in general compliance topics but also in the prevention of corruption, money laundering and CEO fraud, export control and antitrust and competition law. The content of the training is adjusted in accordance with the needs of the participants or supplemented with country-specific or regional peculiarities. Numerous employees of the Group once again attended classroom training programs on compliance (e.g. awareness training, targeted training for procurement and sales, or events on the War Weapons Control Act / Foreign Trade and Payments Act / weapons law) in fiscal 2018. In addition, 8,290 employees (previous year: 3,418) completed compliance training via e-learning platforms in the year under review.

Handling information

If employees have information on questionable activities that have been observed, specific breaches of regulations or business practices that may be prohibited, they can contact their line managers or various other offices within the company directly or they can contact an independent, external ombudsman who is a lawyer by profession and consequently avert losses for the company. Whistleblower systems have also been established in different formats at various Rheinmetall Group sites (including in the US, Brazil, China and South Africa). The technical requirements for the introduction of a uniform whistleblower platform for all companies in the Rheinmetall Group were examined, among other things. In the event of suspected or actual breaches, employees, but also external third parties, can contact the Compliance organization, either by phoning or e-mailing the ombudsman, sending an e-mail to the "Speak Up” address, or also phoning a designated compliance officer.

Protection is guaranteed for all whistleblowers, who need not fear discrimination. Employees involved in investigations into possible breaches of compliance will be assumed to be innocent until proven otherwise. Any information that is received will be systematically analyzed. Systematic follow-up checks will be carried out on the basis of established schedules and appropriate measures will be taken to properly clarify the facts that have been reported, with the involvement of external specialists if necessary. Confidentiality and discretion take top priority here. If necessary, we will involve the relevant authorities and cooperate with them to resolve the matter. Proven misconduct is sanctioned and entails organizational measures and, for the employees who committed the offense(s), consequences under labor law, civil law and criminal law.

The new Incident Management Policy on how to deal with suspected cases and on the standardized processing of compliance cases was introduced in the past fiscal year. This aims to guarantee that the handling of information is also independent, transparent and fair as well as being subject to high standards that are comparable across the Group. It also offers legal certainty when carrying out investigations, meaning that appropriate account can be taken of the interests of employees and the employer.

Risks

Information on reducing or avoiding compliance risks is provided on page 79.

Non-financial aspects of business activities
Social responsibility

Management approach

Social acceptance is an important requirement for economic success. Many Rheinmetall companies can look back on a long tradition. They have been connected with their sites for many years and are strongly rooted in the local community – after all, this is where their customers, employees and business partners live. Rheinmetall is a living, breathing part of society and participates actively in it and not just in a financial sense. We get involved in the areas of education, sport and culture and also provide direct support for local social projects and charitable organizations.

By adding value locally, we also contribute to regional development. Flourishing production sites do not only mean attractive, highly skilled jobs and training places close to home but also orders for local suppliers and service providers. Educational and cultural facilities around them also benefit, as do sports clubs and churches from the voluntary commitment of our employees. In addition, a large part of the sales generated by the companies returns to the respective economies via the employees, public sector and the shareholders. Capital expenditure in future growth is financed via the value added remaining in the Rheinmetall Group. We also make major contributions to society as an employer and client as well as with our products and the transfer of knowledge. We report on the creation and application of added value in 2018 on page 46.

Respect for human rights

Within its sphere of influence, Rheinmetall respects and supports the protection of internationally recognized human rights. We publicly committed to observe human rights in our previous Code of Conduct in October 2003. The importance of human rights and our commitment to observing them are also affirmed once again in the new Code of Conduct for employees of the Rheinmetall Group, which has been applicable since May 2018. The United Nations' Universal Declaration of Human Rights is recognized in its entirety in the principles of social responsibility signed in October 2018 with the European Works Council. We also appeal to all our business partners, in particular, our suppliers to follow our social principles. Our expectations of this stakeholder group are described in the Supplier Code of Conduct.

Protecting human rights in our own company and in the supply chain is a major priority of Rheinmetall. Based on the knowledge we have gained to date, we rate the risk that human rights will be violated in the employment of staff at our locations to be low, as this is related to the relevant national legislation. With a view to creating higher transparency in the supply chain, we started in the year under review to develop a comprehensive due diligence process for identifying and assessing possible human rights risks in order to prevent any violation of these rights. A number of criteria, parameters, rankings and indices, such as the Global Slavery Index of the Walk Free Foundation or the Global Rights Index of the International Trade Union Confederation or assessments from the Dutch MVO CSR Risk Check, are taken into consideration in the country-by-country risk analysis. The HR managers and staff responsible for procuring non-production material as well as the executive committee of the European Works Council are informed at the divisional level of the activities that are planned and the measures that are already structured in the course of in-house presentations.

Complaints and reports of suspected or actual human rights violations can be submitted externally to the ombudsman or using the Speak Up" program through a variety of communication channels within the framework of the Compliance organization. Points of contact have also already been set up in the companies / at the sites, however. Employees can contact executives, HR managers or the Works Council in full confidence. Existing compliance policies guarantee that circumstances that are reported to them will be followed up on.

Corporate citizenship

Social engagement is a long-standing tradition at Rheinmetall. It always goes beyond the plant boundaries. We play a part in areas such as education and support, but also provide direct support for local cultural and social projects as well as charitable organizations.

As the locations where we operate have very different requirements, the decision on which project to support is incumbent on the respective management teams of the companies or on the Executive Board of Rheinmetall AG. In the year under review, the Rheinmetall Group spent around €585 thousand on sponsorship and donated €425 thousand in total.

Rheinmetall is also committed to promoting interest in technology, science and craft in the areas where it is located. Understand technology and try it out for yourself. This is the slogan under which young people are given the opportunity – as part of school partnerships, for example – to get to know technology through hands-on tasks and develop a better understanding of links between technology and commerce by gaining an early insight into the industry.

The Rheinmetall Group companies also participate in Germany-wide action days and offer internships in a wide range of disciplines to school students or in the context of new vocational training or retraining for adults. Over the course of 2018, a total of 297 interns (previous year: 273) gained their first experiences of day-to-day company life.

With the Rheinmetall Scholarship Program, we are involved in the Deutschlandstipendium, a scholarship set up by the German Federal Ministry of Education and Research (BMBF). With this, we are pursuing the aim of attracting young high potentials from various disciplines to Rheinmetall and provide grants for 16 students (previous year: 20) at four German universities (Bremen, Hanover, Magdeburg and Munich). The students are looked after under the talent retention program “Next Generation Talents”, which includes mentoring and support programs in addition to company-specific training modules.

It is not just employees that give companies a face – it is also their locations. These are perceivable and linked to their environment through countless relationships. In recent years, we have invested millions in, among others, in Düsseldorf (entrepreneur city), Neuss (Niederrhein plant) and Unterlüss (innovation and training center) and, in doing so, also made a clear commitment to Germany as a location: to the performance and expertise of our employees, to the attractive framework conditions locally and not least to our social responsibility for the respective region.

Non-financial aspects of business activities
Energy management

Management approach energy

We need a sufficient energy supply, which is associated with corresponding CO_2 emissions, to manufacture our products and operate our buildings and infrastructure. The reduction of energy-related payments is therefore a key component of corporate policy in the Rheinmetall Group.

It is a material objective for us to reduce energy consumption as far as possible through stringent processes in day-to-day operations within the context of that which is technically feasible and economic circumstances. Our responsibility in dealing with energy resources requires the achievement and review of specific targets for energy savings, where it is technically and organizationally feasible and where it makes economic sense, in addition to the systematic determination, analysis and measurement of the energy aspects of significance for our business models.

Development of an energy management system

A central energy management system is gradually being developed in the Rheinmetall Group, starting with Germany, in which, besides the Holding site in Düsseldorf, other Rheinmetall Defence sites, which are certified in accordance with the energy management system DIN ISO 50001 or undergo energy audits in accordance with DIN EU 16427, were included.

In addition to the systematic recording, analysis and measurement of energy flows, energy management includes the setting of energy conservation targets, the deduction and implementation of energy saving measures and the continuous monitoring of all key activities, which can help to increase energy efficiency.

As of December 31, 2018, nine of the 24 German Rheinmetall Defence sites in addition to three companies at the Düsseldorf site were part of what is known as a “Certification” network. A repeat audit confirmed that the requirements of DIN ISO 50001 were met at all participating sites in the period under review. Plans are in place to include the German sites of Rheinmetall Automotive, which have had their own energy management systems for many years, step by step in the overall standardized Rheinmetall energy management system in addition to other Rheinmetall Defence sites in Germany. To this end, a draft energy management policy was developed in the year under review, which presents the main features of a future standardized Group energy management system and describes individual management elements for establishing and further developing a system of this kind.

A software program was introduced in fiscal 2018 in order to support the Group-wide recording of annual energy consumption data that is planned to be implemented in several steps and also to enhance the quality of the data. This software for operational energy management has already been used at twelve of the German sites of the Defence and Automotive divisions to monitor and analyze their energy data.

Energy management working group

An Energy management working group was established, in which the Automotive and Defence sectors are represented, to control energy management under the direction of the central energy manager, Rheinmetall Group. In addition to developing the energy strategy, it addresses the development, specification and testing of processes and measures for a Rheinmetall Group energy management system.

Control, documentation and measurement instruments are also developed, which firstly allow energy efficiency to be compared and secondly provide objective justification for investment decisions and demonstrate their economic efficiency.

No review of the contents of this section by the auditor

Targets for energy savings

Increases in energy efficiency can be achieved in day-to-day operations, for instance, through the use of cogeneration, cold and heat recovery, exchanging inefficient illuminants, using compressor waste heat and ensuring that ventilation systems are the correct size.

A reduction in the activity-based energy consumption based on the energetic baseline of 2% per year was set as an initial target for the Rheinmetall Defence companies that are already certified under an energy management system. It proved possible to achieve this target in the year under review. A cut in the specific electricity consumption per attendance hour and the reduction of the specific heating energy consumption per heated area of 10% in each case were also set for these companies as a medium-term goals to be achieved by the end of 2022. Taking into consideration the measures that have already been implemented and those planned by the end of 2019, we currently expect the targets to be achieved on schedule.

Consumption data and CO_2 emissions

		2018	2017
Energy consumption			
Total	MWh	**1,034,098**	**1,041,778**
Electricity (purchased from third parties)	MWh	526,229	520,873
District heating	MWh	72,901	72,018
Heating oil	MWh	33,410	46,254
Diesel	MWh	17,233	17,610
Natural gas	MWh	215,099	209,476
Coal	MWh	114,398	128,488
Liquefied petroleum gas	MWh	14,775	15,048
Renewable energies	MWh	40,053	32,012
CO_2 emissions			
Total	t CO_2	**402,118**	**428,526**
Electricity (purchased from third parties)	t CO_2	282,585	302,106
District heating	t CO_2	20,923	20,669
Heating oil	t CO_2	8,920	12,350
Diesel	t CO_2	4,601	4,702
Natural gas	t CO_2	43,235	42,105
Coal	t CO_2	38,323	43,043
Liquefied petroleum gas	t CO_2	3,531	3,551

Sources: CO_2 conversion factors: German Federal Environment Agency| Electricity 0.537 t/MWh | District heating 0.287 t/MWh | Light fuel oil 0.267 t/MWh | Diesel 0.267 t/MWh | Natural gas 0.201 t/MWh | Ruhr high-grade coal 0.335 t/MWh | Liquefied petroleum gas 0.239 t/MWh

87 of the Rheinmetall Group's 189 companies were included in recording consumption data in 2018. The data in these tables were determined on the basis of internal processes. They come from existing management systems and are based on meter readings or invoice amounts (if available in each case) and estimates by the companies. The data are requested in the operating units, collected with great care and processed. Nevertheless, errors cannot be entirely ruled out in the collection, processing or transmission. The data in these tables (including the correction the values for 2017) are not audited in the course of the audit of annual financial statements by PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC), Frankfurt am Main, Düsseldorf branch.

No review of the contents of this section by the auditor

Corporate governance
Corporate governance report

In the following chapter, the Executive Board and Supervisory Board will report on corporate governance in the Rheinmetall Group in accordance with item 3.10 of the German Corporate Governance Code. The corporate governance declaration* in accordance with sections 289f and 315d HGB can also be found here.

Corporate governance

Rheinmetall has traditionally been committed to a responsible, fair and reliable corporate policy which is geared towards the use and expansion of entrepreneurial potential, achieving medium-term financial targets and increasing the value of the company on a systematic and sustainable basis. The law on stock corporations, capital market law and the right of co-determination, the company's Articles of Association and the German Corporate Governance Code, which is based on internationally recognized standards, form the basis for the organization of management and monitoring at the company, with the aim of making structures transparent and thus strengthening the trust of national and international investors, business partners, analysts, media, employees and the public in Rheinmetall AG's business policy, management and supervision and securing it in the long term.

Shareholders and Annual General Meeting

Shareholders of Rheinmetall AG exercise their rights of determination and control within the framework of the options provided by law or the company's Articles of Association before or during the Annual General Meeting, which is convened by the Executive Board or Supervisory Board as prescribed by law, or when it appears necessary in the interests of the company.

The Annual General Meeting is convened, the agenda items on which a vote will be taken are announced, and the conditions of participation and rights of shareholders are explained within the deadlines prescribed by law and the company's Articles of Association. All documents and reports required by stock corporation law, supplementary information on the Annual General Meeting and explanations of shareholder rights will be made available on the company's website, on which any countermotions or nominations from shareholders will also be published. Each share grants one vote in ballots. This does not include treasury shares held by the company.

The company's Annual General Meeting took place on May 8, 2018 in Berlin. During voting, 27,854,144 shares (previous year: 22,774,800), accounting for 63.95% of the share capital (previous year: 52.3%), were represented. Shareholders and shareholder representatives voted with significant majorities of between 89.9% and 99.9% in favor of the six resolutions proposed by management on the agenda. Information about attendance and the results of votes were published online on Rheinmetall's website after the Annual General Meeting.

Dual management system

Rheinmetall AG is subject to the provisions of German stock corporation law, of the German Codetermination Act and the capital market regulations as well as the provisions of the company's Articles of Association and the Rules of Procedure for the Executive Board and the Supervisory Board. With its Executive Board and Supervisory Board, Rheinmetall AG has a two-tier management and monitoring structure. The Executive Board and Supervisory Board are responsible for and feel responsible for the interests of the shareholders and the well-being of the company. They work together closely and trustfully in the interests of Rheinmetall.

* Contents not reviewed by the auditor

Diversity in the Supervisory Board and Executive Board

The Supervisory Board and Executive Board of Rheinmetall AG must be filled with personalities who provide a balanced mix of all the qualifications, knowledge, skills and personal characteristics needed for the management and supervision of a capital market-oriented, large company operating in the global Automotive and Defence industry.

The members of the Supervisory Board should possess, individually and collectively, the necessary prerequisites and experience, which are appropriate to the type, scope and complexity of the business as well as the risk structure of the company so that they can act as constructive supervisors and competent advisors to the Executive Board.

In accordance with sections 96(1) and (2) and 101(1) AktG in conjunction with section 7(1) No. 2 of the 1976 German Codetermination Act, the Supervisory Board of Rheinmetall AG comprises eight shareholder representatives and eight employee representatives, at least 30% of whom are women and at least 30% of whom are men.

In the year under review, the Supervisory Board had four female members – two female employee representatives and two female shareholder representatives, which means that the regulation on a minimum quota for women and men on the Supervisory Board is complied with, having regard to the provisions of section 96(2) sentence 3 AktG.

In the Supervisory Board of Rheinmetall AG, which is based on joint representation, the employees are represented by two trade union representatives, five elected employee representatives and one representative for the managerial staff. In each case, three employee representatives are elected to the Supervisory Board from the Automotive and Defence sectors.

The shareholder representatives are determined by the Annual General Meeting. The nominations to the Shareholders' Meeting are based on the recommendations of the Nomination Committee, which take account of balance and the differences in the knowledge, skills and experience of the shareholder representatives proposed for election to the Supervisory Board.

In its Rules of Procedure, the Supervisory Board has stipulated that, as a rule, consideration cannot be given in the nominations to people, who have reached the age of 75 at the date of the election. It takes the view that a mixed age structure in the Supervisory Board serves the interests of the company more effectively. On average, the members of the Supervisory Board were around 58 years old in the year under review, where the youngest and oldest members were aged 39 and 70 respectively.

The Supervisory Board has decided not to stipulate any regulatory limit on membership of the Supervisory Board. It is convinced that a rigid regulatory limit on membership of the Supervisory Board, without looking at the respective individual Supervisory Board members, is not a suitable means of ensuring the further improvement and professionalization of the work of the Supervisory Board. The members of the Supervisory Board had been members of that body for an average of 70 months on December 31, 2018.

The targets for the composition and membership of the Supervisory Board resolved in the Supervisory Board meeting in December 2010 in accordance with item 5.4.1 of the German Corporate Governance Code, which form the basis for a diversity concept, were supplemented and made more specific by a comprehensive skills profile, comprising various parameters, for the shareholder representatives in fiscal 2017.

The composition of the Supervisory Board of Rheinmetall AG – focused on the specific requirements of the company – is balanced as a whole and thus serves to ensure that qualified individuals advise the Executive Board and monitor its management activities effectively.

Corporate governance
Corporate governance report

Individually and as a whole, the members of the Supervisory Board have the necessary qualifications, knowledge, skills and specialist and professional experience to perform their advisory and monitoring duties properly in an international technology group, and they possess the necessary qualities to successfully carry out the activities of the Supervisory Board. In addition to commitment, the ability to work as a team and debating skills as well as having adequate time available, these include integrity and confidentiality in particular. The members of the Supervisory Board are sufficiently independent and reflect the international activities of Rheinmetall Aktiengesellschaft. Supervisory Board members have in-depth knowledge of the branches of industry, sectors and core areas of expertise that are key to the company. They have managerial experience in a corporate or operational context and complement each other in terms of their different educational and professional background, their age structure, professional career and their qualifications.

In accordance with Article 6(1) of the Articles of Association, the Executive Board of the company is composed of at least two persons. The number of members of the Executive Board is determined by the Supervisory Board. As in the previous year, the Executive Board of Rheinmetall AG comprised four members in the year under review. The responsibilities of the members are shown on page 119.

In accordance with the decision of the Supervisory Board from August 2017, the Executive Board of Rheinmetall AG does not have any female members for the time being and will not have any until June 30, 2022. This is due – in addition to a continuing lack of supply of external female managers in the Automotive and Defence sectors – to the still insufficient number of women in the management levels of the Rheinmetall Group.

The Supervisory Board supports the Executive Board's objective of promoting female managers to positions in top management in a gradual and structured way. Various measures and activities as part of career planning and career development have already been adopted with the aim of preparing women for management positions, both in terms of content and on a personal level, in the medium and long term to ensure that, unlike in the past, more women will be available in the future as candidates to assume management responsibility. This target is to be achieved without abandoning previously equally important membership principles: when filling management positions, the best professional and personal qualifications will be decisive regardless of gender.

The Supervisory Board of the company is of the opinion that the currently appointed members of the Executive Board of Rheinmetall AG form a managing committee with strong leadership qualities and, considering the respective requirement profile of the area of responsibilities and in the light of their training, professional qualifications, expertise, management qualities, experience and success, have proven the best choice both professionally and personally for the company and that they are the most appropriate appointments for the respective areas. The Supervisory Board considers continuity in terms of staffing in the top management in the best interests of the company and additionally a key component for the further sustainable economic success of Rheinmetall AG.

Armin Papperger, Helmut P. Merch, Horst Binnig and Peter Sebastian Krause, all aged between their mid-fifties and their early sixties and on average 58.5 years old at the end of the reporting period, were systematically prepared for more demanding management roles in various functions and hierarchical levels in the Rheinmetall Group and have constantly assumed more responsibility for larger entities during their career in the Group. They know the Automotive and Defence industry, the industry cycles of the entities and the challenges to which an international technology group is exposed today, and are confronting future issues such as innovation and digitalization.

Composition of the Executive Board

In accordance with Article 6(1) of the Articles of Association, the Executive Board of the company is composed of at least two persons. The number of members is determined by the Supervisory Board. In the year under review, Armin Papperger, Helmut P. Merch, Horst Binnig and Peter Sebastian Krause were appointed as members of the Executive Board. The responsibilities were defined as follows in the Rheinmetall Group Manual, which was drawn up within the framework of ONE Rheinmetall and adopted by the Executive Board in October 2018:

Responsibilities of members of the Executive Board of Rheinmetall AG

Armin Papperger	Helmut P. Merch	Horst Binnig	Peter Sebastian Krause
SECTORS			
Defence		Automotive	
CENTRAL DEPARTMENTS			
Communications	Accounting	Information Technology	HR Strategy & Policies
Compliance	Controlling	New Technology	Labor Relations
Corporate Social Responsibility	Finance | Treasury		Management Development | Rheinmetall Academy
Internal Audit	Purchasing Non-Production Material (NPM)		
Legal	Tax		
Security			
Strategy			
SHARED SERVICES			
Business Excellence	Insurance		Payroll
Real Estate	Offset Management		Recruiting

As of December 31, 2018

Working methods of the Executive Board

The Executive Board is responsible for the overall management of the company. It defines long-term strategic orientation and corporate policy as well as the structure and organization of the Rheinmetall Group and allocates resources. The Executive Board manages the company on its own initiative in the interests of the company, i.e. taking into consideration the concerns of shareholders, customers, employees and other groups connected to the company (stakeholders), with the aim of creating sustainable value added and free from instructions from third parties in accordance with the relevant laws, the company's Articles of Association and the applicable Rules of Procedure and having regard for the resolutions of the Annual General Meeting. It represents the company to third parties.

The Rules of Procedure for the Executive Board govern the Board's work, the allocation of duties among the respective Executive Board members, matters reserved for the Executive Board as a whole and the majority required for Executive Board resolutions. In accordance with the Rules of Procedure for the Executive Board, each member of the Executive Board manages the area of responsibility assigned to him under the business distribution plan independently and on his own responsibility, whereby the Executive Board as a whole must be informed on an ongoing basis of key processes and developments relating to business and important measures. Any matters that are of fundamental importance or that have far-reaching consequences require a resolution to be passed by the Board as a whole.

Corporate governance
Corporate governance report

The Executive Board develops the strategic orientation of the company, agrees it with the Supervisory Board and ensures its implementation. The Executive Board decides on basic issues relating to business policy and on annual and multi-annual planning. It ensures effective management of opportunities and risks as well as risk controlling at the company, implements appropriate measures to ensure that laws, provisions, official regulations and internal corporate guidelines are observed and helps to ensure that subsidiaries comply with these. Furthermore, the Executive Board bears in mind diversity when filling management positions at the company and makes sure that adequate attention is given to women.

Details of cooperation between the Executive and Supervisory Boards can be found in the company's Articles of Association and the Rules of Procedure for the Supervisory Board of Rheinmetall AG, which govern the Executive Board's information and reporting requirements as well as transactions and measures requiring approval. This applies, for example, to the acquisition and sale of shareholdings, investment planning, issuing bonds and taking out long-term loans. The Executive Board informs the Supervisory Board regularly, promptly and comprehensively regarding business performance, financial position and results of operations, planning and achievement of targets, as well as regarding compliance issues, strategy and the risk situation. On the basis of these reports, the Supervisory Board monitors the legality, correctness, appropriateness and economic efficiency of management by the Executive Board.

The Chairman of the Supervisory Board shall be informed immediately by the Executive Board of any important events or business developments that could have a significant influence on the company's financial position, results of operations and net assets.

Composition of the Supervisory Board

The statutory provisions by which the Supervisory Board of the company is elected are explained on page 117.

As a rule, members of the Supervisory Board are elected for five years. They may be re-elected. The Supervisory Board members have the same rights and obligations, are required to perform their mandate in the best interests of the company and are not bound by any orders or instructions.

When candidates are proposed for election to the Supervisory Board, attention is paid to their professional qualifications and personal skills as well as to legal regulations on diversity in the composition of the Board and to independence as defined by the German Corporate Governance Code.

The Supervisory Board believes it already has a suitable number of independent members who do not bear a business or personal relationship to the company or members of the Executive Board that could cause a conflict of interests. To ensure the further prevention of potential conflicts of interest, the Supervisory Board does not include any members who hold board positions or perform advisory activities for key competitors of Rheinmetall AG and its Group companies.

Former Executive Board members of Rheinmetall AG are not represented on the Supervisory Board. The composition of the Supervisory Board and the terms of office of its members are outlined on page 2 of this annual report.

Working methods of the Supervisory Board

The Supervisory Board performs its activities in accordance with statutory provisions, the Articles of Association of Rheinmetall AG and its Rules of Procedure. The main contents of the Rules of Procedure concern the composition, tasks and responsibilities of the Supervisory Board, the convention, preparation and chairing of meetings, the rules pertaining to committees and quorum requirements. The Chairman of the Supervisory Board coordinates the work of the Supervisory Board, chairs its meetings and represents the Board externally. Each year he explains the activities of the Supervisory Board and its committees in the report of the Supervisory Board printed within the annual report and orally at the Annual General Meeting.

The Supervisory Board advises the Executive Board on the management of the company and monitors its management activities. The Chairman of the Supervisory Board is elected from among its members. Supervisory Board meetings are held in accordance with the provisions of the German Stock Corporation Act (AktG). As a general rule, four Supervisory Board meetings take place each calendar year, which are attended by members of the Executive Board unless otherwise stipulated by the Chairman of the Supervisory Board. Resolutions may be passed in writing, by telex (telefax or e-mail) or by telephone. The Supervisory Board passes its resolutions by means of a simple majority of members participating in the passing of the resolution. In the event of a tied vote, the Chairman of the Supervisory Board has the casting vote.

The Supervisory Board of Rheinmetall AG reviews the efficiency of its activities at regular intervals, as required by the provisions of the German Corporate Governance Code. Here, the working methods of the Supervisory Board and its committees, the routing of information from the Executive Board to the Supervisory Board and the interaction of the two boards is discussed and evaluated. The plenary assembly debates possible improvements in an open discussion and decides on any measures.

No consultancy agreements or other service or work contracts existed between members of the Supervisory Board and Rheinmetall AG during the period under review.

Structure and working methods of the Supervisory Board's committees

In compliance with legislation and commercial interests, the Supervisory Board has created five committees to perform its control and monitoring tasks efficiently. In doing so, it pursues the aim of making its work more efficient by having complex, time-consuming matters requiring extensive discussion dealt with in smaller groups and prepared for the entire Supervisory Board in the same way as proposed resolutions for decision by the Supervisory Board as a whole. In individual cases, the committees also have decision-making powers if these have been transferred by the Supervisory Board. With the exception of the Nomination Committee, which consists of three shareholder representatives, the committees are based on joint representation, with two or three shareholder representatives and two or three employee representatives in each case. Each of these committees has adopted rules of procedure that set forth their composition, duties and working methods.

Strategy Committee – The Strategy Committee deals with the strategic perspective, focus and development of the Rheinmetall Group. It discusses the principles for the Rheinmetall Group's overall strategy including the business policy and corporate orientation of the company and its corporate sectors with the Executive Board and addresses significant, specific strategic programs and measures.

Audit Committee – It is the job of the Audit Committee to support the Supervisory Board when performing its supervisory functions. It looks in particular at the consolidated and single-entity financial statements and quarterly accounts and – in addition to the accounting process – the adequacy and effectiveness of the internal control system, Internal Audit, the risk management system and the compliance management system.

