Half-Year Financial Report

MTU AERO ENGINES AG

FINANCIAL YEAR 2022

Contents

Half-Year Financial Report 2022

January 1 to June 30, 2022

Key facts and figures

Key facts and figures for the Group

in € million (unless stated otherwise)	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021	Year-on-year change in € million	Year-on-year change in %
Income statement				
Revenue	2,469	2,004	465	23.2
Gross profit	351	290	61	20.9
Earnings before interest and taxes (EBIT)	183	168	15	9.1
Adjusted earnings before interest and taxes (adjusted EBIT)	290	190	100	52.6
Earnings before tax	166	146	20	13.9
Net income	120	103	17	16.5
Adjusted net income	207	135	72	53.3
Basic earnings per share (in €)	2.23	1.89	0.34	18.0
Diluted earnings per share (in €)	2.19	1.85	0.34	18.4
Revenue margins in %				
Earnings before interest and taxes (EBIT)	7.4	8.4		
Adjusted earnings before interest and taxes (adjusted EBIT)	11.7	9.5		
Earnings before tax	6.7	7.3		
Net income	4.9	5.1		
Adjusted net income	8.4	6.7		
Cash flow				
Cash flow from operating activities	318	283	36	12.6
Cash flow from investing activities	–155	–123	–32	–26.3
Free cash flow	168	187	–19	–10.4
Cash flow from financing activities	–158	–236	78	33.2
Change in cash and cash equivalents	12	–74	86	>100

in € million (unless stated otherwise)	June 30, 2022	Dec 31, 2021	Year-on-year change in € million	Year-on-year change in %
Balance sheet				
Intangible assets	1,136	1,128	8	0.7
Cash and cash equivalents	733	722	12	1.6
Pension provisions	745	948	–204	–21.5
Equity	2,842	2,760	82	3.0
Net financial debt	627	673	–47	–6.9
Order backlog	**24,563**	**22,237**	**2,326**	**10.5**
Number of employees	**10,833**	**10,508**	**325**	**3.1**
Commercial and military engine business (OEM)	6,678	6,497	181	2.8
Commercial maintenance business (MRO)	4,155	4,011	144	3.6

Interim Group management report

The MTU Group

MTU's portfolio covers the entire lifecycle of commercial and military aircraft engines and aero-derivative industrial gas turbines. The company's activities range from development, manufacturing and marketing to maintenance.

Research and development

The pace of technological development in the aviation sector is very high and requires continual innovation. Alongside ongoing development of the commercial and military engine programs in which MTU is currently involved, development work at MTU includes work on German and EU development programs for future engine programs.

Research and development expenses developed as follows in the reporting period:

Research and development expenses

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021	Year-on-year change in € million	in %
Commercial engine business (OEM)	107	81	26	32.0
Military engine business (OEM)	19	14	4	30.7
Commercial maintenance business (MRO)	9	7	2	37.4
Total research and development expenses	**135**	**102**	**33**	**32.2**
less: customer-funded R&D expenditure	34	27	7	26.6
Company-funded R&D expenses	**101**	**75**	**26**	**34.2**
Expenditure meeting recognition criteria for intangible assets				
regarding commercial engine business (OEM)	37	23	15	65.1
regarding commercial maintenance business (MRO)		0	-0	-100.0
Research and development costs recognized as expense	**63**	**52**	**11**	**21.7**
Amortization of capitalized development costs	15	12	3	26.1
Impairments	63		63	
Development costs recognized in EBIT	**141**	**64**	**77**	**>100**
thereof: amounts accounted for as revenue or cost of sales	94	26	67	>100
thereof: amounts accounted for as research and development expenses	47	37	10	26.9

A distinction is made between company- and customer-funded research and development projects. Company-funded projects are funded out of the Group's own resources, while customer-funded projects are ordered and paid for by customers. The company-funded research and development projects are presented in Note 3 to the condensed consolidated interim financial statements ("Research and development expenses").