Corporate governance
Corporate governance report

The Audit Committee also checks the services performed by the auditor, their qualifications and their independence and is responsible for issuing the audit engagement to the auditor of the annual financial statements, determining the focal points of the audit and agreeing the fees.

Personnel Committee – Tasks that are the responsibility of this committee include selecting suitable candidates to fill Executive Board positions, making preparations for the appointment and withdrawal of Executive Board members and the conclusion, amendment and termination of employment contracts of members of the Executive Board and other agreements with them. It is also responsible for appraising the performance of the Executive Board, regularly examining the amount, suitability and customary level of Executive Board remuneration and overseeing the structure of the Executive Board remuneration system.

Nomination Committee – The Nomination Committee submits recommendations to the shareholder representatives on the Supervisory Board for the nomination of shareholder representative candidates for election to the Supervisory Board by the Annual General Meeting.

Mediation Committee – The Mediation Committee formed in accordance with section 27(3) of the German Codetermination Act (MitbestG) submits to the Supervisory Board a slate of candidates for Executive Board membership if these have not received the required two-third majority of Supervisory Board member votes in the first ballot.

The Supervisory Board is regularly informed by the chairmen of the committees in the subsequent plenary meeting of the activities of the committees and of the content and outcome of discussions held in the respective committee meetings.

Supervisory Board and Executive Board members’ membership of other supervisory boards

In accordance with the recommendations of the German Corporate Governance Code (item 5.4.5 (1)), none of the Executive Board members performed more than three mandates on supervisory boards of listed stock corporations that were not part of the Group or on supervisory boards of companies external to the Group with comparable requirements. An overview of the memberships of members of the Supervisory Board and Executive Board of Rheinmetall AG of other statutory supervisory boards and comparable control bodies of commercial enterprises in Germany and abroad can be found from page 218.

Remuneration of board members

The basic components of the remuneration system and remuneration for individual members of the Executive and Supervisory Boards are explained on pages 130 et seq. of the remuneration report, which forms part of the combined management report.

D&O insurance

Rheinmetall has taken out Directors’ and Officers’ liability insurance (D&O insurance), which covers the activities of members of the Executive Board and Supervisory Board. This insurance provides for the statutory deductible under section 93(2) sentence 3 AktG for the Executive Board and the deductible recommended by item 3.8(3) of the German Corporate Governance Code for the Supervisory Board.

Managers' transactions

Any transactions involving shares or debt instruments of Rheinmetall AG or derivatives or other financial instruments relating to them that have been carried out by members of the Supervisory and Executive Boards or related parties (managers' transactions in accordance with Article 19 of Regulation (EU) No. 596/2014 of the European Parliament and of the Council on market abuse (Market Abuse Regulation – MAR)) were published by the company in the prescribed manner immediately after notification of the transaction was received, including on the company's website.

Managers' transactions 2018 €

Publication	Name	Status	Transaction	Shares	Price	Platform
February 15, 2018	Dr. Michael Mielke Allocation of shares as a remuneration component as part of the long-term incentive program for managerial staff of the Rheinmetall Group 2016	Member of the Supervisory Board	Allocation	292	71.43	Off-exchange
April 3, 2018	Armin Papperger Allocation of shares as a remuneration component as part of the Executive Board remuneration 2017	Chief Executive Officer	Allocation	6,876	109.07	Off-exchange
April 3, 2018	Helmut P. Merch Allocation of shares as a remuneration component as part of the Executive Board remuneration 2017	Member of the Executive Board	Allocation	3,438	109.07	Off-exchange
April 3, 2018	Horst Binnig Allocation of shares as a remuneration component as part of the Executive Board remuneration 2017	Member of the Executive Board	Allocation	3,438	109.07	Off-exchange
April 3, 2018	Peter Sebastian Krause Allocation of shares as a remuneration component as part of the Executive Board remuneration 2017	Member of the Executive Board	Allocation	2,406	109.07	Off-exchange
April 3, 2018	Dr. Michael Mielke Allocation of shares as a remuneration component as part of the long-term incentive program for managerial staff of the Rheinmetall Group 2017	Member of the Supervisory Board	Allocation	275	87.26	Off-exchange
December 7, 2018	Helmut P. Merch	Member of the Executive Board	Purchase	2,000	76.80	Tradegate
December 7, 2018	PL Elektronik GmbH	Related party of Armin Papperger Chief Executive Officer	Purchase	3,200	78.00	Tradegate
December 7, 2018	Professor Dr. Susanne Hannemann	Member of the Supervisory Board	Purchase	650	78.14	Xetra
December 7, 2018	Dr.-Ing. Dr.-Ing. E.h. Klaus Draeger	Member of the Supervisory Board	Purchase	500	78.58	Xetra
December 11, 2018	Professor Dr. Andreas Georgi	Member of the Supervisory Board	Purchase	500	77.87	Xetra
December 11, 2018	Paulina Karin Grillo	Related party of Ulrich Grillo Chairman of the Supervisory Board	Purchase	100	75.00	Xetra
December 11, 2018	Theresa Marie Grillo	Related party of Ulrich Grillo Chairman of the Supervisory Board	Purchase	100	75.00	Xetra
December 13, 2018	Professor Dr. Andreas Georgi	Member of the Supervisory Board	Purchase	500	79.4446	Xetra
December 18, 2018	Klaus-Günter Vennemann	Member of the Supervisory Board	Purchase	1,300	77.02	Stuttgart Stock exchange
December 20, 2018	Peter Sebastian Krause	Member of the Executive Board	Purchase	1,300	76.7369231	Tradegate

Transactions involving related third parties are listed in the notes to the consolidated financial statements on page 196.

Corporate governance
Corporate governance report

Compliance

An essential requirement for sustainable economic success is consistent attention to comprehensive compliance. This also includes integrity in dealings with employees, business partners, shareholders and the public, which is expressed through exemplary conduct. Compliance includes all instruments, guidelines and measures which ensure that procedures in the companies of the Rheinmetall Group comply with country-specific legislation, general legal conditions, regulatory provisions and the company's internal directives and that conduct that is based on values and conforms to the law and regulations is assured. Compliance activities focus on corruption prevention, export controls and cartel law. Additional statements on compliance in the Rheinmetall Group are provided on pages 108 to 111.

Preventing conflicts of interest

In making decisions and performing their duties, members of the Executive and Supervisory Boards must not pursue their personal interests or take advantage of any business opportunities arising for the company for their own personal gain, or grant unfair advantages to other persons. In accordance with item 4.3.3 and 5.5.2 of the German Corporate Governance Code, any potential conflicts of interest involving members of the Supervisory Board or Executive Board must be disclosed immediately. No conflicts of interest were reported to the company by any members of the Executive or Supervisory Board in the year under review.

Women in management

The German Act on Equal Participation of Women and Men in Executive Positions in the Private and the Public Sector passed by the Bundestag on March 6, 2015 regulates the setting of targets for the share of women in governing bodies and at senior management levels.

The targets and deadlines for increasing the proportion of women on the Supervisory Board, management bodies and the two management levels below the management body that are defined for Rheinmetall AG and its German subsidiaries subject to codetermination in due consideration of sector-specific circumstances are published for the reporting period from July 1, 2017 to June 30, 2022 on our company's website in the section "Corporate Governance – Ratio of Women".

Effective risk management and internal control system

Responsible handling of opportunities and risks is part of good corporate governance. The risk management system, including the accounting-related internal control system, is presented in the report on risks and opportunities on pages 72 to 89.

Accounting and auditing

Rheinmetall AG prepares the single-entity financial statements that are relevant for the dividend payment in accordance with the provisions of the German Commercial Code (HGB) and the German Stock Corporation Act. The company's consolidated financial statements are prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted in the European Union and in accordance with the supplementary provisions of section 315e(1) HGB. PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Düsseldorf branch, was elected by the Annual General Meeting on May 8, 2018 to audit the single-entity and consolidated financial statements for 2018. The Audit Committee had previously satisfied itself that the auditor was independent.

Transparency in reporting

In a time in which markets are interconnected and the flow of information is becoming increasingly globalized, communications and the quality of information are becoming more and more important to the company's success. Rheinmetall communicates openly, actively and in detail. Investors, potential investors, customers, employees, lenders, business partners, analysts and interested members of the public are informed regularly, promptly and without discrimination of the company's economic and financial situation, key developments, significant changes in business and any facts of relevance to valuation on the Internet at www.rheinmetall.com.

Facts and circumstances that may influence the share price on the stock market are published immediately in ad hoc notifications in accordance with the legal regulations. The Australian Department of Defence informed Rheinmetall AG on March 14, 2018 that the government's decision-making phase for the Land 400 Phase 2 program had been concluded. The National Security Committee recommended starting exclusive final negotiations with Rheinmetall AG on the procurement of the Boxer CRV wheeled combat reconnaissance vehicle. On November 26, 2018, we confirmed discussions with Wegmann Unternehmens-Holding GmbH & Co. KG on a possible acquisition of its equity interest in KMW + Nexter Defense Systems N.V. ("KNDS") and thus an indirect interest in Krauss-Maffei Wegmann GmbH & Co. KG ("KMW") or other forms of cooperation with KNDS and/or KMW.

Rheinmetall publishes securities transactions that are subject to reporting requirements in the media required by law and on its website. An overview of the manager's transactions in fiscal 2018 is additionally presented on page 123.

Declaration of conformity in accordance with section 161 AktG

The Supervisory Board discussed the implementation of the recommendations of the German Corporate Governance Code at the Rheinmetall Group at its meeting on August 22, 2018 and issued a a declaration of conformity in accordance with section 161 AktG, the contents of which were unchanged and which can be found – together with older versions – on the company's website in the section "Group – Corporate Governance".

> "The Executive Board and Supervisory Board of Rheinmetall AG hereby declare that since it issued its last declaration of conformity dated August 31, 2017, Rheinmetall AG has complied with and will continue to comply with the recommendations of the Government Commission of the German Corporate Governance Code as amended on February 7, 2015, officially published in the electronic Federal Gazette on April 24, 2017, with one exception, namely the regulatory limit on membership of the Supervisory Board.
>
> The Supervisory Board of Rheinmetall AG has decided not to stipulate any regulatory limit on membership of the Supervisory Board beyond the existing age limit for Supervisory Board members. It is convinced that a rigid regulatory limit on membership of the Supervisory Board, without looking at the respective individual Supervisory Board members, is not a suitable means of ensuring the further improvement and professionalization of the work of the Supervisory Board. Instead, it is hoped that a flexible composition for the Supervisory Board, including members who have belonged to the Board for different periods and have different experience, and a practical focus on a mixed age structure when searching for candidates will better serve the company's interests. Finally, the company has for some time published information on the length of time that the respective members have belonged to the Supervisory Board, thus enabling shareholders to decide for themselves whether individual Supervisory Board members are suitable for reelection.
>
> Düsseldorf, August, 2018
> Rheinmetall Aktiengesellschaft
> The Supervisory Board The Executive Board"

Corporate governance
Disclosures required by takeover law

Explanatory report by the Executive Board in accordance with section 176(1) sentence 1 AktG on disclosures required under takeover law in accordance with sections 289a(1) and 315a(1) HGB as of December 31, 2018.

Composition of the subscribed capital

The subscribed capital (share capital) of Rheinmetall AG amounted to €111,510,656 as of December 31, 2018 (previous year: €111,510,656), and was divided into 43,558,850 (previous year: 43,558,850) ordinary bearer shares with no nominal value (no-par value shares), each of which represented €2.56 of the common stock. The shares are fully paid. Different classes of shares do not exist. In accordance with Article 5(2) of the Articles of Association, no shareholder is entitled to a physical share certificate. The company is authorized to issue bearer share certificates that document several shares.

Shareholder rights and obligations

The same rights and obligations are attached to all shares, as set out in the German Stock Corporation Act, in particular sections 12, 53a et seq., 118 et seq., and 186 AktG. The shareholder is entitled to asset-related and administrative rights. Asset-related rights primarily include the right to a share in the profits under the terms of section 58(4) AktG, the right to net liquidation assets following the dissolution of the company in accordance with section 271 AktG and share subscription rights in the event of capital increases according to section 186(1) AktG.

Administrative rights comprise the right to attend the Annual General Meeting and the right to speak there, ask questions, submit motions and exercise voting rights. Any shareholder may enforce such rights, in particular through actions for information, avoidance or rescission.

Each share in Rheinmetall AG grants one vote at the Annual General Meeting. This does not include treasury shares held by the company in accordance with section 71b AktG, which do not entitle the company to any rights, particularly any voting rights.

The Annual General Meeting elects shareholder representatives on the Supervisory Board as well as the auditor. It decides on the appropriation of net income and approval of the activities of the members of the Executive Board and Supervisory Board. The Annual General Meeting passes resolutions on the Articles of Association and the objective of the company, key corporate measures such as affiliation agreements and conversions, the issuing of new shares, convertible bonds and bonds with warrants and authorization to acquire treasury shares, as well as the performance of a special audit, the early removal of Supervisory Board members and the dissolution of the company.

Subject to other overriding legal provisions, the Annual General Meeting adopts its resolutions by means of a simple majority of votes cast and, where the law prescribes both a voting and shareholding majority, by means of a simple majority of the common stock represented in the passing of the resolution.

Restrictions on voting rights and share transfer

The shares of Rheinmetall AG were not subject to any voting restrictions under the Articles of Association or legislation as of the end of the reporting period. To the extent that Rheinmetall AG issues shares under its long-term incentive program to Executive Board members and other senior management staff, these shares are subject to a four-year lockup period. However, this does not apply to retired members of the Executive Board. Eligible staff in Germany and other European countries were offered Rheinmetall AG shares to purchase on preferential terms as part of the employee share purchase program during the period under review. A two-year lockup period applies to these shares.

In the case of acquisition of a defence technology company in Germany, sections 60 et seq. of the German Foreign Trade and Payments Regulation allow the German government to prohibit foreign investors from acquiring 10% or more of the shares. This regulation aims to safeguard material security interests of the Federal Republic of Germany.

Shareholdings exceeding 10% of voting rights

The company did not receive notification from any investors pursuant to section 33 of the Wertpapierhandelsgesetz (WpHG – German Securities Trading Act) during the reporting year stating that their shareholdings had risen above the threshold of 10%.

Rheinmetall AG is not aware of any indirect shareholdings as defined by section 34 of the German Securities Trading Act that exceed 10% of the voting rights.

Shares with special rights conferring controlling privileges

None of the shares issued by Rheinmetall AG vest rights which confer special control privileges on their holders.

Type of voting control if employees have shareholdings and do not exercise their rights of control directly

To the extent that Rheinmetall AG issues shares under its long-term incentive program and employee share purchase program, these shares are directly transferred to these individuals subject to a resale lockup period of four or two years. In the case of retired members of the Executive Board, the four-year lockup period does not apply.

As with other shareholders, these beneficiaries are also able to directly exercise the rights of control to which they are entitled based on the transferred shares, subject to the provisions of the law and Articles of Association.

Corporate governance
Disclosures required by takeover law

Appointment and removal of Executive Board members and amendments to the Articles of Association

The appointment and removal of the members of the Executive Board of Rheinmetall AG is based on sections 84 and 85 AktG and section 31 MitbestG in conjunction with Article 6 of the Articles of Association. Executive Board members are appointed by the Supervisory Board for a maximum of five years and may be reappointed or have their term of office renewed, for a maximum period of five years in each case.

The provisions of sections 179 et seq. AktG apply to any amendment of the Articles of Association of Rheinmetall AG.

In accordance with Article 12 of the Articles of Association, amendments that affect only the version or wording of the Articles of Association with regard to the amount and utilization of authorized capital can be carried out by the Supervisory Board without the passing of a resolution by the Annual General Meeting.

Issuing new shares and repurchasing treasury shares

According to section 202 AktG, the Annual General Meeting can authorize the Executive Board for a maximum period of five years to increase the common stock by issuing new shares in return for capital contributions. The authorization granted by the Annual General Meeting of May 6, 2014 to increase the share capital by up to €50,000,000 was partially utilized by the increase of share capital of €10,137,216 on November 11, 2015. By way of resolution of the Annual General Meeting of May 10, 2016, the Executive Board was authorized, with the approval of the Supervisory Board, to increase the share capital of the company up to May 9, 2021, by issuing once or several times new no-par shares in return for contributions in cash and/or in kind, up to a total of €50,000,000 (new authorized capital). The new shares can also be issued to employees of Rheinmetall AG or any subsidiary it controls. The disapplication of pre-emption rights that the Executive Board can resolve with the approval of the Supervisory Board is governed by Article 4(3) of the Articles of Association.

For the purpose of granting shares when options and/or conversion rights are exercised and when option and/or conversion obligations are fulfilled for the holders of bonds with warrants and/or convertible bonds issued on the basis of the authorization, a contingent increase of up to €20 million was carried out on the company's common stock (contingent capital) by way of a resolution of the Annual General Meeting on May 10, 2016. Furthermore, the Executive Board of the company was authorized by resolution of the Annual General Meeting of May 10, 2016 to issue interest-bearing bearer bonds with warrants and/or convertible bonds with a total nominal value of €800 million with a term of up to 20 years on one or several occasions up to May 9, 2021, and to grant the holders of the respective bonds, which carry the same rights, options and conversion rights on new shares of the company up to a total of 7,812,500 shares, in accordance with the more detailed provisions of the conditions for bonds with warrants and/or convertible bonds.

The authorization to acquire and use treasury shares resolved by the Annual General Meeting of May 6, 2014 had not been utilized to acquire treasury shares by the time of the 2016 Annual General Meeting and expires on May 5, 2019. The purchase of treasury stock is governed by section 71 AktG.

The Annual General Meeting on May 10, 2016 authorized the Executive Board, in accordance with section 71(1) No. 8 AktG and canceling the previous authorization to acquire treasury shares, to repurchase treasury bearer shares of Rheinmetall AG not to exceed 10% of the current common stock of €111,510,656, up to May 9, 2021. Such treasury shares may be acquired via the stock exchange or by public bid directed at all shareholders or by public invitation to submit a purchase bid.

Further information on the treasury shares can be found in the notes to the consolidated financial statements.

Agreements terminable upon a change of control

The granting of extraordinary rights of termination in the event of a change of control is standard practice especially in long-term credit business.

In the case of the syndicated credit facility for €500 million, the contract provides for negotiations on the continuation of the loan, if more than half of the Rheinmetall AG shares are held directly or indirectly by one person or several persons acting in concert, or if the person or persons acting in concert fulfill the conditions for appointing members of the Supervisory Board. At the end of such negotiations, the lending banks may terminate the agreement in part or in full.

The loan agreement with the European Investment Bank for €250 million contains a change-of-control clause. This provides for the possibility of negotiations on continuation of the loan, after which the loan is repaid early in full if more than half of the Rheinmetall AG shares are held directly or indirectly by one person or several persons acting in concert, or if the person or persons acting in concert fulfill the conditions for appointing members of the Supervisory Board (change of control). There is also the possibility of full early repayment of the loan following a change of control even without negotiations being commenced.

The promissory note loans totaling €300 million outstanding as of December 31, 2018, which mature between 2019 and 2025 include an extraordinary right of termination in the event of a change of control.

No preventive precautions have been taken against a public takeover bid, the successive acquisition of a controlling stake via share purchases on the stock markets, or control being gained by buying blocks of shares.

Compensation arrangements of the company

No compensation arrangements have been made with members of the Executive Board or employees.

Remuneration report
Remuneration of the Executive Board

Remuneration of the Executive Board

Rheinmetall AG's pay system is geared towards sustainable corporate development. Using an assessment basis spanning several years, incentives are provided for a sustainable corporate management strategy, in particular as part of the long-term incentive program (LTI). The Supervisory Board of Rheinmetall AG resolves upon and regularly reviews the amount of Executive Board remuneration and any significant employment contract elements following preparation work carried out by the Personnel Committee.

The Supervisory Board has performed an extensive review of the remuneration system of the Executive Board on the basis of all relevant information, and has looked in particular at whether the total remuneration of Executive Board members is proportionate to the scope of responsibilities of the Executive Board member in question, his personal performance and the economic situation and success of the company in comparison with industry peers and ensuring that this remuneration does not exceed standard remuneration unless there are special reasons for this.

Remuneration is calculated in such a way as to ensure that it is competitive on a national and international scale, thus offering an incentive for dedicated and successful work. The Supervisory Board most recently reviewed the appropriateness of the Executive Board remuneration at its meeting on August 25, 2016 and adjusted it to standard market conditions with effect from January 1, 2017 at its meeting on December 8, 2016. A renewed review of the appropriateness of the Executive Board remuneration will be conducted by the Supervisory Board in 2019.

Total remuneration is performance-based and is made up of various components. These comprise fixed annual remuneration not linked to performance, performance-related variable remuneration comprising a short-term incentive program (STI) and a long-term incentive program (LTI) as well as fringe benefits and pension commitments. The fixed component makes up 60% and the STI 40% of the annual target salary.

Fixed remuneration

The fixed component is paid out on a monthly basis in twelve equal portions. In addition, Executive Board members receive fringe benefits in the form of non-cash remuneration. This mainly consists of contributions to statutory social pension insurance (or any exempting life insurance in lieu) plus the use of a company car.

Performance-related variable remuneration

Performance-related variable remuneration comprises two elements, the STI and the LTI.

The target value (100%) for the STI is based on planning for the fiscal year. This is subject to the development of two key figures, EBT and return on capital employed (ROCE), which are each weighted at 50% and used as criteria for determining this figure.

The amount paid from the STI ranges between 0% and 200% of the target amount. 200% of the target amount is paid if the planned value is exceeded by 10%. No payment is made from the STI if target achievement falls 30% below the planned value. In the case of intermediate target achievement values, a corresponding value within the range is paid out.

The target parameters are also used, in combination with others, by managerial staff in order to ensure the uniformity and consistency of the target system in the Group as a whole in this respect.

In order to gear the Executive Board remuneration structure more strongly towards sustainable corporate development, an LTI is part of the Executive Board remuneration. The LTI provides for a distribution at the end of the fiscal year in question based on the calculation of the average adjusted EBT from the last three fiscal years. This distribution amount is divided into a cash portion and an equity portion. The number of shares granted is based on a reference share price which corresponds to the average price on the last five trading days in February of the subsequent fiscal year. The shares granted are subject to a four-year lockup period, during which they are subject to all opportunities and risks inherent in capital market performance. The vesting period is canceled if a member of the Executive Board retires.

As part of the LTI, the figure to be taken into account when calculating the distribution amount (average adjusted EBT from the last three fiscal years) is limited to a maximum of €300 million. This is therefore a cap that is intrinsic to the system. The cash portion is mainly used to pay the tax bill incurred upon receipt of the shares and the cash portion.

Adjusted EBT € million

	2018	2017
EBIT	**518**	**385**
One-off expenses and income in connection with:		
Equity investments	-	10
Properties	(35)	(9)
Restructuring	16	39
Other	-	(10)
EBIT (adjusted)	**499**	**415**
Net interest	(33)	(39)
EBT (adjusted)	466	376

Average adjusted EBT for fiscal 2017 was €305 million. Average adjusted EBT totaled €386 million for fiscal 2018 just ended. On account of the cap, only €300 million was taken into account for the calculation of LTI in fiscal 2018. Similarly, only €300 million was used as the basis for the calculation of the LTI for fiscal 2018.

The employment contracts make provision for the ability of the Supervisory Board to grant, in exceptional cases and at its own discretion, a special bonus exclusively in the following cases: (i) for special achievements or specific efforts, (ii) if and to the extent to which the Executive Board member has made a particular difference to the company through his activities. Executive Board members are not entitled to the granting of this special bonus. The members of the Executive Board were not awarded a bonus in fiscal 2018.

In addition to salaries, a group accident and invalidity insurance policy and a D&O insurance policy (Directors' and Officers' liability insurance) are also in place, where a deductible of 10% of the loss or one and a half times the annual fixed remuneration has been agreed.

The contracts of Executive Board members provide for compensation in the event that the position on the Executive Board is terminated prematurely without cause. This is limited to a maximum of two years' salary including fringe benefits (compensation cap) and shall not provide any more payment than the remaining term of the employment contract.

The members of the Executive Board did not receive any benefits or equivalent entitlements from third parties with regard to their activities as Executive Board members in fiscal 2018 or in the previous year.

Remuneration report
Remuneration of the Executive Board

Total remuneration of the Executive Board

Individual details of the remuneration of the Executive Board in fiscal 2018 and pension commitments attributable to individual members of the Executive Board can be found in the following table, in addition to the respective values for the previous year:

Benefits granted € ' 000

	Armin Papperger		Helmut P. Merch	
	CEO from January 1, 2013[1]		Member of the Executive Board from January 1, 2013	
	2018	2017	2018	2017
Fixed remuneration	1,200	1,200	660	660
Fringe benefits	25	25	26	28
Total	**1,225**	**1,225**	**686**	**688**
One-year variable remuneration (STI)	1,600	1,600	880	880
Multi-annual variable remuneration (LTI)	1,650	1,650	825	825
Total	**4,475**	**4,475**	**2,393**	**2,393**
Pension expenses	1,182	1,113	907	904
Total remuneration	**5,657**	**5,588**	**3,298**	**3,297**

[1] Member of the Executive Board since January 1, 2012

Benefits granted € ' 000

	Horst Binnig		Peter Sebastian Krause	
	Member of the Executive Board from January 1, 2014		Member of the Executive Board from January 1, 2017	
	2018	2017	2018	2017
Fixed remuneration	600	600	443	443
Fringe benefits	25	22	35	32
Total	**625**	**622**	**478**	**475**
One-year variable remuneration (STI)	726	800	596	616
Multi-annual variable remuneration (LTI)	825	825	578	578
Total	**2,176**	**2,247**	**1,652**	**1,669**
Pension expenses	685	681	476	470
Total remuneration	**2,861**	**2,928**	**2,128**	**2,139**

There is no minimum amount of variable remuneration, although there is an upper limit.

Remuneration from the STI can amount to a maximum of €1,600 thousand for the CEO Armin Papperger, a maximum of €880 thousand for Helmut P. Merch, a maximum of €800 thousand for Horst Binnig and a maximum of €616 thousand for Peter Sebastian Krause.

Remuneration from the LTI can amount to a maximum of €1,650 thousand for the CEO Armin Papperger, up to a maximum of €825 thousand each for Helmut P. Merch and Horst Binning and up to a maximum of €578 thousand for Peter Sebastian Krause.

Amounts paid € ’000

	Armin Papperger CEO from January 1, 2013[1]		Helmut P. Merch Member of the Executive Board from January 1, 2013	
	2018	**2017**	**2018**	**2017**
Fixed remuneration	1,200	1,200	660	660
Fringe benefits	25	25	26	28
Total	**1,225**	**1,225**	**686**	**688**
One-year variable remuneration (STI)	1,600	1,600	880	880
Multi-annual variable remuneration (LTI)				
Payment	900	900	450	450
Transfer of shares	750	750	375	375
Total	**4,475**	**4,475**	**2,391**	**2,393**
Pension expenses	1,182	1,113	907	904
Total remuneration	**5,657**	**5,588**	**3,298**	**3,297**

[1] Member of the Executive Board since January 1, 2012

Amounts paid € ’000

	Horst Binnig Member of the Executive Board from January 1, 2014		Peter Sebastian Krause Member of the Executive Board from January 1, 2017	
	2018	**2017**	**2018**	**2017**
Fixed remuneration	600	600	443	443
Fringe benefits	25	22	35	32
Total	**625**	**622**	**478**	**475**
One-year variable remuneration (STI)	726	800	596	616
Multi-annual variable remuneration (LTI)				
Payment	450	450	315	315
Transfer of shares	375	375	263	263
Total	**2,176**	**2,247**	**1,652**	**1,669**
Pension expenses	685	681	476	470
Total remuneration	**2,861**	**2,928**	**2,128**	**2,139**

On the basis of the reference share price of €109.07 for the end of February 2018, a total of 16,158 shares were transferred to the Executive Board of Rheinmetall AG on April 3, 2018, effective March 30, 2018, as part of the LTI for fiscal 2017. The CEO Armin Papperger received 6,876 shares, while Helmut P. Merch and Horst Binnig each received 2,406 shares and Peter Sebastian Krause received 2,406 shares. The transfer of shares for the LTI for fiscal 2018 will take place at the beginning of April 2019 based on the reference share price as of the end of February 2019.

Pensions

As of January 1, 2014, the defined benefit contributions in the form of pensions agreed on the basis of individual contracts were replaced by modular defined benefits. A transitional arrangement also applies to Executive Board members who are currently in office. The amount of the defined benefits is determined on the basis of a share of the annual target salary, which is an average of 27.5%. The retirement age is 63. The company has recognized provisions for future claims.

Remuneration report
Remuneration of the Supervisory Board

Remuneration of the Supervisory Board

The remuneration of the Supervisory Board of Rheinmetall AG is regulated in Article 13 of the Articles of Association. According to these, Supervisory Board members receive remuneration comprising a fixed component of €60,000 payable after the end of the fiscal year, in addition to reimbursement of expenses and meeting attendance fees. The Supervisory Board Chairman and Vice-Chairman each receive double this compensation.

Supervisory Board members receive fixed remuneration of €15,000 for any committee membership, which is payable after the end of the fiscal year. The chairman of a committee receives €30,000.

Supervisory Board and committee members who belonged to the Supervisory Board or committee for only part of the fiscal year receive remuneration on a pro rata basis.

The attendance fee for Supervisory Board meetings is €1,000. When attending committee meetings that are not held on the same day as a Supervisory Board meeting, the attendance fee is €500.

The shareholder representatives on the Supervisory Board received the following remuneration for fiscal 2018:

EUR

		2018	2017
Ulrich Grillo	Chairman of the Supervisory Board and Chairman of the Strategy, Personnel, Mediation and Nomination Committees and a member of the Audit Committee	255,000	186,082
Dr.-Ing. Dr.-Ing. E. h. Klaus Draeger	Member of the Supervisory Board and member of the Strategy Committee	75,000	48,493
Professor Dr. Andreas Georgi	Member of the Supervisory Board and member of the Personnel Committee as well as Chairman of the Audit Committee	105,000	94,397
Professor Dr. Susanne Hannemann	Member of the Supervisory Board and member of the Audit Committee	75,000	75,000
Dr. Franz Josef Jung	Member of the Supervisory Board and member of the Nomination Committee	75,000	48,493
Detlef Moog	Member of the Supervisory Board and member of the Strategy Committee	75,000	69,699
Klaus-Günter Vennemann	Member of the Supervisory Board and member of the Nomination Committee	75,000	69,699
Univ.-Prof. Dr. Marion A. Weissenberger-Eibl	Member of the Supervisory Board and member of the Mediation Committee	75,000	69,699
Total for shareholder representatives		**810,000**	**778,192**

Figures excluding VAT

The employee representatives in the Supervisory Board, who forward their Supervisory Board remuneration to the Hans Böckler Foundation in accordance with the guidelines of the Federation of German Trade Unions, received the following remuneration for fiscal 2018:

EUR

		2018	2017
Dr. Rudolf Luz	Deputy Chairman of the Supervisory Board and member of the Strategy, Personnel, Audit and Mediation Committees	180,000	174,699
Roswitha Armbruster	Member of the Supervisory Board and member of the Audit Committee	75,000	75,000
Dr. Daniel Hay	Member of the Supervisory Board and member of the Personnel Committee	75,000	69,699
Dr. Michael Mielke	Member of the Supervisory Board	60,000	60,000
Reinhard Müller	Member of the Supervisory Board and member of the Mediation Committee	75,000	48,493
Dagmar Muth	Member of the Supervisory Board and member of the Strategy Committee	75,000	75,000
Markus Schaubel	Member of the Supervisory Board and member of the Strategy Committee	75,000	69,699
Sven Schmidt	Member of the Supervisory Board and member of the Audit Committee	75,000	69,699
Total for employee representatives		**690,000**	**668,795**
Total for the Supervisory Board		**1,500,000**	**1,446,986**

Figures excluding VAT

In addition, Rheinmetall refunds VAT on Supervisory Board remuneration to the members of the Supervisory Board upon request.

The Annual General Meeting on May 8, 2018 approved the application of the management to increase the remuneration for the Supervisory Board from fiscal 2019 on. Each Supervisory Board member accordingly receives fixed remuneration of €80,000, which is payable after the end of the fiscal year. The Chairman of the Supervisory Board receives double this amount, his deputy one and a half times this remuneration. The Chairman of the Audit Committee receives fixed remuneration of €40,000, while every other member of this committee receives €20,000. The Chairman of the Nomination Committee and the Chairman of the Mediation Committee each receive fixed remuneration of €20,000, while every other member of these two committees receives €10,000. The Chairman of the Personnel Committee and the Chairman of the Strategy Committee each receive fixed remuneration of €30,000, while every other member of these two committees receives €15,000. Supervisory Board and committee members who belonged to the Supervisory Board or committee for only part of the fiscal year receive remuneration on a pro rata temporis basis. The amount of the attendance fee has not changed.

Supplementary report

Events after the end of the reporting period

At its extraordinary meeting on January 18, 2019, the Supervisory Board approved the proposal of the Executive Board to form a joint venture with BAE Systems in the United Kingdom that will be involved in development, production and related support services in the field of military land systems. It is intended to operate the joint venture under the name Rheinmetall BAE Systems Land and to site its registered office at the current BAE Systems manufacturing facilities in Telford, England. It is subject to the approval of the authorities, which will be sought in the first half of 2019. Rheinmetall will hold 55% and BAE 45% of the shares in the new firm. A new market leader in Europe will thus be created that will set out to secure a top position in the international competition in the field of military vehicles.

Beyond that, no events of special significance that could have materially affected the company's net assets, financial position and results of operations occurred at Rheinmetall AG between the end of the reporting period on December 31, 2018 and the date on which the consolidated financial statements 2018 were prepared.

Düsseldorf, February 26, 2019

Rheinmetall Aktiengesellschaft
The Executive Board

Armin Papperger	Helmut P. Merch	Horst Binnig	Peter Sebastian Krause

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CONSOLIDATED FINANCIAL STATEMENTS

Rheinmetall Group
Balance sheet as of December 31, 2018

€ million	Note	Dec. 31, 2018	Jan. 1, 2018 1)	Dec. 31, 2017 2)
Assets				
Goodwill	(9)	550	550	550
Other intangible assets	(9)	172	229	229
Rights of use	(10)	170	174	-
Property, plant and equipment	(11)	1,310	1,270	1,270
Investment property	(12)	42	46	46
Investments accounted for using the equity method	(13)	285	242	242
Other non-current assets	(17)	205	149	73
Deferred taxes	(31)	217	217	217
Non-current assets		**2,951**	**2,877**	**2,627**
Inventories	(14)	1,259	1,174	1,172
Contract asset	(24)	338	307	-
Trade receivables	(15)	1,185	890	1,217
Other current assets	(17)	178	187	190
Income tax receivables		22	11	11
Liquid financial assets	(16)	100	119	119
Cash and cash equivalents	(18)	724	757	757
Assets held for sale		2	8	8
Current assets		**3,808**	**3,453**	**3,474**
Total assets		**6,759**	**6,330**	**6,101**
Equity and liabilities				
Issued capital		112	112	112
Capital reserves		547	540	540
Retained earnings		1,383	1,115	1,124
Treasury shares		(21)	(25)	(25)
Rheinmetall AG shareholders' equity		**2,021**	**1,742**	**1,751**
Non-controlling interests		151	118	119
Equity	(19)	**2,172**	**1,860**	**1,870**
Provisions for pensions and similar obligations	(20)	972	1,080	1,080
Other non-current provisions	(21)	210	202	185
Non-current financial debts	(22)	704	720	572
Other non-current liabilities	(23)	80	54	54
Deferred taxes	(29)	15	14	14
Non-current liabilities		**1,981**	**2,070**	**1,905**
Other current provisions	(21)	656	642	595
Current financial debts	(22)	151	100	74
Contract liability	(24)	650	615	-
Trade liabilities		797	760	760
Other current liabilities	(23)	231	209	823
Income tax liabilities		121	74	74
Current liabilities		**2,606**	**2,400**	**2,326**
Total liabilities		**6,759**	**6,330**	**6,101**

1) Carrying amounts adjusted as of January 1, 2018, due to the initial application of IFRS 9, IFRS 15 and IFRS 16, see note (4)
2) Carrying amounts adjusted due to the change in measurement of operating land and the recognition of other receivables and liabilities, see note (3)

Rheinmetall Group
Income statement for fiscal 2018

€ million	Note	2018	2017
Sales	(24)	**6,148**	**5,896**
Changes in inventories and work performed by the enterprise and capitalized	(25)	44	115
Total operating performance		**6,192**	**6,011**
Other operating income	(26)	179	152
Cost of materials	(27)	3,209	3,262
Staff costs	(28)	1,574	1,548
Amortization, depreciation and impairment	(29)	318	241
Other operating expenses	(30)	776	734
Income from investments carried at equity		37	28
Other net financial income		(13)	(21)
Earnings before interest and taxes (EBIT)		**518**	**385**
Interest income		6	9
Interest expenses		(39)	(48)
Earnings before taxes (EBT)		**485**	**346**
Income taxes	(31)	(131)	(94)
Earnings after tax		**354**	**252**
Of which:			
Non-controlling interests		*49*	*28*
Rheinmetall AG shareholders		*305*	*224*
Earnings per share	(32)	€ 7.10	€ 5.24

Statement of comprehensive income for fiscal 2018

€ million	2018	2017
Earnings after tax	**354**	**252**
Remeasurement of net defined benefit liability from pensions	52	29
Amounts not reclassified to the income statement	**52**	**29**
Change in value of derivative financial instruments (cash flow hedge)	(20)	19
Currency translation difference	(1)	(67)
Other comprehensive income from investments accounted for using the equity method	(2)	(11)
Amounts reclassified to the income statement	**(23)**	**(59)**
Other comprehensive income (after taxes)	**29**	**(30)**
Total comprehensive income	**383**	**222**
Of which:		
Non-controlling interests	*41*	*29*
Rheinmetall AG shareholders	*342*	*193*

Rheinmetall Group
Cash flow statement for fiscal 2018

€ million	2018	2017
Earnings after tax	354	252
Amortization, depreciation and impairment	318	241
Allocation of CTA assets to secure pension obligations	(40)	(30)
Changes in pension provisions	(8)	(14)
Income from disposals of non-current assets	(32)	(6)
Changes in other provisions	28	120
Change in working capital	(398)	23
Changes in receivables, liabilities (without financial debts) and prepaid & deferred items	53	(12)
Pro rata income from investments carried at equity	(37)	(28)
Dividends received from investments carried at equity	7	8
Other non-cash expenses and income	(3)	(8)
Cash flows from operating activities [1]	**242**	**546**
Investments in property, plant and equipment, intangible assets and investment property	(277)	(270)
Cash receipts from the disposal of property, plant and equipment, intangible assets and investment property	73	3
Proceeds from divestments of financial assets	-	23
Payments for investments in financial assets	(21)	(15)
Cash receipts from the disposal of current liquid financial assets	294	362
Payments for the purchase of current liquid financial assets	(277)	(292)
Cash flows from investing activities	**(208)**	**(189)**
Capital contributions by non-controlling interests	-	4
Dividends paid out by Rheinmetall AG	(73)	(62)
Other profit distributions	(8)	(10)
Shares issued to employees	1	4
Borrowing of financial debts	154	415
Repayment of financial debts	(140)	(551)
Cash flows from financing activities	**(66)**	**(200)**
Changes in cash and cash equivalents	**(32)**	**157**
Changes in cash and cash equivalents due to exchange rates	(1)	(16)
Total change in cash and cash equivalents	**(33)**	**141**
Opening cash and cash equivalents Jan. 1	**757**	**616**
Closing cash and cash equivalents Dec. 31	**724**	**757**

[1] *Of which:*

Net interest of €-20 million (previous year: €-26 million), net income taxes of €-100 million (previous year: €-69 million)

Rheinmetall Group
Statement of changes in equity

€ million	Issued capital	Capital reserves	Total retained earnings	Treasury shares	Rheinmetall AG shareholders' equity	Non-controlling interests	Equity
As of Dec. 31, 2016	**112**	**532**	**1,074**	**(32)**	**1,686**	**95**	**1,781**
Adjustment from measurement of land	-	-	(85)	-	(85)	-	(85)
As of Jan. 1, 2017	**112**	**532**	**989**	**(32)**	**1,601**	**95**	**1,696**
Earnings after tax	-	-	224	-	224	28	252
Other comprehensive income	-	-	(31)	-	(31)	1	(30)
Total comprehensive income	-	-	193	-	193	29	222
Dividend payout	-	-	(62)	-	(62)	(10)	(72)
Disposal of treasury shares	-	-	-	7	7	-	7
Other changes	-	8	4	-	12	5	17
As of Dec. 31, 2017	**112**	**540**	**1,124**	**(25)**	**1,751**	**119**	**1,870**
IFRS 9 and IFRS 15 adjustment	-	-	(9)	-	(9)	(1)	(10)
As of Jan. 1, 2018	**112**	**540**	**1,115**	**(25)**	**1,742**	**118**	**1,860**
Earnings after tax	-	-	305	-	305	49	354
Other comprehensive income	-	-	37	-	37	(8)	29
Total comprehensive income	-	-	342	-	342	41	383
Dividend payout	-	-	(73)	-	(73)	(8)	(81)
Disposal of treasury shares	-	-	-	4	4	-	4
Other changes	-	7	(1)	-	6	-	6
As of Dec. 31, 2018	**112**	**547**	**1,383**	**(21)**	**2,021**	**151**	**2,172**

Composition of retained earnings:

€ million	Currency translation difference	Remeasurement of net defined benefit liability from pensions	Land remeasurement	Hedges	Other comprehensive income from investments accounted for using the equity method	Other reserves	Total retained earnings
As of Dec. 31, 2016	44	(511)	85	9	8	1,439	**1,074**
Adjustment from measurement of land	-	-	(85)	-	-	-	(85)
As of Jan.1, 2017	44	(511)	-	9	8	1,439	**989**
Earnings after tax	-	-	-	-	-	224	224
Other comprehensive income	(63)	29		14	(11)	-	(31)
Total comprehensive income	(63)	29	-	14	(11)	224	193
Dividend payout	-	-	-	-	-	(62)	(62)
Other changes	-	-	-	-	-	4	4
As of Dec. 31, 2017	(19)	(482)	-	23	(3)	1,605	**1,124**
IFRS 9 and IFRS 15 adjustment	-	-	-	-	-	(9)	(9)
As of Jan. 1, 2018	**(19)**	**(482)**	**-**	**23**	**(3)**	**1,596**	**1,115**
Earnings after tax	-	-	-	-	-	305	305
Other comprehensive income	4	51		(16)	(2)	-	37
Total comprehensive income	4	51	-	(16)	(2)	305	342
Dividend payout	-	-	-	-	-	(73)	(73)
Other changes	-	-	-	-	-	(1)	(1)
As of Dec. 31, 2018	(15)	(431)	-	7	(5)	1,827	**1,383**

Notes to the consolidated financial statements
Segment reporting

€ million		Automotive		Defence		Others/ Consolidation		Group	
		2018	2017	2018	2017	2018	2017	2018	2017
Income statement									
External sales		2,930	2,861	3,221	3,036	(3)	(1)	6,148	5,896
Operating earnings		262	249	254	174	(24)	(23)	492	400
Special items		3	(22)	(7)	(2)	30	9	26	(15)
EBIT	(1)	265	227	247	172	6	(14)	518	385
of which:									
At equity income		*32*	*29*	*5*	*(1)*	-	-	*37*	*28*
Amortization and depreciation		*152*	*130*	*118*	*88*	*7*	*5*	*277*	*223*
Impairment		*3*	*10*	*38*	*8*	-	-	*41*	*18*
Interest income		2	8	7	3	(3)	(2)	6	9
Interest expenses		(12)	(13)	(34)	(30)	7	(5)	(39)	(48)
EBT		255	222	220	145	10	(21)	485	346
Other data									
Operating free cash flow		26	106	(29)	238	(32)	(68)	(35)	276
Order intake		2,889	2,922	5,565	2,963	(3)	(1)	8,451	5,884
Order backlog Dec. 31		478	520	8,577	6,416	-	-	9,055	6,936
Employees as at Dec. 31 (capacities)		11,710	11,166	10,948	10,251	241	193	22,899	21,610
Net financial debt [1]	(2)	(68)	(217)	(155)	(305)	254	292	31	(230)
Pension provisions [1]	(3)	375	399	535	601	62	80	972	1,080
Equity [1] [2]	(4)	1,077	1,006	1,265	1,060	(170)	(196)	2,172	1,870
Capital employed [1] [2]	(2)+(3)+(4)	1,384	1,188	1,645	1,356	146	176	3,175	2,720
Average capital employed [2] [3]	(5)	1,310	1,192	1,553	1,392	167	208	3,030	2,792
ROCE (in %) [2] [3]	(1) / (5)	20.2	19.0	15.9	12.4	-	-	17.1	13.8

1) 2017 amounts before adjustment on the basis of IFRS 9, IFRS 15 and IFRS 16

2) 2017 amounts adjusted on the basis of changed measurement of operating land

3) The calculation of average capital employed for 2018 included the values as of January 1, 2018, after adjustment on the basis of IFRS 9, IFRS 15 and IFRS 16

Disclosures according to region

€ million	Germany		Other Europe		Americas [1]		Asia		Others[1]/ Consolidation		Group	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
External sales Defence	1,115	867	597	528	171	203	644	652	694	786	3,221	3,036
External sales Automotive	585	556	1,267	1,299	564	564	492	418	22	24	2,930	2,861
Consolidation	-	-	-	-	-	-	-	-	(3)	(1)	(3)	(1)
External sales Group	1,700	1,423	1,864	1,827	735	767	1,136	1,070	713	809	6,148	5,896
in % of Group sales	28	24	30	31	12	13	18	18	12	14	-	-
Assets	1,322	1,252	530	624	201	186	123	101	68	49	2,244	2,212

1) 2017 amounts adjusted due to the combination of North and South America into Americas

Notes to the consolidated financial statements
Accounting principles

(1) General disclosures

Rheinmetall AG is the parent company of the Rheinmetall Group and has its registered office at Rheinmetall Platz 1, Düsseldorf (Düsseldorf Commercial Register, HRB 39401). The consolidated financial statements of Rheinmetall AG have been prepared in accordance with the regulations of section 315e(1) German Commercial Code ("HGB") and the International Financial Reporting Standards (IFRS) as adopted by the European Union (EU). The consolidated financial statements and the Group management report, which is combined with the management report of Rheinmetall AG, are submitted to the operator of the Federal Gazette and published in the Federal Gazette.

The fiscal year of Rheinmetall AG and the financial statements of subsidiaries included in the consolidated financial statements is the calendar year. The consolidated financial statements are presented in euro (€). Unless stated otherwise, all amounts – including those for the previous year – are reported in millions of euro (€ million). Individual amounts shown may differ due to rounding. The consolidated income statement has been presented in the total cost (nature of expense) format. Only matters significant to the net assets, financial position and results of operations of the Rheinmetall Group are explained in the notes to the consolidated financial statements.

(2) New and amended accounting standards

Accounting standards applied for the first time in fiscal 2018 that have an effect on the Rheinmetall consolidated financial statements

Standard	Name
IFRS 9	Financial instruments
IFRS 15	Revenue from Contracts with Customers
IFRS 16	Leases

The changes in the presentation of the Group's net assets, financial position and results of operations as a result of the standards are shown under note (4).

(3) Change in recognition

In fiscal 2018, the recognition of operating land retrospectively switched from the revaluation model to the cost model. The reason for the change in recognition is the fact that the revaluation model has not become prevalent in Germany or internationally, so comparability with other companies in the same industry is limited. The application of the new IFRS standards, which results in adjustments in these financial statements and the notes to the consolidated financial statements, was taken as an opportunity to change the measurement of property, plant and equipment this year to the model in common use. On the date of the change in model, the changes in value that arose in the past and were recognized in equity in the reserve for revaluation (€85 million) were posted against the carrying amount of operating land (€117 million) taking the increase in deferred tax assets (€32 million, after offsetting) into account. The adjustment as of December 31, 2016, or January 1, 2017, related to the carrying amount of operating land at €121 million, the reserve for revaluation at €85 million and deferred taxes at €35 million.

Notes to the consolidated financial statements
Accounting principles

Adjustment of statement of financial position due to changed recognition of land

€ million	Dec. 31, 2017 previously	Dec. 31, 2017 new	Dec. 31, 2016 previously	Jan. 1, 2017 new
Property, plant and equipment	1,387	1,270	1,378	1,258
Retained earnings	1,209	1,124	1,074	989
Deferred tax assets	185	217	236	271

The recognition of other assets and liabilities in the statement of financial position was also changed. The items for financial and non-financial other assets and liabilities previously shown separately in the statement of financial position were combined for the purposes of clarity. In the notes to the consolidated financial statements, the composition of these items is explained and broken down into financial instruments in accordance with IFRS 7 and into other assets and liabilities.

Adjustment of statement of financial position due to changed presentation of other assets and liabilities

<table>
<tr><th>€ million</th><th>Dec. 31, 2017 previously</th><th>Dec. 31, 2017 new</th><th></th></tr>
<tr><td>Other non-current financial assets</td><td>22</td><td rowspan="2">73</td><td rowspan="2">Other non-current assets</td></tr>
<tr><td>Remaining other non-current assets</td><td>51</td></tr>
<tr><td>Other current financial assets</td><td>73</td><td rowspan="2">190</td><td rowspan="2">Other current assets</td></tr>
<tr><td>Other current receivables and assets</td><td>117</td></tr>
<tr><td>Non-current financial liabilities</td><td>6</td><td rowspan="2">54</td><td rowspan="2">Other non-current liabilities</td></tr>
<tr><td>Other non-current liabilities</td><td>48</td></tr>
<tr><td>Current financial liabilities</td><td>112</td><td rowspan="2">823</td><td rowspan="2">Other current liabilities</td></tr>
<tr><td>Other current liabilities</td><td>711</td></tr>
</table>

(4) Changes due to the application of new accounting standards from 2018

The transition to IFRS 9, IFRS 15 and IFRS 16 resulted in the following adjustments to items in the statement of financial position on the transition date of January 1, 2018:

€ million	Dec. 31, 2017 [1]	IFRS 9	IFRS 15	IFRS 16	Jan. 1, 2018
Assets					
Goodwill	550	-	-	-	550
Other intangible assets	229	-	-	-	229
Rights of use	-	-	-	174	174
Property, plant and equipment	1,270	-	-	-	1,270
Investment property	46	-	-	-	46
Investments accounted for using the equity method	242	-	-	-	242
Other non-current assets	73	-	76	-	149
Deferred taxes	217	-	-	-	217
Non-current assets	**2,627**	-	76	174	**2,877**
Inventories	1,172	-	2	-	1,174
Contract asset	-	(3)	310	-	307
Trade receivables	1,217	-	(327)	-	890
Other current assets	190	-	(3)	-	187
Income tax receivables	11	-	-	-	11
Liquid financial assets	119	-	-	-	119
Cash and cash equivalents	757	-	-	-	757
Assets held for sale	8	-	-	-	8
Current assets	**3,474**	**(3)**	**(18)**	**-**	**3,453**
Total assets	**6,101**	**(3)**	**58**	**174**	**6,330**
Equity and liabilities					
Equity	**1,870**	**(3)**	**(7)**	**-**	**1,860**
Provisions for pensions and similar obligations	1,080	-	-	-	1,080
Other non-current provisions	185	-	17	-	202
Non-current financial debts	572	-	-	148	720
Other non-current liabilities	54	-	-	-	54
Deferred taxes	14	-	-	-	14
Non-current liabilities	**1,905**	**-**	**17**	**148**	**2,070**
Other current provisions	595	-	47	-	642
Current financial debts	74	-	-	26	100
Contract liability	-	-	615	-	615
Trade liabilities	760	-	-	-	760
Other current liabilities	823	-	(614)	-	209
Income tax liabilities	74	-	-	-	74
Current liabilities	**2,326**	**-**	**48**	**26**	**2,400**
Total liabilities	**6,101**	**(3)**	**58**	**174**	**6,330**

Carrying amounts adjusted due to the change in measurement of operating land and the recognition of other receivables and liabilities, see note (3).

Notes to the consolidated financial statements
Accounting principles

Option for transition to new standards – The new standards were adopted retrospectively from 2018 such that the cumulative adjustment amounts will be recognized as of the date of initial adoption, January 1, 2018. The comparative period will be shown in accordance with the previous accounting regulations.

The effects of adopting the new standards on figures in the statement of financial position are explained under note (19) on capital management.

IFRS 9 – IFRS 9 “Financial Instruments” has been applied in the Rheinmetall Group since January 1, 2018, superseding IAS 39 “Financial Instruments: Recognition and Measurement.” The new standard contains amended regulations on the classification and measurement of financial assets and liabilities, the recognition of impairment and hedge accounting. One consequence of the new standard is that trade receivables in the Rheinmetall Group classified as available for sale at the level of the respective Group company are measured at fair value through other comprehensive income. These receivables were previously measured at amortized cost. As these receivables are short-term and their amortized cost is almost equal to their fair value, this has no effect on their measurement.

Under IFRS 9, the recognition of impairment on financial receivables is based on the expected loss model, rather than the incurred loss model of the previous standard IAS 39. The financial assets of the Rheinmetall Group are predominantly customer receivables. When recognizing these receivables for the first time, customers’ credit risk must be taken into account. Given the customer structure of the Rheinmetall Group, which essentially consists of major automotive manufacturers and government institutions, write-downs are of minor significance. The amended measurement model therefore has no material quantitative impact on the Rheinmetall Group.

The new regulations of IFRS 9 apply to hedge accounting in the Rheinmetall Group. In the Rheinmetall Group, the revised hedge accounting regulations result in more extensive options for designating individual risk components, particularly in commodity price hedging. The change from IAS 39 to IFRS 9 had no material impact on existing hedging relationships.

The initial application of IFRS 9 reduced equity by €3 million as a result of the loss allowance on contract assets in accordance with IFRS 15.

IFRS 15 – The new standard IFRS 15 “Revenue from Contracts with Customers” compiles all regulations on the recognition of revenue from contracts with customers. This replaces all previous standards and interpretations on the recognition of sales. In the Rheinmetall Group, this gives rise to changes in accounting for customer-specific longer-term projects, which primarily occur in the Defence sector. Accounting for performance obligations of a customer contract application in accordance with IFRS 15 can result in revenue being recognized at a different time compared to previous accounting standards – revenue recognition over time versus at a point in time. As such contracts are always negotiated with customers individually, an individual analysis is required. The overall result of a contract is not affected.