The impairment losses that had to be recognized in the reporting period relate to capitalized development costs and acquired development work in connection with the PW1400G-JM and T408 engine programs. Further information on the special items in the impairment losses can be found in *Note 12 "Additional disclosures relating to the income statement."*

Economic report

Macroeconomic conditions

While the prospects of a global economic recovery from the pandemic looked optimistic at the beginning of the year, the outlook has deteriorated in recent months. Due to the impact of Russia's invasion of Ukraine, the World Bank is now forecasting global economic growth of 2.9% this year, compared with its expectation of 4.1% back in January. The effects are reflected in significantly higher raw material prices and inflationary pressure, resulting in higher consumer prices and reduced purchasing power. At the same time, China's no-Covid policy is causing supply bottlenecks.

In the first three months of this year, the Chinese economy grew by 1.3% compared with the previous quarter. Following two years in which it had been badly affected by the pandemic, the eurozone reported a slight rise in GDP of 0.3% compared with the previous quarter. Unlike the development in the eurozone and China, GDP declined by 0.4% in the U.S.A. in the first quarter of 2022.

In the first six months of 2022, many governments introduced extensive measures to mitigate the effects on people and companies. Moreover, the central banks have abandoned their expansionary monetary policy in order to combat inflation. In some regions of the world, optimism is fueled by the fact that recovery at the start of the year brought GDP back to the pre-crisis level of 2019 despite high inflation. In the second half of the year, the economy is expected to improve compared with the first half. However, the course of the upturn remains uncertain because, alongside higher inflation and the related effects, there is still a risk of a renewed rise in Covid infections and energy supply bottlenecks resulting from geopolitical tensions. As a result, consumer-related mobility could be dampened. Moreover, the disruption of supply chains is causing global and cross-sector production bottlenecks, resulting in longer delivery times.

Sector-specific conditions within the aviation industry

In April 2022, passenger demand (measured in revenue passenger kilometers or RPKs) was still around 37% below the pre-crisis level (source: IATA). However, it was 79% higher than in the prior-year period. The removal of pandemic-related restrictions on international air travel were a major reason for this.

Flight analyses show that the downward trend in the sector has bottomed out and demand is steadily improving. The number of passenger flights has increased continuously since the start of February. Despite restrictions and flight cancellations caused by handling problems at airports and staff shortages at airlines, the proportion of the fleet of aircraft with more than 100 seats in service had risen to 85% by the end of June (source: Cirium Fleets Analyzer).

The price of Brent crude oil rose sharply in the first six months and was U.S.$109 per barrel on July 1. In 2021, the average price was U.S.$71 per barrel (source: U.S. Energy Information Administration). That raises the financial burden on airlines and supports demand for efficient, modern aircraft.

As a result of reduced production rates and the postponement of orders, Airbus and Boeing delivered a total of 488 commercial aircraft in the first six months of 2022. In the same period of 2019 – prior to the crisis – 589 aircraft were delivered. At the end of June 2022, Airbus and Boeing reported a combined total of 12,114 orders, which was a good 2% lower than in the prior-year period. Cancellations were moderate at 294 aircraft in the first six months of this year (source: Cirium Fleets Analyzer).

Financial situation

Information on exchange rates

The development of the U.S. dollar is particularly important for MTU's international business. The U.S. dollar exchange rate was U.S.$1.04 per €1 as of June 30, 2022 (December 31, 2021: U.S.$1.13 per €1). The average exchange rate in the period from January 1 through June 30, 2022, was U.S.$1.09 per €1 (H1 2021: U.S.$1.21 per €1).