Interest effects can arise on customer projects with large order volumes and a long production phase. In particular, this is the case when an extended period passes between customer payments being received and performance being rendered. Revenue must be adjusted for the calculated time value of money in such cases. At Rheinmetall, the payment terms for long-term customer contracts are often designed such that several milestone payments are agreed so that services are rendered at approximately the same time as customer payments.

In particular, the standard results in changes to the reporting of items relevant to contracts with customers.

Other non-current assets are increased by the capitalization of contract acquisition and fulfillment costs. The corresponding obligations are recognized in other non-current and current provisions. The asset items are written down as the revenue from contracts with customers is recognized.

Receivables from construction contracts were shown in trade receivables until December 31, 2017. From 2018, these assets are shown separately in the statement of financial position as a contract asset of a similar amount. The reduction in current liabilities is attributable to liabilities from construction contracts and prepayments received, which are now reported separately in the statement of financial position as a contract liability.

The adjustment of equity by €-7 million is primarily attributable to longer-term contracts with customers from the Defence sector, which were still in progress at the transition date and which include a financing component.

IFRS 16 – The Rheinmetall Group is adopting the new standard IFRS 16 “Leases” early from fiscal 2018. Accounting by the lessee has been amended such that, for all leases, assets must be recognized for the rights of use acquired in addition to corresponding financial liabilities. At the date of initial application, simplifications permitted by the standard were utilized. For example, there was no reassessment as to whether a contract is, or contains, a lease. Likewise, the initial direct costs were ignored on initial application and options to extend or terminate leases were determined using hindsight. Leases whose remaining term after initial application was less than 12 months were not recognized. Instead, the lease installment was recognized in other operating expenses.

As a result of the initial application of IFRS 16 as of January 1, 2018, rights of use were capitalized in the amount of €174 million in non-current assets, while financial lease liabilities of the same amount were broken down and recognized by maturity.

These rights of use relate in particular to land, buildings, technical equipment, machinery and vehicles. The value of the rights of use is the present value of the leases at the time of initial adoption of the standard. This is essentially calculated from the contractual lease payments, the respective remaining terms and the interest rate on which the lease is based. The rights of use are amortized over the shorter of the remaining term of the lease and the remaining useful life. The lease liability is reduced by the repayment portion of the lease payment until the lease expires.

For short-term leases and leases of low-value assets, the agreed lease installments and rent are recognized as an expense.

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If the new standards had not been applied, the statement of financial position as of December 31, 2018, would have developed as follows:

€ million	Dec. 31, 2018 as reported	IFRS 9	IFRS 15	IFRS 16	Dec. 31, 2018 without applying new standards
Assets					
Goodwill	550	-	-	-	550
Other intangible assets	172	-	-	-	172
Rights of use	170	-	-	(170)	-
Property, plant and equipment	1,310	-	-	-	1,310
Investment property	42	-	-	-	42
Investments accounted for using the equity method	285	-	-	-	285
Other non-current assets	205	-	(69)	-	136
Deferred taxes	217	-	(8)	-	209
Non-current assets	**2,951**	-	(77)	(170)	**2,704**
Inventories	1,259	-	2	-	1,261
Contract asset	338	4	(342)	-	-
Trade receivables	1,185	-	375	-	1,560
Other current assets	178	-	-	-	178
Income tax receivables	22	-	-	-	22
Liquid financial assets	100	-	-	-	100
Cash and cash equivalents	724	-	-	-	724
Assets held for sale	2	-	-	-	2
Current assets	**3,808**	**4**	**35**	**-**	**3,847**
Total assets	**6,759**	**4**	**(42)**	**(170)**	**6,551**
Equity and liabilities					
Equity	**2,172**	**4**	**25**	**1**	**2,202**
Provisions for pensions and similar obligations	972	-	-	-	972
Other non-current provisions	210	-	(67)	-	143
Non-current financial debts	704	-	-	(138)	566
Other non-current liabilities	80	-	-	-	80
Deferred taxes	15	-	-	-	15
Non-current liabilities	**1,981**	**-**	**(67)**	**(138)**	**1,776**
Other current provisions	656	-	-	-	656
Current financial debts	151	-	-	(33)	118
Contract liability	650	-	(650)	-	-
Trade liabilities	797	-	-	-	797
Other current liabilities	231	-	650	-	881
Income tax liabilities	121	-	-	-	121
Current liabilities	**2,606**	**-**	**-**	**(33)**	**2,573**
Total liabilities	**6,759**	**4**	**(42)**	**(170)**	**6,551**

Under application of the previous standard, the recognition of financial instruments in the statement of financial position would not have resulted in any changes. Only the write-down of contract assets, which must be performed in accordance with IFRS 9, would not have occurred.

The recognition of leases in the statement of financial position under non-current assets and financial liabilities would not have occurred if the previous standard on leases had still been applied. In addition, operating earnings would have been €5 million lower, as the lease expenses in accordance with IAS 17 are higher than the amortization of capitalized rights of use.

If IFRS 15 had not been applied, sales and EBIT for 2018 would have been €31 million higher. This results in particular from the changed assessment of follow-up orders to existing contracts with customers and their recognition with regard to the period allocation of sales and earnings over the terms of the contracts.

Had the new standards not been applied, the total effect on earnings after tax in 2018 would have been €+20 million. Earnings per share would have been €7.28.

(5) Basis of consolidation

Besides Rheinmetall AG, the consolidated financial statements include all German and foreign subsidiaries over which Rheinmetall AG can directly or indirectly exercise a controlling influence. Rheinmetall AG controls an entity if it holds the majority of voting rights or other rights and is therefore able to steer the significant activities of the investee, is exposed to the risk of variable returns from the investment and can use its power over the investee to influence its returns. Jointly controlled entities in which Rheinmetall AG has rights to the net assets of the investee, are included in the consolidated financial statements using the equity method. Entities over which Rheinmetall AG can exert significant influence (associates) are also recognized using the equity method.

Scope of consolidation – companies included

	Dec. 31, 2017	Additions	Disposals	Dec. 31, 2018
Fully consolidated subsidiaries				
Domestic	49	3	2	50
Foreign	100	3	2	101
	149	**6**	**4**	**151**
Investments accounted for using the equity method				
Domestic	16	1	-	17
Foreign	21	-	-	21
	37	**1**	**-**	**38**

A total of six companies were founded and added to the group of consolidated subsidiaries in fiscal 2018. Two companies have left the consolidated group as a result of their merger with other Group companies and two due to liquidation.

(6) Consolidation principles

A subsidiary is included in consolidation for the first time in accordance with the acquisition method. The assets and liabilities acquired are carried at fair value at the time of acquisition. Any positive difference between the purchase cost and the pro rata net assets of the acquired company is reported as goodwill under intangible assets. Any negative goodwill is recognized in other operating income. The cost of the acquired subsidiary equals the fair values of the assets given,

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liabilities assumed, and equity instruments issued by the acquirer in exchange for the acquisition. Any acquisition-related costs incurred are recognized as other operating expenses.

Receivables and payables, expenses and income and intercompany profits/losses among consolidated companies are eliminated. Taxes are deferred for all temporary differences from the consolidation of receivables/payables, income/expenses, and the elimination of intercompany profits/losses.

(7) Currency conversion

In the separate financial statements of consolidated companies, each foreign currency transaction is recognized at the historical rate. Monetary assets and liabilities denominated in a foreign currency are translated at the closing rate. Other assets and liabilities are translated at the rate prevailing at the time of the transaction if they are accounted for using the historical cost convention. These assets and liabilities are translated at the rate prevailing at the respective measurement date if they are measured at fair value. Any currency translation differences that arise are duly recognized in the net financial result.

The single-entity financial statements of Group companies whose functional currency is not the euro are translated into euro as the Group currency. Assets and liabilities are translated at the middle spot exchange rate as of the end of the reporting period and the income statement items at the average annual rate. The translation differences resulting from this are recognized in, and only in, equity as other comprehensive income (OCI).

(8) Accounting policies

The key accounting policies applied to Rheinmetall AG’s consolidated financial statements are described below.

Cost – Cost includes the purchase price and all incidental costs that can be directly attributed to the purchase (with the exception of company acquisitions as defined by IFRS 3 and financial instruments measured at fair value). In the event of an exchange, cost equals the fair value of the asset given in an exchange of assets transaction as of the date of the exchange, whereby any cash compensation is accounted for accordingly.

Cost includes all expenditures that are directly attributable to the production process and an appropriate share of production-related overheads. The latter also comprise material and production overheads including production-related depreciation and social security expenses. Overheads are allocated to production costs on the basis of the production facilities’ normal capacity utilization.

Financing costs are capitalized as costs if they relate to assets which are produced or purchased over a period exceeding one year.

Grants and allowances – Government grants provided for the acquisition of an asset are deducted from the corresponding capital expenditures. Any government grants for expenses for purposes other than investment activities are recognized as deferred income and amortized to profit via other operating income when the related expenses are incurred. Private investment-related grants from customers are also recognized as deferred income and amortized to profit over the contract term. If economic ownership of the subsidized asset is transferred to the customer, sales are recognized on the date of the transfer.

Impairment – If there are indications of impairment on an asset and the recoverable amount is less than the amortized cost, an impairment loss is recognized. If indications for impairment cease to exist, impairment losses are reversed, with the exception of goodwill. The reversal cannot exceed the value what would have resulted for amortized cost that would have resulted if no impairment had been charged.

Goodwill – Goodwill in the amount of the potential benefit is allocated to the cash-generating units at the level of which management monitors goodwill. It is tested for impairment once a year at the end of the reporting period and during the year if there are indications of impairment. The impairment test compares the carrying amount to the recoverable amount. The value in use, which is calculated using the discounted cash flow method based on the current corporate planning, is used as the recoverable amount. If this value is below the carrying amount, a check is made as to whether the net fair value (NFV: fair value less costs to sell) is higher. If the carrying amount exceeds the recoverable amount, an impairment loss is then recognized in the amount of the difference, which is reported as a write-down. The subsequent reversal of write-downs is not permitted.

Goodwill is not amortized.

Other intangible assets – Intangible assets are capitalized at cost. Research costs are always recognized in expenses. Development costs are only capitalized if a newly developed product or process can be clearly defined, is technically feasible and is intended either for own use or marketing purposes. Furthermore, capitalization requires that the costs can be reliably measured and there is reasonable assurance of a future economic benefit. Any other development costs are immediately expensed.

Finite-lived intangible assets are amortized by straight-line charges from the date of first use over the economic lives.

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The measurement is subject to the following useful lives:

	Years
Concessions and industrial property rights	3-15
Development costs	5-10
Customer relations	5-15
Technology	5-15

Property, plant and equipment – Property, plant and equipment are carried at cost less accumulated depreciation and any impairment. Depreciation is recognized on a straight-line basis over the expected useful life.

	Years
Buildings	20-50
Other structures	8-30
Equivalent titles	5-15
Production plant and machinery	3-20
Other plant, factory and office equipment	3-15

Leases – Agreements that transfer the right to use assets for a specified period of time in return for payment or a series of payments are leases.

For leases of land, buildings, machinery, technical equipment, and vehicles, Rheinmetall as the lessee recognizes a financial liability in the amount of the present value of the lease payments to be made over the term of the lease. The calculation of present value accounts for fixed lease payments, variable index-based payments, expected payments for residual value guarantees, exercise prices of call options and payments from the early termination of the lease less any rental incentives. The calculated lease payments are discounted at the date of commencement of the lease by the appropriate incremental borrowing rate specific to the lease term or, if this is not available, by a similar interest rate. The lease liability is reduced by the repayment portion of the lease payment until the lease expires.

At the same time, Rheinmetall as lessee recognizes a right-of-use asset equal to the cost at the date of commencement of the lease. Starting at the value of the lease liability, the cost is increased in some circumstances by initial direct costs, dismantling costs, and lease payments that are made by the lessee before or at the commencement of the transfer of use and therefore not included in the lease liability. The rights of use are amortized over the shorter of the remaining term of the leases and the useful life of the relevant leased asset.

In the case of leases with a term of less than one year, lease payments are recognized directly in other operating expenses. The same also applies to leases for low-value assets whose value is less than €50 thousand and which are not land, buildings, or vehicles.

Investment property – Investment property is property held to earn rental income or to benefit from long-term capital appreciation, and not for use in production or administration.

Investment property is carried at cost less cumulative depreciation and any impairment. Depreciation is recognized on a straight-line basis over useful lives of 20 to 50 years.

Financial instruments – A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

The first-time recognition of financial instruments is at fair value. Acquisition-related costs are included here, unless the financial instrument is measured at fair value in subsequent periods. Standard market purchases and sales of financial assets are recognized for the first time on the settlement date. This is the date when the financial instrument is delivered or the payment is made. Notwithstanding this, derivatives are recognized for the first time as of the date when the contract is concluded or the trading date.

There are three measurement categories for the subsequent measurement of financial instruments: (1) measurement at amortized cost, (2) measurement at fair value through other comprehensive income (FVOCI), and (3) measurement at fair value through profit or loss (FVTPL). The relevant measurement category for a financial instrument depends on the contractual cash flow characteristics of the financial asset and the entity's business model for managing financial assets.

If the contractual cash flows comprise solely payments of principal and interest ("solely payments of principal and interest" (SPPI) criterion met) and the business model is "hold," financial instruments are measured at amortized cost. Financial instruments with SPPI cash flows but the "hold and sell" business model are measured at fair value through other comprehensive income. If the SPPI criterion is not met, the financial instruments are likewise measured at fair value, but the changes in value are recognized through profit or loss. In the case of debt instruments, changes in value can be recognized through profit or loss despite fulfillment of the SPPI criterion by exercising the fair value option. In the case of equity instruments, the fair value OCI option provides the opportunity to recognize changes in value through other comprehensive income.

Trade receivables and liquid financial assets are generally measured at amortized cost. Trade receivables classified by Group companies as available for sale must be measured at fair value through other comprehensive income. Non-interest receivables are discounted by applying rates that match their maturity on first-time recognition and written down using the effective interest method. Loss allowances are recognized for expected future credit losses, which are calculated on the basis of customer credit rating, specific country risks and the structure of financing transactions. The loss allowance for expected default risks is recognized in the income statement.

Cash and cash equivalents are measured at amortized cost. Cash and cash equivalents comprise any liquid assets with a remaining term of less than three months at the date of their purchase.

Changes in the fair value of derivative financial instruments are recognized in the income statement. If the conditions under IFRS 9 are met, they are accounted for as cash flow hedges. The effective portion of the changes in the fair value of the designated derivative is recognized in equity in the hedge reserve. The cumulative changes in fair value are reclassified from equity to the income statement if the hedged item is recognized in the income statement. Changes in the fair value attributable to the ineffective portion of the hedge are always recognized in the income statement.

Financial liabilities are measured at amortized cost using the effective interest method.

Inventories – Inventories are carried at cost, usually using the weighted average. Inherent risks due to reduced utility or to obsolescence are adequately allowed for. If the net realizable value of inventories is lower than their carrying amount as of the end of the reporting period, they are written down to net realizable value. The write-down is recognized either as cost of materials (raw materials and supplies) or a change in inventories of finished products and work in progress. If the net realizable value of inventories previously written down increases, the ensuing reversal is routinely offset against cost of materials (raw materials and supplies) or recognized as a change in inventories of finished products and work in progress.

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Contract assets and contract liabilities – Contract assets are recognized in connection with contracts with customers if, in the case of contract manufacturing, the cumulative sales recognized over time exceed the sum of the advance payments received and progress billings. This asset item is tested for impairment and impaired if necessary at the end of the reporting period. If the recognized sales are lower than the sum of the advance payments received and progress billings, a contract liability is recognized. A contract liability is also recognized if advance payments are received and consideration has not already been provided.

Deferred taxes – Deferred taxes are recognized for temporary measurement differences between items shown in the statement of financial position under IFRS and according to the local tax laws of the individual companies. Deferred tax assets also include the tax assets receivable from the expected future utilization of tax loss carryovers (if their realization is reasonably certain). Deferred taxes are calculated on the basis of the tax rates applicable or announced in each country as of the end of the reporting period.

Tax provisions are recognized on the basis of appropriate estimates for obligations to the respective national tax authorities that are uncertain in terms of amount and probability of occurrence. The tax rate specific to the company effective at the end of the reporting period is used. Other factors are also taken into account, such as experience from previous external audits and different legal interpretations between taxpayers and the tax authorities with regard to the issue at hand. Uncertain income tax items are recognized at the most likely amount.

Pensions – Pension provisions for defined benefit plan obligations are calculated using the projected unit credit method. The amount of obligations is calculated based on assumptions concerning mortality, expected future pay and pension increases, plan participant turnover rates, the discount rate and other actuarial parameters. The fair value of the plan assets is deducted from the DBO volume. Any excess of plan assets over the DBO volume (a defined benefit asset) is only recognized if and to the extent that it can actually be utilized. If there are deviations between the actuarial assumptions and the actual development of underlying parameters used to calculate the projected unit credits and the market value of the pension assets, gains and losses arise from remeasurement of the net defined benefit liability. These effects arising from remeasurement and the asset cap are recognized directly in equity under retained earnings in the year they occur.

Under defined contribution plans, the company incurs no obligations other than to pay the contributions to earmarked post-employment benefit plans. The payments incurred are recognized in personnel expenses.

The Rheinmetall Group also participates in multi-employer pension plans. As these are defined benefit plans, they are accounted for accordingly.

Provisions – Other provisions take into account all identifiable commitments and obligations to third parties if based on past transactions or events and if it is probable that an outflow of resources (which can be reliably estimated) embodying economic benefits results. If the time value of money is material, provisions are discounted to their settlement amount as of the end of the reporting period. The settlement amount also accounts for identifiable future cost increases.

Revenue recognition – Revenue is recognized when the promised goods or services are transferred to the customer and the customer obtains control over them. Revenue is measured at the transaction price that is expected to be received as consideration. The transaction price is lowered by variable consideration such as rebates, bonuses, and penalties for late deliveries or increased by agreed and estimated price adjustments. If, especially in the case of longer-term contracts with customers, the revenue is recognized and the payments are received at different times, the contract must examined to determine whether it contains a significant financing component, which must be accounted for in the calculation of the transaction price.

If a contract with a customer relates to contract manufacturing, in which customer-specific products including a significant integration service are provided, the revenue is recognized over time. The revenue to be recognized is determined by the percentage of completion of the respective contract. This is calculated as the ratio of costs actually incurred to the estimated total costs. The costs associated with the customer contract are recognized in the income statement when incurred. In the case of service contracts, the revenue for the period is usually determined pro rata temporis.

Expenses – Operating expenses are recognized when caused or when the underlying service is used.

Interest and dividends – Interest income and expense are recognized on an accrual basis. Dividends are recognized in income when the legal claim to payment is established.

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Summary of main measurement methods:

Assets	
Goodwill	Cost (subsequent measurement: impairment test)
Intangible assets	(Amortized) cost
Rights of use	(Amortized) cost
Property, plant and equipment	(Amortized) cost
Investment property	(Amortized) cost
Investments accounted for using the equity method	Equity method
Inventories	(Amortized) cost
Trade receivables	(Amortized) cost/FVOCI [1]
Cash and cash equivalents	(Amortized) cost
Financial assets	
"Hold" business model, SPPI[2] met	(Amortized) cost
"Hold and sell" business model, SPPI[2] met	Fair value through other comprehensive income
Derivatives	Fair value through profit or loss
All other financial assets	Fair value through profit or loss

Equity and liabilities	
Provisions for pensions and similar obligations	Present value of DBO
Other provisions	Discounted settlement amount
Financial debts	(Amortized) cost
Trade liabilities	(Amortized) cost
Other liabilities	
Derivatives	Fair value
Miscellaneous	(Amortized) cost

[1] FVOCI – fair value through other comprehensive income

[2] SPPI – solely payments of principal and interest

Estimates – The preparation of the consolidated financial statements requires assumptions and estimates affecting the application of accounting principles within the Group and the disclosure of assets, liabilities, income and expenses.

When examining the recognition of goodwill of €550 million as of December 31, 2018 (previous year: €550 million), assumptions and estimates relating to forecasts and the discounting of future cash flows were made to calculate the recoverable amount of the relevant cash-generating units. Details of the parameters used are provided under note (9).

The carrying amounts as of December 31, 2018, of other intangible assets of €172 million (previous year: €229 million), property, plant and equipment of €1,310 million (previous year: €1,270 million) and investment property of €42 million (previous year: €46 million) are assessed to determine whether there are indications of a possible impairment and whether the recoverable amount is lower than their carrying amount. When calculating the recoverable amounts, assumptions and estimates are made on the cash flows from realizable sales prices, costs and the discount rates. The yield curves used in the measurement of derivatives include assumptions about the expected future development of interest rates, taking into account estimated liquidity risks dependent on terms. Moreover, the measurement models used also incorporate parameters that are based on assumptions about volatilities and discount rates.

The measurement of pension provisions and similar obligations of €972 million as of December 31, 2018 (previous year: €1,080 million), is based on the determination of actuarial parameters such as the discount rate, pension development and probability of death. The effect of changes in the parameters used as of the end of the reporting period on the present value of the DBO is shown under note (20). Any discrepancy between the parameters assumed at the beginning of the fiscal year and the actual conditions at the end of the reporting period has no impact on earnings after taxes, as gains and losses due to the remeasurement of the net defined benefit liability resulting from the discrepancy are recognized directly in equity.

The recognition of sales over time in the amount of €1,605 million in fiscal 2018 (previous year: €1,446 million) is based on estimates of the expected total contract costs and contract revenue. Comparing the actual contract costs incurred to expected total costs shows the percentage of completion as of the end of the reporting period, on the basis of which the pro rata sales for the period are calculated.

The calculation of future tax advantages which reflect the recognition of deferred tax assets of €217 million as of December 31, 2018 (previous year: €217 million), is based on assumptions and estimates on the development of tax income over a planning period of usually five years and tax legislation in the countries of the Group companies based there.

When assessing and accounting for legal risks and opportunities, estimates on the possible occurrence and the amount of the expected obligations are made. In the process, the management deploys internal legal assessments and evaluations by external attorneys.

The respective assumptions and estimates are based on premises which represent the most recent knowledge. Actual developments may result in amounts differing from these estimates. Changes in accounting estimates are recognized in the period of change where the change affects this period only. If changes in estimates affect both the current period and future periods, these are recognized accordingly in the periods in question.

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(9) Goodwill, other intangible assets

€ million		Goodwill	Development costs	Intangible assets	Total
Cost					
As of Jan. 1, 2017		554	338	382	1,274
Additions		-	15	11	26
Disposals		-	(3)	(5)	(8)
Book transfers		-	-	3	3
Currency differences		(4)	(6)	(9)	(19)
As of Dec. 31, 2017/Jan. 1, 2018		**550**	**344**	**382**	**1,276**
Additions		-	16	9	25
Disposals		-	(1)	(2)	(3)
Book transfers		-	(1)	3	2
Currency differences		-	2	(1)	1
As of Dec. 31, 2018		**550**	**360**	**391**	**1,301**

€ million		Goodwill	Development costs	Intangible assets	Total
Amortization and depreciation/impairment					
As of Jan. 1, 2017		-	183	272	455
Current period	(29)	-	35	23	58
Write-ups		-	(2)	-	(2)
Disposals		-	-	(5)	(5)
Currency differences		-	(3)	(6)	(9)
As of Dec. 31, 2017/Jan. 1, 2018		**-**	**213**	**284**	**497**
Current period	(29)	-	61	24	85
Write-ups		-	-	(2)	(2)
Book transfers		-	1	(1)	-
Currency differences		-	(1)	-	(1)
As of Dec. 31, 2018		**-**	**274**	**305**	**579**
Carrying amount as of Dec. 31, 2017		550	131	98	779
Carrying amount as of Dec. 31, 2018		**550**	**86**	**86**	**722**

Goodwill is managed at the level of the Automotive and Defence sectors and regularly tested for impairment. Goodwill was tested for impairment as of December 31, 2018. No impairment was revealed. The impairment test uses the value in use of the cash-generating unit, which is calculated using the discounted cash flow method based on a three-year detailed planning period. For periods after the detailed planning phase, cash flows are extrapolated from the last planning period, taking into account growth rates based on the long-term inflation forecast.

In the Rheinmetall Group, the corporate plan is prepared on the basis of empirical and current forecast data. Within the Defence sector, planning is predicated on projects already included in its order backlog, on customer inquiries and, most importantly, on national defence budgets of relevant customers. Key planning assumptions by Automotive are based on the sector forecasts underlying sales plans and covering the worldwide automotive market trend, the planned engine programs of carmakers, specific customer commitments to individual projects and adjustments specific to Automotive adjustments to allow for planned product innovations and cost savings.

The discount rates for each sector and the carrying amounts of the goodwill of the divisions are shown below.

€ million	Dec. 31, 2018			Dec. 31, 2017		
	Carrying amount	WACC before taxes	WACC after taxes	Carrying amount	WACC before taxes	WACC after taxes
Divisions Defence						
Weapon and Ammunition	179	9.0%	6.6%	179	9.9%	7.3%
Electronic Solution	120	9.8%	7.3%	120	9.9%	7.3%
Vehicle Systems	82	8.8%	6.5%	82	9.4%	6.8%
Divisions Automotive						
Mechatronics	67	10.8%	7.9%	67	10.5%	7.7%
Hardparts	87	9.0%	7.7%	87	10.3%	7.5%
Aftermarket	15	12.3%	8.9%	15	11.6%	8.5%

For the period after the last planning year, a growth rate of 1.0% (previous year: also 1.0%) was deducted from the risk-specific pretax discount rate.

In addition to the impairment test, each cash-generating unit was subjected to sensitivity analyses. These analyses assumed scenarios based firstly on a 0.5 percentage point higher discount rate and secondly a 0.5 percentage point lower growth rate. For further sensitivity, the cash flows used to calculate the terminal value were reduced by a flat rate of 10%. None of the sensitivity analyses resulted in impairment of the recognized goodwill.

In addition to capitalized development costs of €16 million, €225 million was recognized as expenses for research and development costs in 2018 (previous year: €209 million).

(10) Rights of use

The capitalized rights of use from leases primarily relate to rented office and production space at various locations in Germany and abroad. The rental agreements for property usually include options for renewals and index-based rent price adjustment clauses.

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€ million	Property - land	Property - buildings	Passenger cars	Other rights of use	Total
Cost					
As of Jan. 1, 2018 (adjustment IFRS 16)	15	144	12	3	174
Additions	-	14	7	3	24
Disposals	-	(3)	-	-	(3)
Book transfers	6	10	-	-	16
Currency differences	-	(1)	-	-	(1)
As of Dec. 31, 2018	**21**	**164**	**19**	**6**	**210**

€ million	Property - land	Property - buildings	Passenger cars	Other rights of use	Total
Amortization and depreciation/impairment					
As of Jan. 1, 2018	-	-	-	-	-
Current period (29)	1	26	6	2	35
Book transfers	-	5	-	-	5
As of Dec. 31, 2018	**1**	**31**	**6**	**2**	**40**
Carrying amount as of Dec. 31, 2018	**20**	**133**	**13**	**4**	**170**

Besides the amortization of rights of use indicated above, the additional expenses below were also recognized in the income statement in connection with leases:

€ million	**2018**
Expenses from short-term leases	8
Expenses for low-value leased assets	4
Interest expenses from lease liabilities	6

On the initial recognition of lease liabilities of €174 million, interest rates of appropriate terms and currencies were used to calculate the present values. The significant leases are attributable to real estate in the euro area (interest rate 2.35%) and in South Africa (interest rate 10.18%) and to passenger cars in the euro area (interest rate 1.75%).