Results of operations

Reconciliation to adjusted key performance figures

The reconciliation from earnings before interest and taxes to adjusted earnings before interest and taxes and adjusted net income is as follows:

Reconciliation to adjusted key performance figures

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021	Year-on-year change in € million	Year-on-year change in %
Earnings before interest and taxes (EBIT)	**183**	**168**	**15**	**9.1**
Adjustment of exceptional items in the EBIT	22	22	–0	–0.6
Impairment (IAS 36)	85	0	85	0.0
Adjusted earnings before interest and taxes (adjusted EBIT)	**290**	**190**	**100**	**52.6**
Interest result	–15	–15	1	6.0
Interest cost on pension provisions	–5	–3	–2	–76.9
Adjusted earnings before tax	**270**	**171**	**99**	**57.5**
Income taxes	–63	–36	–27	–73.3
Adjusted net income	**207**	**135**	**72**	**53.3**

The reconciliation serves to factor special items out of the key earnings figures of the Group and its business segments. In this way, the success of managing operating activities is measured. The adjusted earnings figures also support comparability over time, and between MTU and other companies. MTU utilizes the following adjusted key performance figures in its financial reports: adjusted earnings before interest and taxes (adjusted EBIT), the adjusted EBIT margin and adjusted net income. The earnings figures do not come under the provisions of the International Financial Reporting Standards (IFRSs); they are to be seen as an addition to the key financial indicators reported pursuant to IFRS.

In the interests of ensuring comparability of the EBIT figure, it is adjusted for the material contributions (special items) resulting from the "effects from purchase price allocation," the "effects from the increase in the stake in IAE-V2500," accrued "impairment losses (IAS 36)" and "restructuring expenses (IAS 37)." In fiscal 2022, an adjustment is also made for asset impairments in connection with the war in Ukraine.

As of January 1, 2004, MTU passed into the ownership of Kohlberg Kravis Roberts & Co. Ltd. (KKR), following the latter's purchase of 100% of the MTU shares from the then DaimlerChrysler AG. In the context of the acquisition, assets, liabilities and contingent liabilities were identified in accordance with IFRS 3 and measured at fair value. Since then, the identified intangible assets, in particular, have resulted in substantial amortization, which is referred to as „effects from purchase price allocation.“ The contributions from the "effects from an increase in the stake in IAE-V2500" result from the increase in the stake in the V2500 program in 2012, which is capitalized as an acquired program asset and is accounted for as a reduction in revenue over its estimated economic life of 25 years.

Similarly, the effect of the special items outlined above is eliminated from earnings before income taxes. To establish adjusted earnings before income taxes, net interest income/expense and the interest shares in other financial income/expense connected with provisions for pensions and liabilities from pensions and plan assets are added to adjusted EBIT. All other components of financial income/expense, especially those that are influenced by the U.S. dollar exchange rate, such as the effects of exchange-rate hedging as of the reporting date, are adjusted.

Adjusted net income is derived from adjusted earnings before income taxes. The normalized income taxes are calculated on the basis of the expected sustained average tax rate for the Group of 26%. The profit/loss of companies accounted for using the equity method does not form part of the tax base.

Order backlog

MTU's order backlog consists of firm customer orders that commit the Group to delivering products or providing services, plus the contractual value of service agreements. As of June 30, 2022, the order backlog was approximately €24.6 billion, corresponding to a theoretical production workload of around four and a half years.

Revenue

Revenue increased by €465 million (23.2%) year-on-year to €2,469 million in the first six months of 2022. Revenue from the commercial and military engine business rose by €108 million (15.5%) to €810 million. In the commercial maintenance business, revenue increased by €358 million to €1,711 million.

In addition to the positive business performance, the development of revenue in the segments was driven by the realized product mix (OEM and MRO) and, in the OEM segment, the development of margins on the GTF engine programs in both the series and after-sales business, and the development of the U.S. dollar exchange rate in the first six months. The exchange rate supported revenue accruals for goods and services, but also had considerable downside valuation effects, especially on the measurement of obligations in connection with stakes in commercial engine programs (OEM).

A further revenue driver in the first six months came from the update of carrying amounts of invoice corrections in liabilities, especially from participation in warranty risks of consortia (risk and revenue sharing) and maintenance contracts for commercial engine programs (OEM), which require regular estimates of the underlying obligations.