The reconciliation of other financial liabilities to the initial recognition of lease liabilities is as follows:

€ million	
Other financial obligation as of Dec. 31, 2017	204
No capitalization, short-term leases and leases of low-value leased assets	(17)
Changed assessment of contractual conditions of the lease	(13)
Lease liabilities as of Jan. 1, 2018	174

The leases are expected to result in the following future cash outflows:

€ million	2018			
	2019	2020-2022	from 2024	Total
Right of use property - land	1	5	14	20
Right of use property - buildings	23	76	37	136
Right of use - passenger cars	6	5	-	11
Right of use - other	2	2	-	4
	32	**88**	**51**	**171**

(11) Property, plant and equipment

€ million	Land, land rights, and buildings	Production plant and machinery	Other plant, factory and office equipment	Prepayments made and construction in progress	Total
Cost					
As of Dec. 31, 2016	1,156	2,015	594	183	3,948
Adjustment from measurement of land	(121)	-	-	-	(121)
As of Jan. 31, 2017	1,035	2,015	594	183	3,827
Additions	9	42	37	156	244
Disposals	(4)	(37)	(23)	(1)	(65)
Book transfers	9	75	37	(143)	(22)
Adjustment in scope of consolidation	(1)	(3)	-	-	(4)
Reclassification of assets held for sale	-	-	-	(1)	(1)
Currency differences	(33)	(76)	(10)	(5)	(124)
As of Dec. 31, 2017/Jan. 1, 2018	**1,015**	**2,016**	**635**	**189**	**3,855**
Additions	17	56	47	132	252
Disposals	(2)	(33)	(25)	-	(60)
Book transfers	1	55	32	(106)	(18)
Currency differences	8	17	(3)	(1)	21
As of Dec. 31, 2018	**1,039**	**2,111**	**686**	**214**	**4,050**

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€ million		Land, land rights, and buildings	Production plant and machinery	Other plant, factory and office equipment	Prepayments made and construction in progress	Total
Amortization and depreciation/impairment						
As of Dec. 31, 2016		599	1,535	436	-	2,570
Adjustment from measurement of land		(1)	-	-	-	(1)
As of Jan. 1, 2017		598	1,535	436	-	2,569
Current period	(29)	21	107	52	-	180
Disposals		(3)	(36)	(22)	-	(61)
Book transfers		(3)	(2)	(3)	-	(8)
Adjustment in scope of consolidation		(1)	(3)	0	-	(4)
Currency differences		(25)	(60)	(6)	-	(91)
As of Dec. 31, 2017/Jan. 1, 2018		**587**	**1,541**	**457**	**-**	**2,585**
Current period	(29)	20	108	62	6	196
Disposals		(1)	(32)	(24)	-	(57)
Book transfers		-	(4)	1	-	(3)
Currency differences		7	15	(2)	(1)	19
As of Dec. 31, 2018		**613**	**1,628**	**494**	**5**	**2,740**
Carrying amount as of Dec. 31, 2017		428	475	178	189	1,270
Carrying amount as of Dec. 31, 2018		**426**	**483**	**192**	**209**	**1,310**

Since the year under review, the operating land included in “Land, land rights, and buildings” has been measured according to the cost model. The comparative figures for the previous year have been adjusted accordingly. Please also refer to the comments in note (3).

(12) Investment property

€ million		2018	2017
Cost			
Jan. 1		55	64
Disposals		(2)	(13)
Book transfers		-	16
Reclassification of assets held for sale		-	(12)
As of Dec. 31		**53**	**55**
Amortization and depreciation/impairment			
Jan. 1		9	11
Current period	(29)	2	3
Disposals		-	(4)
Book transfers		-	5
Reclassification of assets held for sale		-	(5)
Currency differences		-	(1)
As of Dec. 31		**11**	**9**
Carrying amount as of Dec. 31		**42**	**46**

Investment property has a fair value of €54 million (previous year: €54 million), partially determined on the basis of independent external appraisal reports (date of last regularly prepared reports: December 31, 2013) and partially on the basis of the company's own calculations. Generally accepted measurement methods are used to calculate the fair value – a combination of the discounted cash flow method and the sales comparison approach. Both methods come under level 3 of the measurement hierarchy in IFRS 13. The discounted cash flow method is used to discount annual cash flows of leased properties and to calculate the fair value. A standard market discount rate is used in addition to market rents, which reflects the specific country's local property market and the features of the property. The sales comparison approach is used for land that cannot be rented on a long-term basis and is based on indicative land values or transactions involving similar plots of land.

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(13) Investments accounted for using the equity method

The major investments accounted for using the equity method are firstly the joint ventures Kolbenschmidt Huayu Piston Co., Ltd., HASCO KSPG Nonferrous Components (Shanghai) Co., Ltd., Pierburg Yinlun Emission Technology (Shanghai) Co. Ltd. and Pierburg Huayu Pump Technology Co. Ltd. (together China Joint Ventures), which are based in Shanghai and operated with the Chinese SAIC Group, and with which the Automotive sector is strengthening its position on the Chinese market for pistons, pumps for automotive applications and other engine parts. Secondly, the joint venture KS HUAYU AluTech GmbH (KS HUAYU), Neckarsulm, likewise conducted with the SAIC Group and operating in aluminum technology, is also significant.

Financial information (100% basis) on the major investments accounted for using the equity method

€ million	China joint ventures		KS HUAYU	
	2018	2017	2018	2017
Assets (Dec. 31)				
Non-current	422	326	130	116
Cash and cash equivalents	64	51	-	-
Other current	406	399	84	105
Financial debts (Dec. 31)				
Non-current	90	11	28	10
Current	153	141	27	18
Other liabilities (Dec. 31)				
Non-current	11	7	50	49
Current	345	375	53	99
Sales	872	845	321	318
Amortization and depreciation	64	58	18	12
Net interest	(12)	(4)	(1)	(1)
Income taxes	13	11	(2)	-
Earnings after tax	43	49	11	-

Development of the major investments accounted for using the equity method

€ million	China joint ventures		KS HUAYU	
	2018	2017	2018	2017
Net assets Jan. 1	242	213	45	50
Total comprehensive income	40	36	11	-
Earnings after tax	*43*	*49*	*11*	-
Other comprehensive income	*(3)*	*(13)*	-	-
Capital increase	*20*	-	-	-
Dividend	(9)	(7)	-	(5)
Net assets Dec. 31	**293**	**242**	**56**	**45**
Investment in %	50	50	50	50
Carrying amount of investment Dec. 31	147	121	28	23
Dividend received	5	4	-	2

The following table shows the financial information for the investments accounted for using the equity method that, considered individually, are immaterial for the Rheinmetall consolidated financial statements. The amounts given all relate to the share held by Rheinmetall:

€ million	2018		2017	
	Joint ventures	Associated companies	Joint ventures	Associated companies
Carrying amount of shares	38	72	33	65
Earnings after tax	6	5	7	3
Other comprehensive income	1	(1)	-	(3)
Total comprehensive income	7	4	7	-

(14) Inventories

€ million	Dec. 31, 2018	Dec. 31, 2017
Raw materials and supplies	457	403
Work in process	496	479
Finished products	130	128
Merchandise	112	108
Prepayments made	64	54
	1,259	**1,172**

Additions to write-downs totaled €6 million (previous year: €6 million).

(15) Trade receivables

€ million	Dec. 31, 2018	Dec. 31, 2017
Customer receivables	1,185	898
Receivables from construction contracts	-	319
	1,185	**1,217**

Receivables and liabilities from construction contracts

€ million	Dec. 31, 2017
Production costs incurred	6,374
Plus margins/less anticipated losses	858
Progress billings/payments received	(7,215)
Total	17
Of which receivables from construction contracts	*319*
Of which liabilities from construction contracts	(302)

The contract assets and contract liabilities from contract manufacturing recognized from fiscal 2018 are explained under note (24).

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(16) Liquid financial assets

Liquid financial assets comprise commercial papers with a maturity between three and eleven months issued by companies with short-term investment grade ratings (at least A3 (S&P) or P3 (Moody's) or alternative ratings from Euler Hermes with grade 4).

(17) Other assets

€ million	Dec. 31, 2018	short term	Of which non-current	Dec. 31, 2017	short term	Of which non-current
Derivatives	28	20	8	56	46	10
Receivable from a contract with a customer	37	-	37	-	-	-
Receivables from the sale of real estate	19	-	19	12	12	-
Receivables from finance leases	8	-	8	8	-	8
Bonds	6	2	4	4	2	2
Other	16	15	1	15	13	2
Financial assets	**114**	**37**	**77**	**95**	**73**	**22**
Other taxes	84	57	27	64	46	18
Contract acquisition costs	67	-	67	-	-	-
Subsidies/grants receivable	61	45	16	40	25	15
Deferred income	35	25	10	28	16	12
Prepayments made	-	-	-	18	18	-
Reimbursement claims from insurances	14	14	-	11	11	-
Other	8	-	8	7	1	6
Non-financial assets	**269**	**141**	**128**	**168**	**117**	**51**
Other assets	**383**	**178**	**205**	**263**	**190**	**73**

The receivable from a contract with a customer was deferred and accordingly reclassified from trade receivables to other non-current financial receivables. The receivable was written down by €10 million.

The receivable from the sale of real estate results from sales of developed plots in Hamburg.

The finance lease receivables relate to the letting of a production building built in the previous year to the joint venture KS HUAYU. The lease has a term of 30 years with a renewal option for a further five years and a non-guaranteed residual value of €1 million. The interest rate of 3.62% on which the lease is based was used to calculate the present value of the lease payments.

€ million	Dec. 31, 2018			Dec. 31, 2017		
	2019	2020-2023	from 2024	2018	2019-2022	from 2023
Minimum lease payments	-	2	11	-	2	11
Present value of minimum lease payments	-	2	6	-	2	6

The unearned financial income amounted to €6 million as at December 31, 2018 (December 31, 2017: €6 million).

Please see note (24) for information on contract acquisition costs.

The subsidies/grants receivable essentially relate to grants paid by public administrative bodies to subsidize the in-house development of new technologies.

(18) Cash and cash equivalents

€ million	Dec. 31, 2018	Dec. 31, 2017
Bank balances in credit institutions, checks, cash in hand	629	598
Short term investments (up to 3 months to maturity)	95	159
	724	**757**

(19) Equity

Subscribed capital – The subscribed capital of Rheinmetall AG is unchanged at €111,510,656 and is divided into 43,558,850 no-par value shares (shares with no nominal value).

Authorized capital – By way of resolution of the Annual General Meeting on May 10, 2016, the Executive Board was authorized, with the approval of the Supervisory Board, to increase the share capital of the company by up to €50,000,000 in total by May 9, 2021, by issuing new no-par shares in return for contributions in cash or in kind. Shareholder subscription rights for up to 10% of the current share capital of the company can be disapplied at an issue price not significantly below the stock market price. The Executive Board is granted the option of carrying out capital increases in return for contributions in kind for the granting of shares for the purpose of acquiring companies, parts of companies or investments, or of issuing a limited number of employee shares without subscription rights.

Contingent capital – By way of resolution of the Annual General Meeting on May 10, 2016, the Executive Board was authorized to issue bonds with warrants or convertible bonds with a total nominal value of up to €800,000,000 and to create the associated contingent capital of up to €20,000,000.

With the approval of the Supervisory Board, the Executive Board can issue interest-bearing bonds with warrants or convertible bonds on one or several occasions until May 9, 2021, and attach options or conversion rights to the respective bonds entitling the acquirer to subscribe to a total of up to 7,812,500 shares of Rheinmetall AG. This does not affect shareholders' statutory pre-emptive rights. The Executive Board is also authorized to disapply the statutory right of shareholders to subscribe to bonds within certain limits. The subscription right is to be disapplied to the extent necessary to be able to offset any fractional amounts that may arise when determining the subscription ratio or to be able to grant subscription rights to bearers of bonds with warrants and/or convertible bonds that have already been issued. Subscription rights are also disapplied for up to 4,355,885 new shares, corresponding to €11,151,056.60 or 10% of the current share capital. The disapplication of pre-emptive subscription rights is limited to a maximum of 20% of share capital.

Retained earnings – The retained earnings include earnings generated by the Rheinmetall Group in the past less profit distributed.

Effects from the currency translation of subsidiaries' financial statements not prepared in euro, from the remeasurement of pension plans recognized in other comprehensive income, from the

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measurement of derivatives in cash flow hedges and other comprehensive income from investments accounted for using the equity method (other income) are also reported here.

Treasury shares – By way of resolution of the Annual General Meeting on May 10, 2016, the Executive Board of the company is authorized to acquire treasury bearer shares equivalent to a maximum of 10% of the share capital existing on this date of €111,510,656. The acquisition may be via the stock exchange or by public bid directed at all shareholders or by public invitation to submit a purchase bid. In this case, the purchase price per share in the event of an acquisition via the stock exchange must not be more than 10% higher or lower than the average closing price of the shares in Xetra trading on the Frankfurt Stock Exchange on the three preceding trading days. In the event of a public bid or an invitation to submit such a bid, the purchase price offered and paid must not be more than 10% higher or lower than the average closing price of the shares in Xetra trading on the Frankfurt Stock Exchange on the fifth to third trading day prior to publication of the purchase bid.

The Executive Board is authorized to retire or resell the treasury shares acquired on the basis of this authorization or earlier authorizations without further Annual General Meeting resolutions.

As in the previous year, no treasury shares were acquired in the reporting year. Disposals related to the long-term incentive program and the European share purchase program for employees, which are described under note (37). Sales proceeds from the disposals are used for general financing purposes. As of December 31, 2018, the portfolio of treasury shares amounted to 577,056 shares with acquisition costs of €21 million. The amount of subscribed capital attributable to treasury shares totaled €1,477 thousand. This represents a share in subscribed capital of 1.3%.

Other comprehensive income

€ million	2018			2017		
	Gross amount	Tax effect	Net amount	Gross amount	Tax effect	Net amount
Remeasurement of net defined benefit liability from pensions	64	(12)	52	45	(16)	29
Amounts not reclassified to the income statement	**64**	**(12)**	**52**	**45**	**(16)**	**29**
Change in value of derivatives (Cash flow hedges)	(28)	8	(20)	25	(6)	19
Currency translation difference	(1)	-	(1)	(67)	-	(67)
Other comprehensive income from investments accounted for using the equity method	(2)	-	(2)	(11)	-	(11)
Amounts reclassified to the income statement	**(31)**	**8**	**(23)**	**(53)**	**(6)**	**(59)**
Other comprehensive income	**33**	**(4)**	**29**	**(8)**	**(22)**	**(30)**

In fiscal 2018, Rheinmetall AG paid a dividend of €73 million or €1.70 per share (previous year: €62 million or €1.45 per share) to its shareholders from its retained earnings.

At the Annual General Meeting on May 28, 2019, the Executive Board and Supervisory Board intend to propose a dividend payment of €2.10 per share. The total amount paid out will be €90 million.

Significant non-controlling interests – Significant non-controlling interests of 49% are held by other shareholders in the subgroup of Rheinmetall MAN Military Vehicles GmbH, Munich. The Group's financial information is shown below.

€ million	2018	2017
Non-controlling interests included in equity (Dec. 31)	39	(3)
Assets (Dec. 31)	879	697
Of which non-current	*169*	*143*
Of which inventories	*234*	*221*
Liabilities (Dec. 31)	803	691
Of which non-current	*119*	*90*
External sales	982	903
Internal sales	59	17
Earnings after tax	73	26
Of which from minority interests	*36*	*14*
Total comprehensive income	72	26
Of which from minority interests	*35*	*14*
Cash flows from operating activities	(18)	94

Non-controlling interests in earnings after taxes – The earnings after taxes attributable to shareholders that hold non-controlling interests in Group companies break down as follows:

€ million	Non-controlling interests	2018	2017
Subgroup of Rheinmetall MAN Military Vehicles GmbH	49%	36	14
Rheinmetall Denel Munition Pty. Ltd.	49%	6	11
Rheinmetall Chempro GmbH	49%	3	3
Other		4	-
		49	28

Capital management – Capital management is geared towards sustainably increasing enterprise value, securing sufficient liquidity and preserving the Rheinmetall Group's credit standing. The Group manages and monitors its capital structure in order to achieve its business targets regarding operations, necessary capital expenditure and strategic acquisitions and to optimize capital costs. Debt management pursues a diversified financing strategy to guarantee continual access to liquid funds both via money and capital markets and via bank financing.

The key figures for capital management in the Rheinmetall Group are the equity ratio and the ratio of net financial liabilities to equity (gearing).

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€ million	Dec. 31, 2018	Jan. 1, 2018	Dec. 31, 2017
Cash and cash equivalents	(724)	(757)	(757)
Liquid financial assets	(100)	(119)	(119)
Financial debts	855	820	646
Net financial debts	31	(56)	(230)
Equity	2,172	1,860	1,870
Equity ratio	32.1%	29.4%	30.7%
Net gearing	(1.4%)	3.0%	12.3%

Further information on the financing strategy and on the asset and capital structure is contained in the combined management report.

(20) Provisions for pensions and similar obligations

Rheinmetall's company pension systems consist of both defined contribution and defined benefit plans.

Defined contribution plans – Under defined contribution plans, the relevant company pays contributions to earmarked pension institutions, which are reported in personnel expenses. The company does not enter into any further obligations; a provision is not recognized.

Personnel expenses of €73 million (previous year: €75 million) were incurred in the year under review for defined contribution pension commitments, which mainly relate to payments to statutory pension institutions in Germany.

Defined benefit plans – Under its defined benefit plans, Rheinmetall is required to meet confirmed benefit obligations to active and former employees. Provisions are recognized for obligations under vested rights and current pensions payable to eligible active and former employees, retirees and surviving dependents, taking into account any plan assets. There are material pension plans at the Rheinmetall Group's German and Swiss companies.

Rheinmetall has implemented a Group-wide defined benefit plan for its subsidiaries based in Germany, which consists of three elements: a basic plan and a corporate performance-related intermediate plan, each of which are financed by the employer, and a supplementary plan financed through deferred compensation. The agreed retirement benefits comprise old-age pensions, invalidity pensions and pensions for surviving dependents. The annual pension contribution or the amount of deferred compensation for each beneficiary in accordance with actuarial principles is converted into a capital component. The total pension capital when benefits become due is based on the sum of all capital components. In the case of the basic plan and intermediate plan, pension capital is paid out in the form of a life-long pension that increases annually in accordance with an agreement. In the case of the supplementary plan financed solely by the employee, the pension capital is paid out as a lump sum when benefits become due.

Other pension plans exist in Germany, but these are no longer available to new employees joining the Group. The agreed retirement benefits comprise old-age pensions, invalidity pensions and pensions for surviving dependents. Depending on the plan, these are based on agreed fixed amounts per year of service or on a percentage of the employee's final salary before leaving the Rheinmetall Group. Ongoing retirement benefits are subject to compensation for inflation.

The pension obligations of the German companies are largely financed internally. Rheinmetall has set up a contractual trust agreement (CTA) with the aim of spreading the financing of its pension and partial retirement obligations across several pillars over the long term. Since 2016, a total of €100 million has been paid into a fund managed by a trustee, of which €85 million was allocated to pension obligations and €15 million to partial retirement obligations. Pension payments to the beneficiaries are made by the respective Group companies.

There are pension plans at the Swiss subsidiaries, each of which are managed via pension funds for several companies (multi-employer plans). These are defined benefit plans used to cover pensions and risks arising from invalidity and death for former employees, their relatives and surviving dependents. On retirement, the pension is based on the available retirement assets multiplied by conversion rates determined by pension fund regulations, whereby payment can take place monthly or in certain cases as a lump sum. Pension plans are financed by contributions made by the employer and employee, primarily at a rate of 50% each, which are paid into pension funds. The pension funds are independent foundations that do not belong to the Rheinmetall Group, whose funds are due solely to pension beneficiaries. Any return of assets and income to the contributing companies is excluded. The top bodies in the foundations comprise equal numbers of employer and employee representatives of the relevant companies. The foundations are responsible for investments. Principles of security, risk distribution, yield and liquidity must be observed in this process in order to be able to render the agreed benefits from the foundation's assets when due. Both contributions paid into the pension funds and future benefits arising from these are reviewed regularly by the foundation's bodies and may be changed after taking into account the foundation's financial options. In the event of a shortage of cover, the pension funds can levy remedial contributions from all associated employers if other measures do not lead to the desired result. Liability of the Swiss subsidiaries towards the companies belonging to the pension funds is excluded. At one Swiss subsidiary, benefits from the pension fund provided for in accordance with the pension plan are also covered by an insurance policy.

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The present value of the DBO, plan assets and pension provisions developed as follows:

€ million	2018			2017		
	Present value of DBO	Plan assets	Pension provision	Present value of DBO	Plan assets	Pension provision
Jan. 1	**2,251**	**(1,171)**	**1,080**	**2,382**	**(1,196)**	**1,186**
Current service cost	31	-	31	34	-	34
Past service cost	-	-	-	(10)	-	(10)
Interest cost	22	-	22	23	-	23
Interest income	-	(7)	(7)	-	(6)	(6)
Settlement	(52)	52	-	-	-	-
Income from disposal of pension obligation	(5)	-	(5)	-	-	-
Entry benefits/leaving benefits [1)]	-	-	-	(1)	-	(1)
Amounts recognized in the income statement	**(4)**	**45**	**41**	**46**	**(6)**	**40**
Income from plan assets excluding interest income	-	(19)	(19)	-	(79)	(79)
Actuarial gains (-) and losses (+)						
Change in financial assumptions	(48)	-	(48)	1	-	1
Change in demographic assumptions	12	-	12	3	-	3
Empirical adjustments	(9)	-	(9)	30	-	30
Other comprehensive income from remeasurement of net defined benefit liability	**(45)**	**(19)**	**(64)**	**34**	**(79)**	**(45)**
Employer contributions	-	(52)	(52)	-	(45)	(45)
Employee contributions	8	(8)	0	9	(9)	-
Pension payments	(100)	59	(41)	(104)	64	(40)
Currency differences/Other	45	(37)	8	(116)	100	(16)
As of Dec. 31	**2,155**	**(1,183)**	**972**	**2,251**	**(1,171)**	**1,080**
thereof Switzerland	*1,134*	*(1,049)*	*85*	*1,159*	*(1,007)*	*152*
thereof Germany	*940*	*(97)*	*843*	*941*	*(60)*	*881*
thereof others	*81*	*(37)*	*44*	*151*	*(104)*	*47*

[1)] *Results from employees at the Swiss subsidiaries changing employer.*

The service cost and the balance of entry/leaving benefits are reported under personnel expenses. A negative past service cost (income) arose in 2017 as a result of the adjustment of the regulations of the pension fund of subsidiaries in Switzerland, which led to a reduction in the pension obligation.

The pension obligations at two subsidiaries in the US were transferred at the end of 2018 to an insurance company in return for a one-off compensation payment. The pension plan has been closed for new employees and fully externally funded since 2003. The transfer resulted in income of €5 million, which was recognized in net interest, as this plan would have resulted exclusively in interest effects even if it had continued within the Group.

Net interest expense is included in net interest.

The application of the new 2018G mortality tables by Heubeck for the measurement of pension obligations of German Group companies resulted in actuarial expenses of €11 million, which were recognized in other comprehensive income and contained in the 'Change in demographic assumptions' item.

Employers and employees made total payments of €60 million to plan assets (previous year: €54 million). €40 million (previous year: €30 million) of this relates to the allocation to CTA assets for pension obligations in Germany.

Key pension plans – The statements below refer to the pension plans of Group companies based in Germany and Switzerland.

The pension plans relate to the following beneficiaries:

Number of people

	Dec. 31, 2018		Dec. 31, 2017	
	Germany	Switzerland	Germany	Switzerland
Active employees	10,103	1,087	9,972	1,109
Vested rights of former employees not subject to expiration	2,073	-	2,117	-
Pensioner	10,603	1,837	10,567	1,876
Total	**22,779**	**2,924**	**22,656**	**2,985**

As in the previous year, the average durations of pension obligations are 17 years at the German companies and 11 years at companies based in Switzerland.

In order to determine the present value of the DBO in due consideration of actuarial factors, measurement assumptions were made according to standard principles and per country, taking into account the respective economic circumstances. Discount rates are derived from yields on fixed-interest corporate bonds with a suitable duration and currency which are rated "AA" or better. The discount rate for Germany is determined using a standard procedure specified by the Group actuary on the basis of market data as of December 31, 2018, and the duration for a mixture of active employees and retirees. The following table presents the key underlying actuarial parameters:

Parameters in %

	Dec. 31, 2018		Dec. 31, 2017	
	Germany	Switzerland	Germany	Switzerland
Discount rate	1.80	1.15	1.75	0.74
Pension development	1.75	0.00	1.75	0.00
Life expectancy	2018 G mortality tables by Heubeck	BVG2015 Generation tables	2005 G mortality tables by Heubeck	BVG2015 Generation tables

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The following table shows the parameters where a change in values determined as of the end of the reporting period would have a significant impact on the present value of the DBO. Pension commitments in Switzerland are excluded from changes in the present value of the DBO based on assumptions on pension development, as the pension funds' regulations do not stipulate ongoing adjustment to future pensions. Instead, the foundation board decides on any adjustments. The potential impact of a change in mortality expectations was analyzed by increasing the individual statistical life expectancy of each employee by one year.

Change in present value of DBO

€ million	Dec. 31, 2018		Dec. 31, 2017	
	Germany	Switzerland	Germany	Switzerland
Discount rate - 0.25%	36	31	36	30
Discount rate + 0.25%	(34)	(30)	(34)	(28)
Pension development - 0.50%	(30)	-	(32)	-
Pension development + 0.50%	33	-	35	-
Increase in life expectancy by 1 year	49	53	48	56

The Rheinmetall Group is exposed to various risks as a result of defined benefit pension commitments. As well as general actuarial risks arising from the measurement of pension obligations, the plan assets harbor investment risks. The investment strategy and composition of assets managed by pension funds are geared towards yield targets, risk tolerance and short-term and medium-term liquidity requirements.

Fair value of the plan assets in %

	Dec. 31, 2018	Dec. 31, 2017
Properties	44	43
Equities, Funds	33	32
Corporate bonds	8	10
Other	15	15
Total	**100**	**100**

The fair values of shares, funds, fixed-interest securities and other investments are determined based on market prices in an active market. The fair values of property are not based on market prices in an active market.

For the following year, the estimated cash outflows for contributions to plan assets are shown below.

€ million	2019
Employer contributions to plan assets	39
Employee contributions to plan assets	8

The forecast cash outflows for the payment of pensions from the pension plans are as follows for the following periods:

€ million	Payments from plan assets	Payments from companies
2019	61	43
2020	61	38
2021	64	39
2022	63	39
2023	64	42
2024-2028	324	205

(21) Other provisions

€ million	Personnel	Structural measures	Guar- antees	Noticeable losses	Contract- related costs	Other provisions	**Total**
As of Dec. 31, 2017	**179**	**62**	**124**	**27**	**200**	**188**	**780**
Adjustment due to IFRS 15	-	-	-	3	24	37	64
As of Jan. 1, 2018	**179**	**62**	**124**	**30**	**224**	**225**	**844**
Utilization	143	31	19	4	88	58	343
Reversal	5	2	19	1	6	34	67
Added/provided for	156	24	32	12	108	101	433
Currency differences/Other	-	(1)	2	-	-	(2)	(1)
As of Dec. 31, 2018	**187**	**52**	**120**	**37**	**238**	**232**	**866**
short term	*167*	*16*	*85*	*37*	*172*	*179*	*656*
Of which non-current	*20*	*36*	*35*	-	*66*	*53*	*210*

Personnel provisions essentially relate to variable remuneration of €92 million (previous year: €93 million) and obligations from vacation/overtime/flexitime accounts of €58 million (previous year: €55 million).

Provisions for restructuring mainly relate to termination settlements and expenses for partial retirement obligations.

Miscellaneous provisions relate to rebates and bonuses at €12 million (previous year: €22 million) and environmental risks at €27 million (previous year: €27 million).

Reversals of the provisions for rebates and discounts of €14 million were recognized as a revenue correction.

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(22) Financial debts

€ million	Dec. 31, 2018	short term	Of which non-current	Dec. 31, 2017	short term	Of which non-current
Promissory notes	300	53	247	243	-	243
Bank liabilities	374	57	317	382	58	324
Leasing	171	33	138	10	6	4
Other	10	8	2	11	10	1
	855	**151**	**704**	**646**	**74**	**572**

Promissory note loans – There are various promissory note loans that serve the Group's general corporate financing of €300 million in total as of the end of the reporting period. In 2018, Rheinmetall AG prematurely terminated variable-interest promissory note loans of €16 million in order to optimize the maturity profile and interest cost. In addition, new promissory note loans of €73 million in total with a term of seven years and a weighted average interest rate of 1.44% p.a. were issued.

€ million			Dec. 31, 2018	Dec. 31, 2017
Maturing in	Interest terms	Currency	Nominal value	Nominal value
Q4/2019	1.85%	EUR	38	38
Q4/2019	6-month EURIBOR + 1.40%	EUR	15	20
Q4/2021	2.35%	EUR	19	19
Q4/2021	6-month EURIBOR + 1.65%	EUR	9	16
Q2/2022	1.15%	EUR	107	107
Q3/2022	1.26%	EUR	10	10
Q3/2022	6-month EURIBOR + 1.00%	EUR	5	5
Q4/2024	3.00%	EUR	24	25
Q4/2024	6-month EURIBOR + 1.90%	EUR	-	4
Q1/2025	6-month EURIBOR + 1.06%	EUR	26	-
Q1/2025	1.78%	EUR	11	-
Q2/2025	6-month EURIBOR + 1.05%	EUR	5	-
Q2/2025	1.63%	EUR	31	-
			300	**243**

Bank liabilities

€ million			Dec. 31, 2018	Dec. 31, 2017
Maturing in	Type of loan	Interest terms	Nominal value	Nominal value
August 2023	EIB loan	0.962%	250	250
2025	Construction loan DG HYP	1.90%	26	29
2022-2026	KfW loan	∅ 2.66%	20	24
2020-2025	Various – medium-term	∅ 0.63%	29	34
2019 or 2018	Various – medium-term		49	45
			374	**382**

The loan from the European Investment Bank (EIB), Luxembourg, is a project-related loan granted to finance research and development activities in the Automotive sector. In particular, it is intended improve the financing of projects for the reduction of emissions from combustion engines and for alternative drive technologies.

The liabilities to banks of €68 million (previous year: €79 million) are secured by land charges and similar rights.

The cash and non-cash changes in financial liabilities are shown below.

€ million	Bond	Promissory note loans	Bank liabilities < 1 year	Bank liabilities > 1 year	Leasing	Other	Total
As of Dec. 31, 2016	**504**	**121**	**60**	**88**	**11**	**3**	**787**
Cash changes	(500)	122	(7)	246	(1)	4	(136)
Borrowing of financial debts	-	122	39	250	-	4	415
Repayment of financial debts	(500)	-	(46)	(4)	(1)	-	(551)
Non-cash changes	(4)	-	5	(10)	-	4	(5)
Currency differences	-	-	(4)	-	-	-	(4)
Adjustment in scope of consolidation	-	-	-	-	-	(1)	(1)
Interest	(4)	-	-	-	-	-	(4)
Book transfer	-	-	9	(10)	-	5	4
As of Dec. 31, 2017	**-**	**243**	**58**	**324**	**10**	**11**	**646**

€ million	Promissory note loans < 1 year	Promissory note loans > 1 year	Bank liabilities < 1 year	Bank liabilities > 1 year	Leasing	Other	Total
As of Dec. 31, 2017	**-**	**243**	**58**	**324**	**10**	**11**	**646**
Adjustment due to IFRS 16	-	-	-	-	174	-	174
As of Jan. 1, 2018	-	243	58	324	184	11	820
Cash changes	-	57	(5)	(1)	(36)	(1)	14
Borrowing of financial debts	-	73	47	4	-	30	154
Repayment of financial debts	-	(16)	(52)	(5)	(36)	(31)	(140)
Non-cash changes	53	(53)	4	(6)	23	-	21
Addition of right of use	-	-	-	-	24	-	24
Currency differences	-	-	(2)	-	(1)	-	(3)
Book transfer	53	(53)	6	(6)	-	-	-
As of Dec. 31, 2018	**53**	**247**	**57**	**317**	**171**	**10**	**855**

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(23) Other liabilities

€ million	Dec. 31, 2018	short term	Of which non-current	Dec. 31, 2017	short term	Of which non-current
Monies in transit from debt collection (ABS program)	76	76	-	74	74	-
Derivatives	24	19	5	18	14	4
Other	25	24	1	26	24	2
Financial liabilities	**125**	**119**	**6**	**118**	**112**	**6**
Advance payments received	-	-	-	331	331	-
Liabilities from other taxes	67	67	-	38	38	-
Liabilities from construction contracts	-	-	-	302	302	-
Liabilities from social security	12	12	-	12	12	-
Other	107	33	74	76	28	48
Non-financial liabilities	**186**	**112**	**74**	**759**	**711**	**48**
Other liabilities	**311**	**231**	**80**	**877**	**823**	**54**

Please see note (15) for information on construction contract liabilities in the previous year.

(24) Sales

The Group generates sales from the transfer of goods and services in the areas of automotive supply and armed forces technology. In the table below, the sales are broken down by area of activity in the two sectors of the Group.

€ million	2018			2017		
	At a point in time	Over time	Total	At a point in time	Over time	Total
Mechatronics	1,664	-	1,664	1,621	-	1,621
Hardparts	988	-	988	968	-	968
Aftermarket	367	-	367	358	-	358
Others/Consolidation	-89	-	(89)	(86)	-	(86)
Automotive sector	**2,930**	**-**	**2,930**	**2,861**	**-**	**2,861**
Weapon and Ammunition	992	64	1,056	1,039	136	1,175
Electronic Solutions	442	397	839	386	305	691
Vehicle Systems	372	1,196	1,568	475	1,005	1,480
Others/Consolidation	(190)	(52)	(242)	(310)	-	(310)
Defence sector	**1,616**	**1,605**	**3,221**	**1,590**	**1,446**	**3,036**
Group consolidation	(3)	-	(3)	(1)	-	(1)
Group total	**4,543**	**1,605**	**6,148**	**4,450**	**1,446**	**5,896**

The sales for 2018 include €4 million (previous year: 0€ million), which resulted from the inclusion of a financing component. Net interest was reduced by a corresponding amount.

In the Automotive sector, contracts with customers relate almost exclusively to serial deliveries of modules and systems for engine technology. Customers are predominantly large automotive manufacturers. The Aftermarket division is purely a spare parts trading business aimed at wholesalers and workshops. As a rule, sales are recognized at the time of delivery.

In the Defence sector, there are both customer contracts for the manufacture and supply of goods and service contracts for service and maintenance activities and for the provision of development services. Depending on contract design, sales are recognized at the time at which risk is transferred, which is agreed individually. Sales are recognized at a point in time in particular in the case of orders for protection and weapon systems and for ammunition.

In the case of customer-specific contract manufacturing, sales are recognized over time. This predominantly applies to contracts with customers in the Electronic Solutions division, to development and pilot production contracts, and to the delivery of vehicle programs.

The following contract balances result from contracts with customers:

€ million	Dec. 31, 2018	Jan. 1, 2018
Trade receivables	1,185	890
Contract assets	338	307
Contract liability	650	615

Trade receivables are recognized as soon as the goods and services have been transferred to the customer and there is an unconditional legal entitlement to the corresponding consideration. The credit term for contracts with customers is predominantly 90 days.

Contract assets exist for contracts with customers under which sales are recognized over time and the performance rendered has not yet been billed. As of the end of the reporting period, the contract assets were reduced by €4 million (January 1, 2018: €3 million).

Contract liabilities result from advance payments received and the excess of customer payments over the performance already rendered in the case of contract manufacturing. The amount shown for contract liabilities at the beginning of the period of €615 million was recognized as sales in the year under review.

In addition, there are assets from contract acquisition in connection with contracts with customers, which are as follows:

€ million	2018
As of Jan. 1, 2018	73
Addition	17
Write-down	(23)
As of Dec. 31, 2018	67

The assets from contract acquisition relate to contracts with customers in the Defence sector and comprise commissions for agents and indirect offset costs. Offset costs are usually incurred for contracts with customers in which the customer wishes to support the local economy in order to offset an import business through an additional agreement. Indirect offset costs are costs that are incurred in addition to the manufacturing-related costs. The assets are recognized at the time the

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costs arise and are written down in line with the sales recognition over the time of contract fulfillment.

The order backlog as of December 31, 2018, reflects the total of performance obligations not fulfilled or partly not yet fulfilled. Besides the contract value, the order backlog also includes adjustments from variable remuneration, such as index-based price adjustment clauses, which are customary in the case of longer-term orders. Future sales from the order backlog are expected for the following periods:

€ million	Order backlog	Expected sales		
	Dec. 31, 2018	2019	2020	from 2021
Automotive	478	478	-	-
Defence	8,577	2,913	1,800	3,864
	9,055	**3,391**	**1,800**	**3,864**

(25) Changes in inventories and work performed by the enterprise and capitalized

€ million	**2018**	**2017**
Increase/decrease in inventory of finished and unfinished products (2017: and services and WIP)	4	83
Other work performed by the enterprise and capitalized	40	32
	44	**115**

(26) Other operating income

€ million	**2018**	**2017**
Reversal of provisions	53	47
Disposal of assets/divestments	35	12
Sundry rental agreements and leases	11	11
Refunds	8	17
Other secondary income	72	65
	179	**152**

(27) Cost of materials

€ million	**2018**	**2017**
Cost of raw materials, supplies, and merchandise purchased	2,616	2,776
Cost of services purchased	593	486
	3,209	**3,262**

(28) Staff costs

€ million	2018	2017
Wages and salaries	1,285	1,250
Social security and related employee benefits	162	155
Pension expenses	104	99
Expenses for redundancy plans, termination indemnities, partial retirement	23	44
	1,574	**1,548**

Annual average head count (capacity)

	2018	2017
Automotive sector	11,521	11,031
Defence sector	10,661	10,169
Rheinmetall AG/Other	227	174
	22,409	**21,374**

(29) Amortization, depreciation and impairment

€ million	2018	2017
Other intangible assets	85	58
Rights of use	35	-
Property, plant and equipment	196	180
Investment property	2	3
	318	**241**

The impairment losses of €41 million (previous year: €18 million) included in amortization, depreciation and impairment break down as follows:

€ million	Automotive		Defence	
	2018	2017	2018	2017
Other intangible assets				
Development costs capitalized	-	5	32	7
Property, plant and equipment				
Technical and other equipment, furniture and fixtures	3	5	1	1
Assets under construction	-	-	5	-
	3	**10**	**38**	**8**

The impairment loss on capitalized development costs relates in particular to the Vehicle Systems division, which wrote down the carrying amount of a specially equipped command and multipurpose vehicle by the full amount of €24 million, as the marketing opportunities that had previously been anticipated are no longer realistic in the medium term. The further impairment loss on capitalized development costs is attributable to the Electronic Solutions division at €8 million. It was measured at fair value less costs to sell.

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The impairment loss on assets under construction relates to a tracked vehicle prototype. The marketing of this vehicle model, which is not yet fully developed, is no longer being pursued, as Rheinmetall now has two other technically and operationally superior systems with unique selling points in the market segment for medium-size tracked vehicles.

(30) Other operating expenses

€ million	2018	2017
Repairs and maintenance	103	97
Distribution and advertising costs	106	97
IT costs	89	78
Incidental staff costs	62	54
Travel expenses	56	56
Audit, legal and consultancy fees	50	53
Insurances	26	26
Warranty	19	35
Rents, leases and ancillary costs	21	58
Other	244	180
	776	**734**

The “Other” item primarily contains building operating expenses, research and development costs, licensing costs, other taxes and various individual items.

(31) Income taxes

€ million	2018	2017
Current income tax expense	130	99
Earlier-period income taxes	3	(8)
Deferred taxes	(2)	3
	131	**94**

As in the previous year, a tax rate of 30% is used to calculate deferred income taxes for Germany. This includes corporate income tax, the solidarity surcharge and trade tax. The tax rates in other countries range from 16% to 34% (previous year: 16% to 38%).

The table below presents a reconciliation of expected tax expense to reported actual tax expense. A tax rate of 30% is applied to earnings before taxes in order to calculate the expected tax expense. This includes German corporate income tax, the solidarity surcharge and trade tax.

€ million	2018	2017
Extraordinary expenses	485	346
Expected income tax expense (tax rate of 30%; previous year: 30%)	**146**	**104**
Foreign tax rate differentials	(11)	(4)
Effects of loss carryforwards and tax rate changes	10	9
Reduction of tax expense due to previously unrecognized loss carryovers and temporary differences	(13)	(11)
Tax-exempt income	(4)	(5)
Non-deductible expenses	9	12
Earlier-period income taxes	3	(8)
Taxes on entities carried at equity	(11)	(7)
Taxes on dividend and other withholding taxes	1	2
Other	1	2
Actual income tax expense	**131**	**94**

Allocation of deferred taxes to items in the statement of financial position

€ million	Dec. 31, 2018		Dec. 31, 2017	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Loss carryforwards and tax credits	51	-	55	-
Fixed assets	16	120	13	104
Inventories and receivables	19	41	32	47
Pension provisions	150	-	187	-
Other provisions	57	1	35	-
Liabilities	74	2	31	1
Other	2	3	4	2
	369	**167**	**357**	**154**
Set off	(152)	(152)	(140)	(140)
	217	**15**	**217**	**14**
Of which non-current	*217*	*15*	*167*	*13*

In addition to capitalized deferred tax assets from loss carryovers and tax credits, further tax loss carryovers and tax credits exist in Germany and abroad totaling €374 million (previous year: €449 million), which cannot be utilized or whose deferred tax assets were adjusted by value adjustments. €180 million (previous year: €235 million) of this relates to German loss carryovers, €194 million (previous year: €212 million) to foreign loss carryovers and in the previous year €2 million to tax credits. The German loss carryovers, and €133 million of the foreign loss carryovers (previous year: €145 million), are not subject to expiration. Most of the limited foreign loss carryforwards can still be utilized for up to eight years (previous year: up to eight years). Within the Group, €12 million (previous year: €22 million) in deferred tax assets were recognized at companies with ongoing tax losses due to positive corporate planning. No deferred tax liabilities have been recognized for temporary differences in connection with shares in subsidiaries, as the Group is able to manage the progress of reversal over time and the temporary differences will not be reversed in the foreseeable future. Unrecognized deferred tax liabilities of €12 million (previous year:

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€10 million) relate to the main differences. Due to the application of IFRS 16 from fiscal 2018 and the associated recognition of leases in the statement of financial position, deferred tax liabilities relate to non-current assets (rights of use under leases) of €46 million and deferred tax assets relate to liabilities (lease liabilities) of €47 million compared to the previous year.

(32) Earnings per share

Earnings per share are calculated as a ratio of the consolidated result of the shareholders of Rheinmetall AG and the weighted average number of shares in circulation during the fiscal year. As there were no shares, options or similar instruments outstanding that could dilute earnings per share as of December 31, 2018, or December 31, 2017, basic and diluted earnings per share are identical. Treasury shares reduce the weighted number of shares.

	2018	2017
Weighted number of shares in millions	42.95	42.80
Consolidated net profit for the year for shareholders of Rheinmetall AG in € million	305	224
Earnings per share	**€7.10**	**€5.24**

(33) Statement of cash flows

€7 million (previous year: €9 million) of the net interest income included in the cash flow from operating activities related to interest payments received and €27 million (previous year: €35 million) to interest payments made.

The cash outflow for investments in financial assets of €21 million essentially breaks down as follows: €10 million for the capital increase at the joint venture Pierburg Huayu Pump Technology Co. Ltd., Shanghai, China; €3 million for the further acquisition of shares in the associate Riken Automobile Parts (Wuhan) Co., Ltd., Wuhan, China; and €7 million for the establishment of and capital increase at the joint venture Kolbenhöfe GmbH & Co. KG, Hamburg. In the previous year, €9 million was shown here for the capital increase at the joint venture Rheinmetall International Engineering GmbH, Geisenheim; €2 million for the capital increase at the associate Rheinmetall Barzan Advanced Technologies QSTP-LLC, Doha, Qatar; and €2 million for the acquisition of and a capital increase at the associate Dynamic Engineering Solution Pty Ltd, Magill, Australia.

The cash flow from the disposal of property, plant and equipment, intangible assets and investment property of €73 million (previous year: €3 million) primarily included €68 million from the sale of an investment property in Hamburg.

In the previous year, “Proceeds from divestments of financial assets” included the payment of the sale price of €23 million for the associate Cassidian Airborne Solutions GmbH, Bremen.

(34) Segment reporting

The Group bundles its operations in two sectors, Defence and Automotive, which are organized and run as independent segments where the respective products, services and customer profiles are grouped accordingly. Reporting on these reportable segments is in accordance with the Rheinmetall Group's internal organizational and reporting structures.

The Automotive sector is the mobility segment of the Rheinmetall Group. As a global automotive supplier, Rheinmetall Automotive operates in the areas of air management, emissions reduction and pumps and in the development, production and supply of replacement parts for pistons, engine blocks and plain bearings. As well as supplying automotive manufacturers, the Automotive sector operates in the aftermarket business, supplying wholesalers, engine repair shops and independent garages with replacement parts through a global distribution network.

The Defence sector brings together all activities for the defence and security industry. The service range covers development, manufacturing and service provision and is aimed at German and international armed forces. The product portfolio comprises system and partial system solutions and covers capability in the areas of mobility, reconnaissance, management, effectiveness and protection. Specifically, the product range includes vehicle, protection and weapon systems, air defence systems, function sequence networking, simulation hardware and software, and infantry equipment.

In addition to the Group holding company (Rheinmetall AG), "Other/Consolidation" includes Group service companies and other non-operating companies, plus consolidation transactions. Transactions between the Defence and Automotive sectors are of minor significance and are made at arm's length.

The sectors of the Rheinmetall Group are controlled by means of sales, operating result (EBIT before special items), EBIT, EBT and operating free cash flow performance indicators. Operating free cash flow comprises the cash flow from operating activities and capital expenditure on rights of use, property, plant and equipment, intangible assets, and investment property.

Profitability is also assessed for management purposes on the basis of ROCE calculated on an annual basis, which represents the ratio of EBIT to average capital employed (average of values as of January 1 and December 31 of the year under review). Capital employed is calculated as the total of equity, pension provisions and net financial liabilities. Net financial liabilities are calculated as financial liabilities less cash and cash equivalents and liquid financial assets. Inter-segment loans within the Group are assigned to cash and cash equivalents.

The indicators for internal controlling and reporting purposes are based on the accounting principles described under note (4).

The reconciliation of segment net financial liabilities to Group financial liabilities and of segment EBIT to consolidated EBT is shown below:

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€ million	Dec. 31, 2018	Dec. 31, 2017
Net financial debts		
Net financial debts of sectors	(223)	(522)
Others	254	296
Consolidation	-	(4)
Net financial debts of Group	**31**	**(230)**

	2018	2017
EBIT		
EBIT of sectors	513	399
Others	105	75
Consolidation	(100)	(89)
Group EBIT	**518**	**385**
Group net interest	(33)	(39)
Group EBT	**485**	**346**

When presenting segment information by geographical region, foreign sales in the Defence sector are reported based on the country of destination, while those of the Automotive sector are reported according to where the customer is based. Segment assets include intangible assets, rights of use, property, plant and equipment and investment property according to the respective location of the company.

(35) Contingent liabilities

Furthermore, several guarantees have been issued in favor of non-consolidated interests as part of joint projects, which are primarily carried out in the form of joint ventures. There are letters of comfort for the purposes of contract performance, whereby Rheinmetall may also be held liable for the performance of the other joint venture partners in its relations with third parties. However, in internal relations, it is only liable for its own share of products and services by virtue of corresponding rights of recourse. Moreover, a letter of comfort involving a joint and several liability has been issued to secure the financing of the capex costs for a joint venture. No cash outflows are expected. In addition, commitments exist in favor of joint ventures and associated affiliates for credit and guarantee facilities granted to the affiliated companies. Rheinmetall's liability is equal to the equity interest held. No cash outflows are expected here.

Contingent liabilities

€ million	Dec. 31, 2018	Dec. 31, 2017
Letters of comfort	927	1,387
Credit enhancement	42	24
Contract performance	1	9
Other	10	8
	980	**1,428**

The purchase commitment from firm capital expenditure contracts totals €45 million (previous year: €51 million).

(36) Additional information on financial instruments

Financial instruments according to the measurement categories of IAS 39

€ million	Dec. 31, 2017				
	Measurement at amortized cost	Measurement at fair value	Total	IFRS adjustment	Total
Loans and receivables					
Trade receivables	1,217	-	1,217	(327)	890
Other financial assets without derivatives	39	-	39	-	39
Cash and cash equivalents	757	-	757	-	757
Assets held to maturity					
Liquid financial assets	119	-	119	-	119
Held for trading purposes					
Derivatives without hedge accounting	-	18	18	-	18
Derivatives with cash flow hedge [1)]	-	38	38	-	38
Financial assets	**2,132**	**56**	**2,188**	**(327)**	**1,861**
Liabilities					
Bond, promissory notes	243	-	243	-	243
Financial debts	403	-	403	-	403
Trade liabilities	760	-	760	-	760
Other liabilities without Derivatives	100	-	100	-	100
Held for trading purposes					
Derivatives without hedge accounting	-	11	11	-	11
Derivatives with cash flow hedge [1)]	-	7	7	-	7
Financial liabilities	**1,506**	**18**	**1,524**	**-**	**1,524**

1)Not a measurement category as defined by IAS 39.

The receivables from construction contracts of €327 million included in trade receivables in the previous year and the contract assets from contracts with customers are no longer deemed financial instruments in accordance with IFRS 9.

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The financial instruments according to the measurement categories of IFRS 9 when the new standard was applied for the first time as of January 1, 2018, and as of December 31, 2018, break down as follows:

€ million	Jan. 1, 2018				
	Measurement category in accordance with IFRS 9				
	Amortized cost	Fair value/OCI	Fair value/PL	No category	Total
Trade receivables	378	512	-	-	890
Cash and cash equivalents	757	-	-	-	757
Liquid financial assets	119	-	-	-	119
Derivatives without hedge accounting	-	-	18	-	18
Derivatives with cash flow hedge	-	-	-	38	38
Other financial assets	24	2	2	3	31
Financial assets	**1,278**	**514**	**20**	**41**	**1,853**
Promissory notes	243	-	-	-	243
Financial debts	393	-	-	-	393
Trade liabilities	760	-	-	-	760
Derivatives without hedge accounting	-	-	11	-	11
Derivatives with cash flow hedge	-	-	-	7	7
Other financial liabilities	100	-	-	-	100
Financial liabilities	**1,496**	**-**	**11**	**7**	**1,514**

€ million	Dec. 31, 2018				
	Measurement category in accordance with IFRS 9				
	Amortized cost	Fair value/OCI	Fair value/PL	No category	Total
Trade receivables	563	622	-	-	1,185
Cash and cash equivalents	724	-	-	-	724
Liquid financial assets	100	-	-	-	100
Derivatives without hedge accounting	-	-	10	-	10
Derivatives with cash flow hedge	-	-	-	18	18
Other financial assets	69	4	2	3	78
Financial assets	**1,456**	**626**	**12**	**21**	**2,115**
Promissory notes	300	-	-	-	300
Financial debts	384	-	-	-	384
Trade liabilities	797	-	-	-	797
Derivatives without hedge accounting	-	-	11	-	11
Derivatives with cash flow hedge	-	-	-	13	13
Other financial liabilities	101	-	-	-	101
Financial liabilities	**1,582**	**-**	**11**	**13**	**1,606**

The trade receivables, which would in principle be available for sale before their due date, are measured at fair value, which any changes in value being recognized in other comprehensive income. The carrying amount is approximately equal to the fair value (level 2).

The market value of other financial assets and financial liabilities measured at fair value is determined on the basis of input factors observed directly or indirectly on the market (level 2). The foreign exchange rates applicable at the end of the reporting period and the yield curves are key inputs in calculating the fair value of derivatives for currency and interest rate hedges. The discounted cash flow method is used for interest rate swaps, currency swaps and currency forwards. The euro yield curve used to measure the interest rate derivatives takes into account basis spreads. The fair value of the commodity futures is derived from the market price as of the measurement date. The forward rates applicable at the end of the reporting period are used to calculate the market value of energy derivatives (electricity and gas derivatives).

The carrying amounts and fair values of financial instruments that are measured at amortized cost and whose carrying amounts do not approximate fair value are shown below.

€ million		Dec. 31, 2018		Dec. 31, 2017	
		Carrying amount	Fair value	Carrying amount	Fair value
Promissory notes	Level 2	300	315	243	243
Other financial debts excl. leases	Level 2	384	400	403	393

The fair value of the promissory note loans and the other financial liabilities was determined by discounting the associated future cash flows at rates that match the time to maturity of similar debts.

Sale of customer receivables – Under an asset-backed securities program, the Rheinmetall Group sells customer receivables to a financial service provider each month on a revolving basis. The customer receivables sold are recognized as disposals. In 2018, the maximum volume of the program was €169 million (previous year: €164 million). The nominal value of receivables was €169 million as of December 31, 2018 (previous year: €164 million).

The retained risks are insignificant for the Group. An asset item of €3 million has been reported for the maximum continuing involvement (previous year: €3 million), together with a liability item of the same amount for the associated liabilities.

Collateral provided – Financial assets of €2 million (previous year: €2 million) were issued in the form of liens on securities to protect employees from insolvency risks in connection with pension systems.

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Net result from financial instruments

€ million	2018	2017
Interest income	6	9
Interest expenses	(15)	(32)
Guarantee commission	(9)	(11)
Currency result	5	(7)
Loss allowances on trade receivables	(9)	(3)
Amortization of non-current financial assets	(10)	-
Other	-	(1)
	(32)	**(45)**

€4 million of the loss allowances on trade receivables (January 1, 2018: €2 million) is attributable to financial instruments of the measurement at fair value through other comprehensive income category. Interest expenses of €2 million (January 1, 2018: €1 million) are attributable to the same category. All other items relate to financial instruments measured at amortized cost.

Finance market risks – The operations and financing transactions of the Rheinmetall Group as an international group are exposed to financial market risks, mainly from liquidity, counterparty default, electricity, gas and commodity prices, exchange rate volatility and interest rate changes. In accordance with the Group-wide risk management system of Rheinmetall AG, such risks are not only identified, analyzed and measured, but also managed by taking actions to avoid, contain or limit such risks. Inherent financial risks are actively managed to ensure that no significant risks arise from financial instruments as of the end of the reporting period.