Cost of goods sold and gross profit

As a result of the increased business volume, in the first six months of 2022, the cost of goods sold increased by €404 million (23.6%) year-on-year to €2,118 million, which roughly correlated with revenue. The cost of goods sold includes non-recurring asset impairments of €40 million in connection with the war in Ukraine (January through June 2021: €0 million) and further impairment losses of €18 million (January through June 2021: €0 million) on the stake in the T408 engine program.

The impairment losses in connection with the war in Ukraine relate to the termination or dissolution of contractual relations in favor of Russian markets and the loss of assets in Russia.

The impairment losses in connection with the stake in the GE T408 engine program, which is used in the Sikorsky CH-53K cargo helicopter, are mainly due to recent decisions by military authorities, including the German armed forces, in favor of alternative cargo helicopters.

The gross profit totaled €351 million in the first six months, which was €61 million (20.9%) higher than in the prior-year period. The increase was mainly due to the positive business performance of the MRO segment. By contrast, the business development in the OEM segment, which was also positive, was almost completely offset by the aforementioned impairment losses on assets. The gross margin dropped to 14.2% (January through June 2021: 14.5%).

Earnings before interest and taxes (EBIT)

Earnings before interest and taxes rose by €15 million (9.1%) to €183 million in the first six months of 2022 (January through June 2021: €168 million). Adjusted earnings before interest and taxes improved to €290 million (January through June 2021: €190 million) and the adjusted EBIT margin was therefore 11.7% (January through June 2021: 9.5%).

Net financial income/expense

Net financial expense was €17 million in the reporting period (January through June 2021: €22 million). The improvement was mainly due to foreign currency valuation effects.

Earnings before income taxes

Earnings before income taxes rose by €20 million to €166 million in the first six months of 2022 (January through June 2021: €146 million).

Net income

Net income increased to €120 million (January through June 2021: €103 million). Net income attributable to shareholders of MTU Aero Engines AG was €119 million (January through June 2021: €101 million). Adjusted net income was €207 million, which was €72 million higher than in the same period of the previous year (January through June 2021: €135 million).

Consolidated statement of comprehensive income

In the consolidated statement of comprehensive income, the net income of €120 million (January through June 2021: €103 million) is reconciled with the total comprehensive income for the period of €206 million (January through June 2021: €105 million).

Income and expense items directly recognized in other comprehensive income in the first six months of 2022, net of deferred taxes, mainly comprised negative changes in the fair value of cash flow hedges totaling €105 million (January through June 2021: €49 million), positive effects from currency translation of foreign Group companies totaling €51 million (January through June 2021: €29 million), and actuarial gains from changes in interest rates in connection with the measurement of pension obligations and plan assets totaling €139 million (January through June 2021: €27 million).

Of the total comprehensive income for the period of €206 million (January through June 2021: €105 million), €199 million is attributable to shareholders of MTU Aero Engines AG (January through June 2021: €100 million).

Financial position

The principles and objectives of financial management are outlined on page 51 et seq. of the Annual Report 2021 and are still applied unchanged by the Group. There were the following changes compared with the consolidated financial statements as of December 31, 2021:

The €600 million revolving credit facility concluded with five banks, which would run until October 28, 2023, was replaced ahead of schedule by a new €500 million revolving credit facility with now nine banks. This credit facility has a term of five years, ending on June 29, 2027, and can be extended twice by one year in each case at the company's request.

The Group's borrowing still mainly comprises bonds, notes and convertible bonds.