Derivative financial instruments – Derivative financial instruments are used to reduce currency, interest rate and commodity price risks. Provided that the necessary criteria are met and automatic offsetting of the hedged item and the hedging instrument is not possible, changes in the fair value of hedging transactions are recognized in the hedge reserve in the context of cash flow hedge accounting. The effectiveness of these transactions is subject to ongoing monitoring, using the critical terms match method prospectively. Ineffective portions to be recognized are determined using the dollar offset testing method.

The table below shows the fair value of all hedges accounted for as financial assets or financial liabilities as of the end of the reporting period.

€ million	Dec. 31, 2018		Dec. 31, 2017	
	Assets	Equity and liabilities	Assets	Equity and liabilities
Currency hedges	9	(10)	17	(8)
Interest rate hedges	-	-	-	(1)
Commodity hedges	-	-	-	(1)
Electricity price hedges	1	(1)	1	(1)
Without hedge accounting	**10**	**(11)**	**18**	**(11)**
Currency hedges	16	(10)	28	(7)
Commodity hedges	-	(3)	8	-
Electricity price hedges	2	-	2	-
With hedge accounting	**18**	**(13)**	**38**	**(7)**

In the year under review, total negative changes in the fair value of derivatives of €11 million before the deduction of deferred taxes (previous year: total positive changes in fair value of €31 million) were recognized in the hedge reserve. €10 million (previous year: €11 million) of the reserve was reclassified to revenue and €3 million (previous year: €4 million) was reclassified to the cost of materials.

For derivatives in hedge accounting, the nominal volumes for currency and commodity hedges are shown below. For significant currency pairs and commodity hedges, the average hedging rates are also shown.

	Dec. 31, 2018			Dec. 31, 2017		
	2019	2020	from 2021	2018	2019	from 2020
Currency hedges						
Nominal volumes (gross, in € million)	559	184	30	573	138	49
Average hedging rate						
Average rate USD/ZAR	0.07	0.07	0.06	0.07	0.07	0.07
Average rate CHF/EUR	1.14	1.13	1.13	1.11	1.12	1.07
Average rate EUR/ZAR	0.06	0.05	-	0.06	-	-
Average rate EUR/CZK	0.04	0.04	-	0.04	0.04	-
Average rate USD/EUR	1.18	1.24	1.26	1.16	1.24	1.27
Commodity hedges						
Nominal volumes (gross, in € million)	28	16	5	27	10	5
Average hedging rate						
Average rate aluminum (EUR/ton)	1,731	1,697	1,715	1,502	1,726	1,770
Average rate copper (EUR/ton)	5,330	5,227	5,065	4,621	5,153	5,235

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There were only immaterial ineffective portions, so the fair value changes of the hedged item and the hedging instrument largely canceled each other out.

Currency risk – Owing to the international nature of the Rheinmetall Group's business, certain operational currency risks arise from the fluctuating exchange rates between the functional currencies of Group companies and other currencies. Open positions exposed to a currency risk are hedged through derivatives, generally currency forwards, as well as currency swaps. Foreign exchange trading in the Defence sector is contracted almost exclusively with Rheinmetall AG. Here, currency hedge transactions are concluded with subsidiaries and squared either directly or in a portfolio approach via banks. In the Automotive sector, these transactions are predominantly concluded on a central basis via Rheinmetall Automotive AG. The most important currency hedges contracted by German companies refer to US dollar, Swiss franc, Australian dollar and Norwegian krone transactions, while the foreign companies mostly hedge euro-based and US dollar-based purchasing and sales transactions. These hedges are measured as of the end of the reporting period and recognized at their fair value calculated according to the DCF method.

Interest rate risk – Rheinmetall AG uses interest rate hedging instruments (interest rate swaps) as part of its Group-wide management of interest rate risks. The interest rate swaps essentially serve to hedge variable interest on promissory note loans and future variable interest payments.

Commodity price risks – The Rheinmetall Group is exposed to price volatility risks from commodity buying, such as metals. By means of materials cost escalator agreements with customers, the major part of these risks from volatile metal prices is shifted to customers, albeit with a time lag. Moreover, the Automotive sector (where most of these risks exist) has also used derivative financial instruments for risk management, mainly commodity futures maturing by 2021 at the latest contracted on the basis of a financial settlement.

Energy price risk (electricity and gas price) – Owing to volatile prices on the energy market, derivative financial instruments have been concluded to secure the price of electricity for the consumption volumes planned up to 2019. There are no outstanding price hedges via derivative financial instruments for gas.

Sensitivity analysis – As part of sensitivity analyses for the risk variables concerned, the effects that a change in the relevant underlying instruments as of the end of the reporting period would have on other net financial income and the hedge reserve, before taking deferred taxes into account, are examined.

€ million		Other net financial income		Cash flow hedge reserve	
		Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Currency	Exchange rates (total) -10%/+10%	+3/-3	+4/-4	-31/+31	-18/+18
Interest rate	Yield curve -100 BP/+100 BP	- / -	-1/+1	- / -	- / -
Commodity	Price curve for material prices -10%/+10%	- / -	- / -	-5/+5	-5/+5
Electricity price	Forward curve for electricity prices -10%/+10%	- / -	- / -	- / -	-1/+1

Default risk (expected credit risk) – The default risk from financial assets is that the other contractual party does not fulfill his obligations. The maximum risk for loans granted and customer receivables is the carrying amount recognized. In order to minimize the default risk with derivative financial instrument contracts, the Rheinmetall Group sets high requirements in respect of its counterparties, restricting itself exclusively to German and foreign banks with impeccable ratings.

The Rheinmetall Group monitors and tracks the default risk on customer receivables at the level of its operating units in line with the corporate policies for proper debtor management. Individual assessments (where appropriate, based on current trends and qualitative information) can be used in addition to database-supported rating and default data of an external data supplier. Current del credere risks are covered by valuation allowances.

There are no significant valuation allowances for customer receivables at the Rheinmetall Group. Given the type of business and the customer structure, default rarely occurs and instead there are only delays in payment. In addition, potential default risks are assessed on an individual basis in connection with long-term orders and reduced or hedged by means of prepayments, credit insurance, guarantees or letters of credit. In 2018, the risk provision for general default risk calculated according to the simplified approach for the measurement of trade receivables amounted to €8 million (previous year: €8 million). As of the end of the reporting period, there were no indications that the debtors of any receivables past due will fail to make payment. Because of the customer structure, the risk does not significantly increase even when the receivables are a long time past due.

Default risk of trade and other receivables, amount before loss allowance

€ million	Dec. 31, 2018	Dec. 31, 2017
Not past due and less than 30 days past due	1,048	727
Up to 180 days past due	71	58
More than 180 days past due	73	127
	1,192	**912**

No important credit concentrations exist in the Rheinmetall Group.

Liquidity risk – In particular, the Rheinmetall Group ensures sufficient liquidity at all times by a cash budget and forecast over a specified time horizon, and through existing, partly unutilized finance facilities, including credit lines granted by banks on a syndicated basis, a commercial paper (CP) program and an asset-backed securities program. For further details of such credit facilities, see the “Financing” section of the management report.

The undiscounted contractually agreed payments from repayment and interest components in connection with financial liabilities and derivative financial instruments as of the end of the reporting period are listed below.

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Cash outflows

€ million	Dec. 31, 2018			Dec. 31, 2017		
	2019	2020-2023	from 2024	2018	2019-2022	from 2023
Promissory notes	58	162	100	4	226	30
Other bank liabilities	65	63	265	62	66	276
Other financial debts	8	1	-	10	1	-
	131	**226**	**365**	**76**	**293**	**306**
Derivatives with negative fair value	19	5	-	14	4	-
Derivatives with positive fair value	20	8	-	46	10	-

The fair values of derivatives as of the end of the reporting period should be seen in the context of the associated underlyings, whose values develops in the opposite direction to that of derivatives, regardless of whether these have already been recognized or are pending. The derivatives would only produce a cash outflow at the amount shown above if they were terminated early.

The Rheinmetall Group's financial resources comprise cash and cash equivalents, financial current assets available for sale, and the cash provided by operating activities. By contrast, the capital requirements cover the redemption of financial liabilities (principal and interest), capital expenditure and the funds for the ongoing financing of operating activities.

(37) Share programs

Long-term-incentive program – There is a long-term incentive remuneration program (LTI) for the Executive Board and the managers of the Rheinmetall Group in order to involve management in the company's long-term development. Under this program, the beneficiaries are paid performance-related remuneration for the past fiscal year in the subsequent year. The calculation of the amount of remuneration is based on the average adjusted EBT of the Rheinmetall Group for the past three fiscal years, capped at a maximum of €300 million. Average adjusted EBT for fiscals 2016 to 2018 is over €300 million, so the remuneration for fiscal 2018 is based on the maximum amount, multiplied by a personal factor according to individual arrangement.

The remuneration for members of the Executive Board comprises a component settled in shares of 50% of the assessment basis and a cash component of 60% of the assessment basis. The remuneration for German managers is measured according to the respective assessment basis, with 40% and 60% being settled in shares and cash respectively. Managers working outside Germany receive remuneration of 50% of the determined assessment basis in shares.

The number of shares granted is determined in the subsequent year on the basis of the average price on the last five trading days in February of a year (reference price), with a deduction of 20% in the case of managers (relevant share value). The portion of the assessment basis to be granted in shares is divided by the relevant share value to determine the number of shares to be granted. The shares granted are subject to a lock-up period of four years. If employment is terminated by the employer, the Executive Board member or manager receives remuneration pro rata for each completed calendar month of employment.

An expense totaling €17 million (previous year: €19 million) was recognized for the LTI program in fiscal 2018.

The reference price in February 2018 was €109.07. For fiscal 2017, a total of 89,724 shares were transferred to the entitled participants of the LTI program on April 3, 2018 (previous year: a total of 98,101 shares were transferred for fiscal 2016 on April 4, 2017).

The shares attributable to the Executive Board members are presented in the remuneration report included in the management report.

Share purchase program – Since 2018, there has been a new share purchase program for Rheinmetall employees in Germany, in which employees of participating Group companies can purchase Rheinmetall shares at reduced prices on the basis of monthly savings plans. The program comprises two elements: a monthly basic savings plan and a monthly extra savings plan. Under the basic savings plan, employees can acquire Rheinmetall shares for a monthly sum of at least €30 up to a maximum of €100. Rheinmetall contributes 30% of the defined savings amount. For example, a monthly savings amount of €100 comprises €70 from the employee and the employer's contribution of €30.

In addition, employees can acquire additional Rheinmetall shares as part of the extra savings plan. Here, the monthly savings contribution can amount to up to 10% of the annual gross salary divided by 12. There is a cap of €900 per month. Here, too, Rheinmetall contributes 30% of the defined savings amount.

In 2018, employees acquired a total of 38,319 shares under this share purchase program. The employer contribution amounted to €1 million. The shares acquired under the share purchase program within a year are subject to a lock-up period of two years starting on January 1 of the following year.

Employees in the rest of Europe can participate in the European share purchase program (ESPP), which was also available to the German Rheinmetall companies until 2017. Entitled employees can acquire a limited number of Rheinmetall shares at a discount of 30% within a defined subscription period. In fiscal 2018, Rheinmetall Group employees purchased 12,929 shares (previous year: 15,755) for €1 million (previous year: €1 million). Expenses of less than €1 million, recognized as personnel expenses, were incurred for this program in fiscal 2018 and the previous year. The gain on disposal from the sale of treasury shares to employees totaled €1 million (previous year: gain on disposal of €1 million). The previous year's disclosures were adjusted and relate to the ESPP.

Subscription period	Share price in €	Discount per share in €	No. of shares purchased by staff
Jun. 8 - 29, 2018	108.25	32.47	12,929

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(38) Other information on related parties

The Rheinmetall Group’s corporate related parties are the joint ventures and associated companies accounted for using the equity method. The products/services provided primarily relate to sales proceeds recognized in respect of project companies of the Defence sector from the sale of finished and unfinished goods and from construction contracts. The receivables and liabilities are chiefly attributable to customer receivables, trade payables and prepayments received and made. The scope of related-party transactions is shown in the table below.

€ million	Joint Ventures		Associated Companies	
	2018	2017	2018	2017
Products/services provided	393	405	24	3
Products/services received	6	15	16	10
Receivables Dec. 31	143	107	43	2
Liabilities Dec. 31	9	23	3	2
Receivables from finance leases Dec. 31	8	8	-	-

Please see note (17) for information on the finance lease receivable.

Please see the comments under note (35) “Contingent liabilities” for details of the Rheinmetall Group’s contingent liabilities in connection with joint ventures.

There are business relationships between a subsidiary of Rheinmetall AG and PL Elektronik GmbH, Lilienthal, whose sole shareholder is Mr. Armin Papperger, a member of the Rheinmetall AG Executive Board, and which is managed by a related party of Mr. Papperger. PL Elektronik GmbH provides development services and produces and supplies electric igniters to order. The transactions are carried out on an arm’s-length basis. In fiscal 2018, the volume of products/services received amounted to €2 million (previous year: €1 million).

Remuneration of the Executive Board and the Supervisory Board – The reportable remuneration of senior management within the Group comprises that paid to active Executive Board and Supervisory Board members.

The expenses for compensation paid or payable to active members of the Executive Board break down as follows:

€ ’000	2018	2017
Fixed remuneration incl. fringe benefits	3,015	3,010
Performance based remuneration	3,802	3,896
LTI	3,878	3,878
	10,695	**10,784**
Pensions expenses	3,250	3,168
Total	**13,945**	**13,952**

The net present value of pension commitments, which corresponds to the amount of provisions, totals €21,716 thousand for members of the Executive Board active at year-end (previous year: €17,760 thousand). There are provisions of €7,679 thousand (previous year: €7,792 thousand) for variable remuneration of the Executive Board.

Supervisory Board remuneration including attendance fees amounted to €1,611 thousand (previous year: €1,542 thousand). In addition to Supervisory Board remuneration, those employee representatives who are employees of the Rheinmetall Group also receive compensation unrelated to their service on the Supervisory Board. The employee representatives received €785 thousand in total from such activities (previous year: €706 thousand).

For further details and itemization of each member's remuneration, see the Board remuneration report within the combined management report of the Rheinmetall Group and Rheinmetall AG.

€2,200 thousand (previous year: €2,236 thousand) was paid to former members of the Executive Board or their surviving dependents. Pension provisions for these persons totaled €31,895 thousand (previous year: €31,087 thousand). €536 thousand (previous year: €561 thousand) was paid to former Executive Board members of Rheinmetall DeTec AG (merged with Rheinmetall AG in 2005) or their surviving dependents. Pension provisions for these persons totaled €8,374 thousand (previous year: €8,655 thousand).

(39) Auditor's fees

The following fees for the auditor PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC) were recognized:

€ '000	Fees Germany	
	2018	2017
End-of-year auditing services	2,235	2,305
Other verification services	102	40
Tax consultancy services	14	16
Other services	309	227
	2,660	**2,588**

The fees for audits of financial statements cover Rheinmetall AG's single-entity and consolidated financial statements and the accounts of all subsidiaries audited by PwC in Germany. Fees for other services essentially relate to activities in the context of project audits. All services not related to the audit of the financial statements were approved by the Audit Committee.

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(40) Exercise of exemption provisions under HGB

Based on the provisions of section 264(3) HGB governing corporations and section 264b HGB governing partnerships, the following German enterprises have elected not to prepare notes or management reports or to disclose their 2018 financial statements:

Amprio GmbH
BF Germany GmbH
EMG EuroMarine Electronics GmbH
GVG Grundstücksverwaltung Gleitlager GmbH & Co. KG
GVMS Grundstücksverwaltung Service GmbH & Co. KG
GVN Grundstücksverwaltung Neckarsulm GmbH & Co. KG
Kolbenschmidt Liegenschaftsverwaltung GmbH Berlin
Kolbenschmidt Pierburg Innovations GmbH
KS ATAG Beteiligungsgesellschaft m.b.H
KS Gleitlager GmbH
KS Grundstücksverwaltung Beteiligungs GmbH
KS Grundstücksverwaltung GmbH & Co. KG
KS Kolbenschmidt GmbH
LDT Laser Display Technology GmbH
MEG Marine Electronics Holding GmbH
MS Motorservice Deutschland GmbH
MS Motorservice International GmbH
Pierburg GmbH
Pierburg Grundstücksverwaltung GmbH & Co. KG
Pierburg Pump Technology GmbH
Rheinmetall Automotive AG
Rheinmetall Ballistic Protection GmbH
Rheinmetall Berlin Verwaltungsgesellschaft mbH
Rheinmetall Dienstleistungszentrum Altmark GmbH
Rheinmetall Electronics GmbH
Rheinmetall Eastern Markets GmbH
Rheinmetall Financial Services GmbH
Rheinmetall Immobilien GmbH
Rheinmetall Immobilien Hamburg GmbH
Rheinmetall Immobilien Hamburg Friedensallee GmbH
Rheinmetall Industrietechnik GmbH
Rheinmetall Insurance Services GmbH
Rheinmetall Landsysteme GmbH
Rheinmetall Maschinenbau GmbH
Rheinmetall Projekt Solutions GmbH
Rheinmetall Soldier Electronics GmbH
Rheinmetall Technical Assistance GmbH
Rheinmetall Technical Publications GmbH
Rheinmetall Verwaltungsgesellschaft mbH
Rheinmetall Waffe Munition GmbH
Solidteq GmbH
SUPRENUM Gesellschaft für numerische Superrechner mbH

(41) Corporate governance

In August 2018, Rheinmetall AG published its declaration of conformity in accordance with the German Corporate Governance Code pursuant to section 161 of the Aktiengesetz (AktG – German Stock Corporation Act) on the Internet at www.rheinmetall.com in the section “Group – Corporate Governance”, thus making it available to shareholders.

(42) Events after the end of the reporting period

At an extraordinary Supervisory Board meeting on January 18, 2019, the Supervisory Board approved the Executive Board’s request to establish a joint venture with BAE Systems in Great Britain that will engage in development, production and associated support services in the military land systems area. The joint venture is to trade under the name Rheinmetall BAE Systems Land and be based at the current BAE Systems production site in Telford, England. It is subject to approval by the authorities, which is targeted for the first half of 2019. Rheinmetall will hold 55% of the shares in the new company, BAE Systems 45%. This will create a new European market leader that wants to secure a top position among the international competition in the military vehicles sector.

No other events of special significance that could have affected the company’s net assets, financial position and results of operations occurred at Rheinmetall AG between the end of the reporting period on December 31, 2018, and the date on which the consolidated financial statements 2018 were prepared.

Düsseldorf, February 26, 2019

Rheinmetall Aktiengesellschaft
The Executive Board

Armin Papperger   Helmut P. Merch   Horst Binnig   Peter Sebastian Krause

Company		Direct share of capital in %	Indirect share of capital in %	Equity in € ’ooo	Net income for the year after PLTA in € ’ooo
Fully consolidated subsidiaries					
Holding companies/service companies/other					
Amprio GmbH, Neuss/Germany	(1)		100	229	26
EMG EuroMarine Electronics GmbH, Neckarsulm/Germany			100	60,397	1,164
MEG Marine Electronics Holding GmbH, Düsseldorf/Germany			100	220,110	3,110
Rheinmetall Berlin Verwaltungsgesellschaft mbH, Berlin/Germany	(1)	100		213,750	-
Rheinmetall Financial Services GmbH, Düsseldorf/Germany	(1)	100		336,975	(20)
Rheinmetall Immobilien GmbH, Düsseldorf/Germany		100		171,986	55,206
Rheinmetall Immobilien Hamburg Friedensallee GmbH, Düsseldorf/Germany	(1)		100	24,139	2,284
Rheinmetall Immobilien Hamburg GmbH, Düsseldorf/Germany		100		1,687	-
Rheinmetall Industrietechnik GmbH, Düsseldorf/Germany	(1)	100		26	-
Rheinmetall Insurance Services GmbH, Düsseldorf/Germany	(1)	100		296	47
Rheinmetall Maschinenbau GmbH, Düsseldorf/Germany			100	61,248	574
Rheinmetall Verwaltungsgesellschaft mbH, Düsseldorf/Germany	(1)		100	733,843	-
SUPRENUM Gesellschaft für numerische Superrechner mbH, Bremen/Germany			100	(1,397)	-
Defence sector					
Alpha Air GmbH, Bremen/Germany			100	23	(1)
American Rheinmetall Defense, Inc., Biddeford, Maine/USA		100		19,175	(1,954)
American Rheinmetall Munition Inc., Stafford, Virginia/USA			100	(11,883)	(2,447)
American Rheinmetall Systems, LLC, Biddeford, Maine/USA			100	32,362	411
Benntec Systemtechnik GmbH, Bremen/Germany	(2)		49	3,844	330
BIL Industriemetalle GmbH & Co. 886 KG, Grünwald/Germany	(3)	94		(1,622)	258
cyel ag, Könitz, BE/Switzerland			60	(3,530)	(1,695)
Eurometaal N.V., Hengelo/Netherlands			100	87	(29)
LDT Laser Display Technology GmbH, Jena/Germany	(1)		100	1,624	156
Logistic Solutions Australasia Pty. Ltd., Melbourne/Australia			100	1,556	102
Nitrochemie AG, Wimmis/Switzerland			51	907	2
Nitrochemie Aschau GmbH, Aschau/Germany			55	27,852	5,007
Nitrochemie South Africa (Pty) Ltd., Somerset West/South Africa			55	57	(225)
Nitrochemie Wimmis AG, Wimmis/Switzerland			55	51,113	288
Oerlikon Contraves GmbH, Zürich/Switzerland		100		20	0
RD Investment AG, Zürich/Switzerland			69	136	(14)
RFEL LTD, Newport, Isle of Wight/Great Britain			100	2,140	363
RH Mexico Simulation and Training S.A. de C.V., Mexico City/Mexico			100	5,187	401
Rheinmetall Active Protection GmbH, Lohmar/Germany			74	13,309	(4,786)
Rheinmetall Air Defence AG, Zürich/Switzerland		100		83,976	14,146

Company		Direct share of capital in %	Indirect share of capital in %	Equity in € '000	Net income for the year after PLTA in € '000
Rheinmetall Ballistic Protection GmbH, Krefeld/Germany	(1)		100	3,617	(86)
Rheinmetall Canada Inc., St.-Jean-sur-Richelieu/Canada		100		68,338	5,741
Rheinmetall Ceska republika s.r.o., Usti/Czech Republic			100	(4)	(6)
Rheinmetall Chempro GmbH, Bonn/Germany			51	27,633	6,389
Rheinmetall Combat Platforms North America Inc, Wilmington, Delaware/USA			100	(134)	(45)
Rheinmetall Communication and Simulation Technology Pte. Ltd., Singapore/Singapore			100	2,752	1,214
Rheinmetall Defence Australia Pty. Ltd., Deakin West/Australia		100		(2,167)	(4,176)
Rheinmetall Defence Lietuva, UAB, Vilnius/Lithuania			100	17	(6)
Rheinmetall Defence Polska sp. z.o.o., Warsaw/Poland			100	(149)	113
Rheinmetall Defence UK Limited, London/Great Britain		100		(3,067)	(571)
Rheinmetall Denel Munition Pty. Ltd., Somerset West/South Africa			51	102,558	14,073
Rheinmetall Dienstleistungszentrum Altmark GmbH, Letzlingen/Germany	(1)	100		31	1
Rheinmetall Eastern Markets GmbH, Düsseldorf/Germany	(1)	100		1,341	1
Rheinmetall Electronic Solutions AG, Urdorf/Switzerland			80	-	-
Rheinmetall Electronics GmbH, Bremen/Germany	(1)	100		52,891	12,910
Rheinmetall Electronics Pty. Ltd., Adelaide/Australia			100	720	(811)
Rheinmetall International Defence and Security Ltd., Riyadh/Saudi Arabia			100	2,626	833
Rheinmetall International Holding AG, Zürich/Switzerland		100		2,713	(4,777)
Rheinmetall International Services Limited, Masdar City/UAE			100	(2,146)	(773)
Rheinmetall Italia S.p.A., Rome/Italy			100	103,836	10,720
Rheinmetall Laingsdale (Pty) Ltd., Cape Town/South Africa			76	5,918	4,300
Rheinmetall Landsysteme GmbH, Südheide/Germany	(1)	100		29,691	6,936
Rheinmetall Ltd., Moscow/Russian Federation			100	495	34
Rheinmetall MAN Military Vehicles Australia Pty Ltd., Melbourne/Australia			51	22,420	10,516
Rheinmetall MAN Military Vehicles Canada Ltd., Ottawa/Canada			51	524	204
Rheinmetall MAN Military Vehicles GmbH, Munich/Germany		51		133,755	39,345
Rheinmetall MAN Military Vehicles Nederland B.V., Ede/Netherlands			51	(27,552)	(381)
Rheinmetall MAN Military Vehicles Österreich GesmbH, Vienna/Austria			51	48,919	29,853
Rheinmetall MAN Military Vehicles Österreich Holding GesmbH, Vienna/Austria			51	100,073	(11)
Rheinmetall MAN Military Vehicles RSA (Pty) Ltd., Pretoria/South Africa	(2)		36	18	0
Rheinmetall MAN Military Vehicles UK Ltd., Swindon/Great Britain			51	(1,909)	(586)
Rheinmetall Netherlands B.V., Hengelo/Netherlands			100	920	861
Rheinmetall Norway AS, Nøtterøy/Norway		100		22,496	(23,479)
Rheinmetall Project Solutions GmbH, Düsseldorf/Germany	(1)		100	25	0
Rheinmetall Projects Development Consultancy LLC, Abu Dhabi/UAE	(2)	49		261	334
Rheinmetall Protection Systems Gulf (FZE), SAIF-Zone, Sharjah/UAE			100	(810)	(645)
Rheinmetall Protection Systems Nederland B.V., Ede/Netherlands			100	1,220	(27)
Rheinmetall Savunma Sanayi Anonim Sirketi, Ankara/Turkey			90	132	(133)
Rheinmetall Singapore Pte. Ltd., Singapore/Singapore			100	3,686	455
Rheinmetall Soldier Electronics GmbH, Stockach/Germany	(1)	100		3,953	806
Rheinmetall Swiss SIMTEC AG, Thun/Switzerland			100	-	42
Rheinmetall Technical Assistance GmbH, Kassel/Germany	(1)		51	25	-