Free cash flow

MTU determines its free cash flow from the total of its cash flow from operating activities and its cash flow from investing activities, after eliminating components of the latter (non-recurring cash flows) that are outside the operational management of the core business. In the calculation of the free cash flow, corresponding adjustments were therefore made for cash outflows for the acquisition of stakes in programs in the net amount of €12 million (January through June 2021: €26 million) and cash outflows for aircraft or engine financing arrangements in the net amount of €6 million (January through June 2021: €1 million), which are non-recurring cash flows. The adjusted cash outflows for the acquisition of stakes in programs relate, in particular, to compensation payments in favor of the cell manufacturer in connection with the stake in the PW812 engine program (January through June 2021: mainly payments for the acquisition of stakes in MRO programs). By contrast, the adjustment for the second tranche of the net cash inflow in connection with the divestment of Vericor Power Systems in the previous year amounted to -€14 million (January through June 2021: €0 million).

A free cash flow of €168 million was realized in the first six months of 2022 (January through June 2021: €187 million).

Financial position

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021	Year-on-year change in € million	Year-on-year change in %
Cash flow from operating activities	318	283	36	12.6
Cash flow from investing activities	-155	-123	-32	-26.3
+ Cash flow adjustments	4	27	-23	-85.0
Free cash flow	**168**	**187**	**-19**	**-10.4**
– Cash flow adjustments	-4	-27	23	85.0
Cash flow from financing activities	-158	-236	78	33.2
Translation differences	6	2	4	>100
Change in cash and cash equivalents	**12**	**-74**	**86**	**>100**
Cash and cash equivalents				
at the beginning of the reporting period	722	773	-51	-6.6
at the end of the reporting period	733	698	35	5.0
thereof: presented as cash and cash equivalents	733	695	38	5.5
thereof: presented as part of disposal groups of assets		3	-3	-100.0

Cash flow from operating activities

In the first six months of the 2022 fiscal year, the cash flow from operating activities was €318 million (January through June 2021: €283 million). The year-on-year increase is mainly attributable to cash effective business growth.

Cash flow from investing activities

The cash outflow for investing activities was €155 million in the first six months of the 2022 fiscal year (January through June 2021: €123 million). Cash outflows for investments in intangible assets amounted to €27 million (January through June 2021: €52 million) and mainly comprised investments for the Pratt & Whitney GTF™ engine family. Cash outflows for investment in property, plant and equipment amounted to €93 million in the reporting period (January through June 2021: €81 million). The capital expenditure relates to the expansion of MTU's production capacities, especially at its sites in Germany and Serbia, and replacements for existing technical equipment, plant and machinery. In addition, proceeds of €2 million were generated from the sale of property, plant and equipment (January through June 2021: €18 million).

The net result of cash inflows and outflows relating to financial assets was an outflow of €12 million (January through June 2021: outflow of €1 million) and mainly results from net cash outflows relating to participation in aircraft financing activities and the capital increase at the joint venture EME Aero sp.z.o.o.

In the first half of 2022, €24 million (January through June 2021: €9 million) was spent on program assets (acquisition costs to purchase and/or increase program stakes) and acquired development assets relating to participation in consortia for commercial engine programs.

Cash flow from financing activities

Between January 1 and June 30, 2022, the cash outflow for financing activities was €158 million (January through June 2021: €236 million). The main drivers of the cash outflow in the reporting period were the higher dividend payment of €112 million for the 2021 fiscal year and payments for lease liabilities in the amount of €27 million.

Change in cash and cash equivalents

The development of the cash flow, including currency effects, resulted in an increase of €12 million in cash and cash equivalents (January through June 2021: a decrease of €78 million).

Net financial debt

Net financial debt serves as an indicator of the MTU Group's liquidity situation and is defined as the difference between gross financial debt and financial assets. As of June 30, 2022, net financial debt declined by €47 million to €627 million (December 31, 2021: €673 million).

Net financial debt

			Year-on-year change	
in € million	June 30, 2022	Dec. 31, 2021	in € million	in %
Bonds and notes	610	604	6	1.1
Convertible bonds	531	529	2	0.3
Financial liabilities to related companies	4	0	4	>100
Lease liabilities	138	176	–39	–21.9
Financial liabilities arising from acquisition of stakes in engine programs	144	142	3	1.9
thereof: financial liabilities arising from IAE-V2500 stake increase	136	138	–2	–1.6
Gross financial debt	**1,427**	**1,451**	**–24**	**–1.7**
less:				
Cash and cash equivalents	733	722	12	1.6
Loans to third parties	67	56	11	19.7
Financial assets	**801**	**778**	**23**	**2.9**
Net financial debt	**627**	**673**	**–47**	**–6.9**

For a detailed explanation of the bonds and notes and the financial liabilities from the increase in the stake in the IAE V2500, please refer to the explanations on page 167 et seq. of the Annual Report 2021 of MTU Aero Engines AG.

Net assets

Changes in balance sheet items

Total assets increased by €341 million from €8,304 million as of December 31, 2021, to €8,645 million as of June 30, 2022.

Non-current assets were €81 million lower than on December 31, 2021, at €3,962 million, while current assets were €422 million higher at €4,682 million.

In the first six months of 2022, intangible assets totaling €28 million were recognized (January through June 2021: €52 million). The additions mainly comprise capitalized self-created development assets for the Pratt & Whitney Geared Turbofan™ engines.

Additions to property, plant and equipment amounted to €102 million in the first six months of 2022 (January through June 2021: €95 million).

Acquired program assets, development work and other assets declined by €67 million to €831 million. This was principally due to the aforementioned impairment losses on compensation payments in connection with the PW1400G-JM and T408 engine programs.

In the first six months of 2022, contract assets rose by €256 million to €1,152 million, current other financial assets increased by €79 million to €256 million, trade receivables increased by €76 million to €1,022 million, inventories were €27 million higher at €1,406 million and cash and cash equivalents rose by €12 million to €733 million. By contrast, current other assets were €16 million lower at €34 million and income tax receivables declined by €11 million to €79 million.

Group equity increased by €82 million compared with the level on December 31, 2021, to €2,842 million.

In the first six months of 2022, equity was increased by actuarial gains of €139 million (January through June 2021: €27 million), mainly due to the development of the discount rates for pension obligations and plan assets, net income of €120 million (January through June 2021: €103 million) and positive effects from currency translation of foreign Group companies totaling €51 million (January through June 2021: €29 million). Equity was reduced by payment of the dividend for 2021 totaling €112 million (January through June 2021: €67 million), reductions in the fair value of cash flow hedges totaling €105 million (January through June 2021: €49 million) and dividend payments of €12 million to non-controlling interests (January through June 2021: €8 million). The equity ratio was 32.9% (December 31, 2021: 33.2%).

The following effects were only registered in the first half of 2021: Equity was increased by the sale of treasury shares in an amount of €23 million in connection with the employees stock option program and €2 million in connection with the restricted stock plan, and by €8 million due to conversions of the convertible bond 2016. Conversely, equity was reduced by €31 million due to the share buyback and by reductions in the fair value of equity investments totaling €6 million.

Pension provisions were €204 million lower than on December 31, 2021, mainly because of an increase in the discount rate. Other provisions declined by €40 million to €196 million. This was principally attributable to the utilization of provisions for bonuses and one-time payments.

Financial liabilities increased by €111 million compared with December 31, 2021, to €1,775 million. The rise was mainly due to an increase in the negative fair values of derivatives with hedging relationship.

Trade payables were €320 million as of June 30, 2022, which was €155 million higher than on December 31, 2021, primarily as a result of business trends and changes in exchange rates.

Compared with December 31, 2021, contract liabilities decreased by €3 million to €696 million. Advance payments received are recognized as contract liabilities if they exceed the associated contract assets.

Other liabilities increased by €19 million compared with December 31, 2021, to €81 million. This was principally due to higher personnel-related liabilities.

Employees

MTU had 10,833 employees on June 30, 2022 (December 31, 2021: 10,210).