Notes to the consolidated financial statements
Shareholdings

Company		Direct share of capital in %	Indirect share of capital in %	Equity in € 'ooo	Net income for the year after PLTA in € 'ooo
Rheinmetall Technical Publications GmbH, Bremen/Germany	(1)	100		4,422	994
Rheinmetall Technical Publications Schweiz AG, Zürich/Switzerland			100	267	(108)
Rheinmetall Waffe Munition ARGES GmbH, Schwanenstadt/Austria			100	1,780	96
Rheinmetall Waffe Munition GmbH, Südheide/Germany	(1)	100		105,362	3,870
Rheinmetall Waffe Munition South Africa (Pty) Ltd., Somerset West/South Africa			100	14	(5)
RM Euro B.V., Hengelo/Netherlands		100		55,547	1,401
RRS - MITCOS Rheinmetall Rohde&Schwarz Military IT and Communications Solutions GmbH, Berlin/Germany			75	71	(29)
RTP-UK Ltd., Bristol/Great Britain			100	8,538	205
RWM Beteiligungsverwaltung Austria GmbH, Schwanenstadt/Austria			100	16,011	2,043
RWM Italia S.p.A., Ghedi/Italy			100	69,998	17,347
RWM Schweiz AG, Zürich/Switzerland			100	53,312	8,432
RWM Zaugg AG, Lohn-Ammannsegg/Switzerland			100	9,157	2,366
Automotive sector					
BF Engine Parts LLC, Istanbul/Turkey			100	(30)	(654)
BF Germany GmbH, Tamm/Germany	(1)		100	10,156	-
GVG Grundstücksverwaltung Gleitlager GmbH & Co. KG, Neckarsulm/Germany			100	6,581	247
GVMS Grundstücksverwaltung Service GmbH & Co. KG, Neckarsulm/Germany			100	38	7
GVN Grundstücksverwaltung Neckarsulm GmbH & Co. KG, Neckarsulm/Germany			100	6,070	681
Intec France SAS, Meyzieu/France			100	1,031	136
Karl Schmidt Trading Company S. de R.L. de C.V., Celaya/Mexico			100	90	67
Karl Schmidt Unisia Michigan LLC, Southfield/USA			100	-	-
Kolbenschmidt de México, S. de R.L. de C.V., Celaya/Mexico			100	10,196	909
Kolbenschmidt K.K., Hiroshima/Japan			100	38,602	2,825
Kolbenschmidt Liegenschaftsverwaltung GmbH Berlin, Neckarsulm/Germany	(1)		100	7,124	77
Kolbenschmidt Pierburg Innovations GmbH, Neckarsulm/Germany	(1)		100	475	(450)
Kolbenschmidt USA Inc., Marinette/USA			100	-	-
KS ATAG Beteiligungsgesellschaft m.b.H., Neckarsulm/Germany	(1)		100	10,263	-
KS ATAG Romania S.R.L., Bucharest/Romania			100	2,850	(733)
KS CZ Motorservice s.r.o., Usti/Czech Republic			100	9,761	215
KS France SAS, Basse-Ham (Thionville)/France			100	16,314	857
KS Gleitlager de México S. de R.L. de C.V., Celaya/Mexico			100	11,142	3,306
KS Gleitlager GmbH, St. Leon-Rot/Germany	(1)		100	18,446	2,303
KS Gleitlager North America LLC, Marinette/USA			100	3,715	357
KS Grundstücksverwaltung Beteiligungs GmbH, Neckarsulm/Germany			100	135	7
KS Grundstücksverwaltung GmbH & Co. KG, Neckarsulm/Germany			100	24,079	623
KS Kolbenschmidt Czech Republic a.s., Usti/Czech Republic			100	42,585	2,620
KS Kolbenschmidt France SAS, Basse-Ham (Thionville)/France			100	9,737	(1,796)
KS Kolbenschmidt GmbH, Neckarsulm/Germany	(1)		100	76,672	4,525
KS Kolbenschmidt US Inc., Marinette/USA			100	(13,029)	(9,306)
KS Large Bore Pistons LLC, Marinette/USA			100	31,023	4,443

Company		Direct share of capital in %	Indirect share of capital in %	Equity in € ’ooo	Net income for the year after PLTA in € ’ooo
KSG Pistons, Inc., South Haven/USA			100	-	-
KSLP (China) Co., Ltd., Kunshan/China			100	2,453	(76)
KSPG (China) Investment Co., Ltd., Shanghai/China			100	54,591	3,845
KSPG Automotive Brazil Ltda., Nova Odessa/Brazil			100	46,844	(7,234)
KSPG Automotive India Private Ltd., Mumbai Maharashtra/India			100	31,783	3,517
KSPG Holding USA Inc., Delaware/USA			100	272,032	1,207
KSPG Malta Holding Ltd., St. Julians/Malta		21	79	60,554	622
KSPG Netherlands Holding B.V., Amsterdam/Netherlands			100	83,993	(21)
KSPG Services Ltd., St. Julians/Malta			100	8,006	286
KSUS International LLC, Marinette/USA			100	55,477	11,338
Mechadyne International Ltd., Kirtlington/Great Britain			100	3,231	21
MS Motorservice Aftermarket Iberica S.L., Abadiano/Spain			100	9,132	1,639
MS Motorservice Asia Pacific Co. Ltd., Shanghai/China			100	2,062	171
MS Motorservice Deutschland GmbH, Tamm/Germany	(1)		100	3,372	25
MS Motorservice France SAS, Villepinte/France			100	21,591	1,631
MS Motorservice International GmbH, Neuenstadt/Germany	(1)		100	46,716	(97)
MS Motorservice Istanbul Dis Ticaret ve Pazarlama A.S., Istanbul/Turkey			51	2,405	479
MS Motorservice Trading (Asia) Pte. Ltd., Singapore/Singapore			100	245	(167)
Pierburg China Ltd., Kunshan City/China			100	23,289	7,877
Pierburg Gestion S.L., Abadiano/Spain			100	64,439	10,119
Pierburg GmbH, Neuss/Germany	(1)		100	129,161	6,092
Pierburg Grundstücksverwaltung GmbH & Co. KG, Neuss/Germany			100	5,815	195
Pierburg Korea, Ltd., Seoul/South Korea			100	87	8
Pierburg Mikuni Pump Technology (Shanghai) Corp., Shanghai/China			51	8,485	(1,000)
Pierburg Mikuni Pump Technology Corporation, Odawara/Japan			51	1,293	16
Pierburg Pump Technology France SARL, Basse-Ham (Thionville)/France			100	43,100	3,609
Pierburg Pump Technology GmbH, Neuss/Germany	(1)		100	89,375	5,434
Pierburg Pump Technology Italy S.p.A., Lanciano/Italy			100	51,388	5,996
Pierburg Pump Technology México S.A.de C.V., Mexico City/Mexico			100	7,854	1,127
Pierburg Pump Technology US LLC, Marinette/USA			100	33,235	13,628
Pierburg S.A., Abadiano/Spain			100	36,030	15,747
Pierburg s.r.o., Usti/Czech Republic			100	92,744	24,682
Pierburg Systems S.L., Abadiano/Spain			100	273	66
Pierburg US LLC, Fountain Inn (Greenville)/USA			100	36,965	7,058
Rheinmetall Automotive AG, Neckarsulm/Germany	(1)		100	340,512	2,148
Société Mosellane de Services SCI, Basse-Ham (Thionville)/France			100	10,178	(17)
Solidteq GmbH, Neuss/Germany	(1)		100	246	4
Investments carried at equity					
Holding companies/service companies/other					
casa altra development GmbH, Düsseldorf/Germany	(6)		35	(154)	(160)
KOLBENHÖFE GmbH & Co. KG, Hamburg/Germany	(5)		50	12,564	(736)
LIGHTHOUSE Development GmbH, Düsseldorf/Germany	(4) (6)		10	207	16
Unternehmerstadt GmbH, Düsseldorf/Germany	(5)		50	7	(1)

Notes to the consolidated financial statements
Shareholdings

Company		Direct share of capital in %	Indirect share of capital in %	Equity in € ’000	Net income for the year after PLTA in € ’000
Defence sector					
Advanced Pyrotechnic Materials Pte. Ltd., Singapore/Singapore	(5)		49	3,668	644
AIM Infrarot-Module GmbH, Heilbronn/Germany			50	9,702	2,677
ARGE RDE/CAE (GbR), Bremen/Germany	(5)		50	65	(1)
ARGE TATM, Bremen/Germany	(5)		50	(2)	(1)
ARTEC GmbH, Munich/Germany	(5)		64	1,228	42
BHIC Systems Integration Sdn Bhd, Kuala Lumpur/Malaysia			49	17	(160)
Contraves Advanced Devices Sdn Bhd, Malaka/Malaysia	(5)		49	24,478	1,611
Defense Munitions International, LLC, Wilmington, Delaware/USA	(5), (6)		50	9	-
DynITEC GmbH, Troisdorf/Germany			35	2,630	1,088
EuroSpike GmbH, Röthenbach/Peg/Germany	(5)		40	3,804	276
GIWS Gesellschaft für Intelligente Wirksysteme mbH, Nuremberg/Germany	(5), (6)		50	1,239	-
Hartchrom Defense Technology AG, Steinach/Switzerland	(6)		38	1,729	-
Helios Aero Services B.V., Rijen/Netherlands	(5)		22	47	-
HFTS Helicopter Flight Training Services GmbH, Hallbergmoos/Germany	(5)		25	86,597	16,622
HIL Industrie-Holding GmbH, Bonn/Germany	(5)		33	55	-
LOG GmbH, Bonn/Germany			25	-	-
ORR Training Systems LLC, Moscow/Russian Federation	(5)		25	(147)	(17)
Oy Finnish Defence Powersystems Ab, Helsinki/Finland			30	66	(5)
PSM Projekt System & Management GmbH, Kassel/Germany	(5)		50	1,259	516
RDZM, LLC, Wilmington, Delaware/USA	(5), (6)		50	86	-
Rheinmetall Arabia Simulation and Training LLC, Riyadh/Saudi Arabia	(5), (6)		40	894	384
Rheinmetall Barzan Advanced Technologies QSTP-LLC, Doha/Qatar			49	(2,146)	(2,091)
Rheinmetall BMC Savunma Sanayi Ve Ticaret A.S., Ankara/Turkey			40	296	(3,271)
Romanian Military Vehicle Systems S.A., Moreni, Cambovita County/Romania	(5)		50	16	(3)
The Dynamic Engineering Solution Pty Ltd, Magill/Australia			49	1,904	(237)
Werk Aschau Lagerverwaltungsgesellschaft mbH, Aschau/Germany	(5), (6)		50	25	-
Automotive sector					
Advanced Bearing Materials LLC, Greensburg/USA			25	2,716	-
HASCO KSPG Nonferrous Components (Shanghai) Co., Ltd., Shanghai/China	(5)		50	189,483	41,285
Kolbenschmidt Huayu Piston Co., Ltd., Shanghai/China	(5)		50	80,650	3,774
KS HUAYU AluTech GmbH, Neckarsulm/Germany	(5)		50	56,709	10,975
Pierburg Huayu Pump Technology Co., Ltd., Shanghai/China	(5)		50	24,765	155
Pierburg Yinlun Emission Technology (Shanghai) Co., Ltd., Shanghai/China	(5)		51	148	(1,252)
Riken Automobile Parts (Wuhan) Co., Ltd., Wuhan/China	(5)		40	33,983	3,616
Shriram Pistons & Rings Ltd., New Delhi/India			20	124,631	17,534

(1) Profit and loss transfer agreement
(2) Included in consolidation due to majority of voting rights
(3) Structured entity (real estate management company)
(4) Significant influence due to distribution of voting rights
(5) Joint ventures
(6) Equity and income from previous years

Responsibility statement

To the best of our knowledge and in accordance with the applicable accounting principles, the consolidated financial statements of Rheinmetall AG give a true and fair view of the net assets, financial position and results of operations of the Group, and the management report of Rheinmetall AG includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.

Düsseldorf, February 26, 2019

Rheinmetall Aktiengesellschaft
The Executive Board

Armin Papperger Helmut P. Merch Horst Binnig Peter Sebastian Krause

Auditor’s report and opinion

INDEPENDENT AUDITOR’S REPORT

To Rheinmetall Aktiengesellschaft, Düsseldorf

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE GROUP MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Rheinmetall Aktiengesellschaft, Düsseldorf, and its subsidiaries (the Group), which comprise the balance sheet as at 31 December 2018, the income statement, the statement of comprehensive income, the cash flow statement and the statement of changes in equity for the financial year from 1 January to 31 December 2018 and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of Rheinmetall Aktiengesellschaft, which is combined with the Company’s management report, for the financial year from 1 January to 31 December 2018. In accordance with the German legal requirements we have not audited the content of those parts of the group management report listed in the “Other Information” section of our auditor’s report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to § [Article] 315e Abs. [paragraph] 1 HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at 31 December 2018 , and of its financial performance for the financial year from 1 January to 31 December 2018 and

- the accompanying group management report as a whole provides an appropriate view of the Group’s position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the content of those parts of the group management report listed in the “Other Information” section of our auditor’s report.

Pursuant to § 322 Abs. 3 Satz [sentence] 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as “EU Audit Regulation”) in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the “Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report” section of our auditor’s report.

Auditor’s report and opinion

We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matters of most significance in our audit were as follows:

❶ Recoverability of Goodwill

❷ Recognition of revenue from customer-specific contracts

Our presentation of these key audit matters has been structured in each case as follows:

① Matter and issue

② Audit approach and findings

③ Reference to further information

Hereinafter we present the key audit matters:

❶ Recoverability of Goodwill

①

In the Company’s consolidated financial statements, goodwill in the total amount of EUR 550 million (8% of total assets) is reported. Goodwill is tested for impairment by the Company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out at the level of those groups of cash-generating units to which the relevant goodwill has been allocated. The carrying amount of the relevant cash-generating unit, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test.

The present value of the future cash flows from the respective group of cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the adopted corporate planning of the Group forms the starting point which is extrapolated on the basis of assumptions about long-term rates of growth. Expectations relating to future market developments and assumptions about the development of macroeconomic factors are also taken into account. The discount rate used is the weighted average cost of capital for the relevant group of cash-generating units. The impairment test determined that no write-downs were necessary.

The outcome of the valuation exercise is dependent to a large extent on the estimates made by the executive directors with respect to the future cash inflows from the respective group of cash-generating units, the discount rate used, the rate of growth and other assumptions, and is therefore subject to considerable uncertainty. Against this background and due to the complex nature of the valuation, this matter was of particular significance in the context of our audit.

②

As part of our audit, we assessed the methodology employed for the purposes of performing the impairment test, among other things. After matching the future cash inflows used for the calculation against the adopted corporate planning for the period 2019-2021 of the Group, we evaluated the appropriateness of the calculation, in particular by comparing it with general and sector-specific market expectations. We also evaluated whether the costs for Group functions were considered properly. With the knowledge that even relatively small changes in the discount rate applied can have material effects on the enterprise value calculated in this way, we also assessed the parameters used to determine the discount rate applied, and evaluated the measurement model. In order to reflect the uncertainty inherent in the projections, we assessed the sensitivity analyses performed by the Company and carried out our own sensitivity analysis. Taking into account the information available, we determined that the carrying amounts of the cash-generating units, including the allocated goodwill, were adequately covered by the discounted future cash flows.

Overall, the measurement inputs and assumptions used by the executive directors are in line with our expectations and are also within the ranges considered by us to be reasonable.

③

The Company's disclosures on impairment testing are contained in notes 8 "Accounting policies" and 9 "Goodwill, other intangible assets" to the consolidated financial statements.

❷ Recognition of revenue from customer-specific contracts

①

In the Company’s consolidated financial statements as of 31 December 2018, EUR 6,148 million in revenue are reported in the income statement, which were recognized over a period of time at an amount of EUR 1,605 million. EUR 338 million in contract assets and EUR 650 million in contract liabilities are recognized in the balance sheet as of 31 December 2018. Revenue from customer-specific contracts is recognized over a period of time if an asset is created that does not have an alternative use to Rheinmetall Aktiengesellschaft, Düsseldorf, and a legal right to payment for the performance already completed exists. Also, if an asset is created or enhanced and the customer gains control over the asset as it is created or enhanced, revenue is recognized over a period of time. When recognizing revenue over a period of time, revenue is recognized based on the percentage of completion, which is the ratio of the actually incurred contract cost to the expected total cost. With respect to the complex production processes, the recognition of revenue over a period of time requires in particular an effective internal budgeting and reporting system, including concurrent project costing, as well as a functioning internal control system.

Against this background, the proper application of the accounting standards for revenue recognition is considered to be complex and to a certain extent based on estimates and assumptions made by the executive directors. This matter was therefore of particular significance for our audit.

②

In the knowledge that the complexity and the need to make estimates and assumptions give rise to an increased risk of accounting misstatements, we evaluated the Group's processes and controls for recognizing revenue from customer-specific contracts. Our specific audit approach included testing of the controls and substantive audit procedures, in particular:

- evaluating the processes for the proper identification of the performance obligations and the classification of satisfying the performance obligation over a specific period of time or at a point in time;
- evaluating the cost accounting system and other relevant auxiliary systems used to account for customer-specific contracts;
- assessing the proper recognition and allocation of individual costs and the amount and allocation of shared overheads;
- assessing the project costings underlying the customer-specific contracts and the calculation of percentage of completion.

We were able to satisfy ourselves that the systems, processes, and controls in place are appropriate and that the estimates and assumptions made by the executive directors are sufficiently documented and substantiated to ensure that revenue from customer-specific contracts is properly recognized.

③

The Company's disclosures on recognition of revenue are contained in notes 8 "Accounting policies" and 24 "Revenue" to the consolidated financial statements.

Other Information

The executive directors are responsible for the other information. The other information comprises the following non-audited parts of the group management report:

- the statement on corporate governance pursuant to § 289f HGB and § 315d HGB included in section "Corporate Governance" of the group management report

- the corporate governance report pursuant to No. 3.10 of the German Corporate Governance Code

- the chapter "Energy management" of the non-financial statement pursuant to § 289b Abs. 1 HGB and § 315b Abs. 1 HGB, which is included in section "Non-financial aspects of business activities" of the management report

The other information comprises further the remaining parts of the annual report – excluding cross-references to external information – with the exception of the audited consolidated financial statements, the audited group management report and our auditor's report.

Our audit opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or

- otherwise appears to be materially misstated.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's report and opinion

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. 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 consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.

- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.

- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

Auditor's report and opinion

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 8 May 2018. We were engaged by the supervisory board on 1 August 2018. We have been the group auditor of the Rheinmetall Aktiengesellschaft, Düsseldorf, without interruption since the financial year 1927.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Norbert Linscheidt.

Düsseldorf, 26 February 2019

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Norbert Linscheidt
(German Public Auditor)

Norbert Klütsch
(German Public Auditor)

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ADDITIONAL INFORMATION

Balance Sheet of Rheinmetall AG
As of December 31, 2018

Assets € '000

	Note	Dec. 31, 2018	Dec. 31, 2017
Fixed assets	(1)		
Intangible assets		7,162	8,621
Property, plant and equipment		36,431	36,394
Financial assets		1,316,715	1,088,862
		1,360,308	**1,133,877**
Current assets			
Inventories	(2)	154	143
Receivables and other assets	(3)	873,951	667,747
Bonds	(4)	195,000	277,696
Cash in hand	(5)	480,902	412,577
		1,550,007	**1,358,163**
Deferred income	(6)	**11,444**	**13,776**
Total assets		**2,921,759**	**2,505,816**

Equity and liabilities € '000

	Note	Dec. 31, 2018	Dec. 31, 2017
Share capital		111,511	111,511
Treasury stock (notional value relating to the share capital)		(1,477)	(1,740)
		110,034	109,771
Capital reserves		549,598	542,083
Retained earnings		148,444	144,002
Net earnings		96,596	73,743
Equity		**904,672**	**869,599**
Provisions	(6)	**101,444**	**107,402**
Liabilities	(7)		
Liabilities due to banks		550,752	493,172
Other liabilities		1,359,716	1,029,468
		1,910,468	**1,522,640**
Deferred income		**5,175**	**6,175**
Total liabilities		**2,921,759**	**2,505,816**

Income Statement for Rheinmetall AG
for Fiscal 2018

€ ’000

	Note	2018	2017
Investment income	(13)	133,372	135,882
Net interest	(14)	(4,420)	(8,835)
Net financial income		**128,952**	**127,047**
Sales	(15)	69,718	58,784
Other operational income		131,983	65,042
Staff costs		40,096	39,691
Amortization of intangible and depreciation of tangible assets (incl. write-down)		3,986	3,203
Depreciation of financial assets	(15)	20,008	0
Other operating expenses	(16)	130,350	105,845
Extraordinary expenses	(17)	**136,213**	**102,134**
Earnings before taxes (EBT)		(39,617)	(28,391)
Taxes on income and revenue	(18)	**96,596**	**73,743**
Net profit for the year		**96,596**	**73,743**
Appropriations to retained earnings		5,596	-
Appropriations of retained earnings		-	-
Net earnings		**91,000**	**73,743**

Supervisory Board

Ulrich Grillo
Mülheim an der Ruhr

Diplom-Kaufmann

Chairman of the Board of Grillo-Werke AG

Chairman

Membership in Supervisory Boards

Innogy SE
Grillo Zinkoxid GmbH
RHEINZINK GmbH & Co. KG (up to September 30, 2018)
Zinacor S.A.

Dr. Rudolf Luz *)
Weinsberg

Board of Directors / Head of operating policies
of German Metalworkers' Union
Vice Chairman

Membership in Supervisory Boards

Rheinmetall Automotive AG
Vice Chairman

Roswitha Armbruster *)
Schramberg

Chairwoman of Works Council of the
Defence sector of Rheinmetall AG

Chairwoman of Works Council
Rheinmetall Waffe Munition GmbH
Branch Mauser Oberndorf

Vice Chairwoman of the Group's Works Council
Rheinmetall AG

Dr.-Ing. Dr.-Ing. E.h. Klaus Draeger
Munich

Former member of the Executive Board of BMW AG

Membership in Supervisory Boards

TÜV Süd AG

Professor Dr. Andreas Georgi
Starnberg

Professor of Leadership and Control Problems
in Enterprises
Ludwig-Maximilians-Universität Munich

Executive Advisor

Membership in Supervisory Boards

Asea Brown Boveri Aktiengesellschaft
Felix Schoeller Holding GmbH & Co. KG
Oldenburgische Landesbank AG (up to March 2018)

Professor Dr. Susanne Hannemann
Bochum

Professor of Applied Business Administration,
in particular company taxation and auditing
Bochum University of Applied Sciences

Dr. Daniel Hay *)
Velbert

Trade union secretary of German Metalworkers' Union

Dr. Franz Josef Jung
Eltville am Rhein

Lawyer and Notary

Dr. Michael Mielke *)
Berlin

Head of Product Division Actuators
Pierburg GmbH, Berlin Plant

Detlef Moog
Mülheim an der Ruhr

Consulting engineer

*) *Elected by the employees*

Reinhard Müller *)
Wabern

Chairman of the Works Council of
Rheinmetall Landsysteme GmbH, Kassel

Vice Chairman of the General Works Council of
Rheinmetall Landsysteme GmbH

Member of the Works Council of the Defence Sector
of Rheinmetall AG

Member the Group's Works Council of
Rheinmetall AG

Chairman of the European Works Council

Dagmar Muth *)
Bremen

Chairwoman of the Works Council of Rheinmetall Electronics GmbH

Member of the Works Council of the Defence Sector of
Rheinmetall AG

Vice Chairwoman of the Group's Works Council Rheinmetall AG

Membership in Supervisory Boards

Rheinmetall Electronics GmbH
Vice Chairwoman

Markus Schaubel *)
Lauffen am Neckar

Chairman of the Works Council of Rheinmetall Automotive AG
KS Kolbenschmidt GmbH
MS Motorservice International GmbH

Chairman of the Sub-Works Council of
Rheinmetall Automotive AG

Vice Chairman of the Group's Works Council
Rheinmetall AG

Membership in Supervisory Boards

Rheinmetall Automotive AG

KS Kolbenschmidt GmbH
Vice Chairman

*) *Elected by the employees*

Sven Schmidt *)
Wiesloch

Chairman of the Works Council of
KS Gleitlager GmbH, St. Leon - Rot

Chairman of the General Works Council of
KS Gleitlager GmbH

Vice Chairman of the Sub-Works council of
Rheinmetall Automotive AG

Chairman of the Group's Works Council
Rheinmetall AG

Klaus-Günter Vennemann
Waidring, Österreich

Consulting engineer

Membership in Supervisory Boards

Nanogate SE
Nanogate PD Systems GmbH
Nanogate Central and Eastern Europe GmbH
Dr. Rudolf Kellermann GmbH

Univ.-Prof. Dr. Marion A. Weissenberger-Eibl
Karslruhe

Head of the Fraunhofer System and Innovation
Research Institute (ISI)

Chairholder „Innovation and Technology Management"
at Karlsruhe Institute of Technology (KIT)

Membership in Supervisory Boards

HeidelbergCement AG
MTU Aero Engines AG
Deutsche Akademie der Technikwissenschaften (acatech)

Executive Board Rheinmetall AG

Armin Papperger
Meerbusch

Chairman

Defence

Chairman of Management Board Defence

Membership in Supervisory Boards

Rheinmetall Automotive AG *)
Chairman

Nitrochemie AG *)
President

Nitrochemie Aschau GmbH *)
Chairman

Nitrochemie Wimmis AG *)
President

Rheinmetall Denel Munition (Pty) Ltd *)
Chairman

Rheinmetall MAN Military Vehicles GmbH *)
Chairman

Helmut P. Merch
Meerbusch

Finance and Controlling

CFO of Management Board Defence

Mitgliedschaft in Aufsichtsgremien

Rheinmetall Automotive AG *)

Nitrochemie AG *)

Nitrochemie Aschau GmbH *)

Nitrochemie Wimmis AG *)

Rheinmetall Denel Munition (Pty) Ltd *)

*) *Affiliated mandates*

Horst Binnig
Bad Friedrichshall

Automotive

Chairman of the Executive Board
Rheinmetall Automotive AG

Membership in Supervisory Boards

HASCO KSPG *)
Nonferrous Components (Shanghai) Co. .,Ltd.
Chairman

Kolbenschmidt Huayu Piston Co., Ltd. *)
Vice Chairman

KS HUAYU Alu Tech GmbH *)
Vice Chairman

KS Gleitlager GmbH *)
Chairman

KS Kolbenschmidt GmbH *)
Chairman

KSPG Holding USA, Inc. *)
Director

Pierburg GmbH *)
Chairman

Pierburg HUAYU Pump Technology Co., Ltd. *)
Vice Chairman of the Board of Directors

Pierburg Pump Technology GmbH *)
Chairman

KSPG (China) Investment Co., Ltd. *)
Chairman of the Board of Directors

Bertrandt AG

*) *Affiliated mandates*

Peter Sebastian Krause
Erkrath

Human Resources

Director of Industrial Relations

Member of the Executive Board
Rheinmetall Automotive AG

Member of Management Board Defence

Membership in Supervisory Boards

Rheinmetall Electronics GmbH *)

Rheinmetall Landsysteme GmbH *)
Chairman

Rheinmetall Waffe Munition GmbH *)
Chairman

Representative Director

Dr. Rolf Giebeler, MPA (Harvard)
Bonn

General Counsel
Representative Director Law

Chief Compliance Officer

Michael Salzmann
Düsseldorf

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This report was published on March 13, 2019. The editorial deadline was February 26, 2019.

The annual report of Rheinmetall AG is available in German (original version) and English (non-binding translation). Both versions are available to download at www.rheinmetall.com.

This report contains statements and forecasts referring to the future development of the Rheinmetall Group which are based on assumptions and estimates made by the management. A number of factors, many of which are beyond Rheinmetall's control, influence the business activities, success, business strategy and results of the Company. Statements regarding the future are based on current plans, targets, estimates and forecasts and only take into account findings made up to and including the date this report was produced. If the underlying assumptions do not materialize, the actual figures may differ from such estimates. Uncertain factors include changes in the political and economic environment, changes to national and international laws and regulations, market fluctuations, the development of global market prices for commodities, exchange rate and interest rate fluctuations, the impact of rival products and competitive prices, the acceptance of and demand for new products, the effect of changes to customer structures and changes to the business strategy. Rheinmetall does not intend, nor does it undertake a particular commitment, to update statements referring to the future or to adjust these to events or developments following the publication of this annual report.

MOBILITY. SECURITY. PASSION.

RHEINMETALL
GROUP