Events after the reporting date

Events after the reporting date (June 30, 2022)

There were no events of specific importance with a significant impact on the net assets, financial position and results of operations of the MTU Group between the interim reporting date and the adoption of this half-year financial report on July 25, 2022.

Forecast, risk and opportunity report

In order to take best advantage of market opportunities and to identify and manage the risks involved, the Executive Board has established an integrated opportunity and risk management system. This is linked to the Group's value-oriented performance indicators and its organizational structure. The system is based on the internationally recognized COSO II Enterprise Risk Management Framework. It also includes the internal control system for the accounting process in accordance with Sections 289 (5) and 315 (2) No. 5 of the German Commercial Code (HGB). For a more detailed description of the attributes of this system and the methods applied, please refer to the Annual Report 2021, page 85 et seq.

Forecast

Macroeconomic conditions

The global growth forecast depends on many factors, especially on the development of the political and economic situation resulting from Russia's invasion of Ukraine. The type and duration of the post-pandemic recovery will also impact global GDP. Moreover, global economic activity will be impacted in the future course of the recovery from the pandemic.

Current forecasts for 2022 assume that global GDP will grow by between 2% and 3%. This is based on the assumption that the fiscal policy measures to check inflation are effective and that no further extensive lockdowns are necessary. In July 2022, the World Bank predicted that the world economy will grow by 2.9%. In its June forecast for 2022, the Economist Intelligence Unit (EIU) projected that global GDP will rise by 2.8%.

Sector-specific conditions within the aviation industry

The airlines' global revenue is expected to rise from U.S.$506 billion in 2021 to around U.S.$782 billion in

2022 (IATA forecast of July 2022). IATA assumes an annual loss of around U.S.$9.7 billion or around 1% of revenue (2021: U.S.$42.1 billion or 8.3% of revenue).

For 2022, IATA is forecasting that passenger traffic will increase by 98% compared with 2021. That would still be 18% below the pre-crisis level recorded in 2019. Tourism Economics and IATA forecast that passenger traffic will only return to the 2019 level in 2024. Domestic flights with short- and mid-haul aircraft should recover earlier – in 2023 – while long-haul international flights are only expected to recover to the pre-crisis level in 2025. There is a risk of further flight cancellations due to a shortage of staff to operate airports and aircraft.

The expected recovery in demand is confirmed by the announcement that Airbus and Boeing are adjusting production of new aircraft. Airbus is planning a stepwise increase in total output. The production rate of the A320 family will rise from 50 aircraft per month at present to 75 per month in 2025. Boeing intends to raise monthly deliveries of the 737 MAX, which has been relicensed for operation by the authorities, except in China, from 16 to 31. Production of the 787 is to be increased from 2 to 5 aircraft in the mid term. At present, production rates are still being held back by supply bottlenecks, resulting in delays in taking older aircraft out of service ahead of schedule.

The air cargo business is doing very well. Despite low capacity due to the reduced availability of belly cargo space on passenger fights, revenue is expected to rise in 2022. While 80% of the passenger fleet was in use as of June 30, 2022, the figure for the cargo fleet was 90% (source: Cirium Fleets Analyzer). The CF6- 80C and PW2000 programs are benefiting particularly from this development, as 58% of their fleet is in the cargo sector.

Future performance of MTU

MTU has given more precise details of its guidance for 2022 compared with the Annual Report 2021.

MTU now expects revenue to be between €5,200 and €5,400 million, based on an assumed exchange rate of U.S.$1.10 per €1.

This revenue forecast is based on the following assumptions:

In the commercial OEM business, MTU expects to report growth in business with both new components and spare parts.

Growth in the commercial OEM business is mainly dependent on a further rise in deliveries of the new Geared Turbofan™ programs and the expected resumption of deliveries of the GEnx. Growth is expected to be in the mid- to high-teens percentage range.

Growth in the spare parts business will be driven mainly by engines for narrowbody aircraft and continued strong demand for engines for cargo planes. Overall, this business area should post organic growth in mid-teens percentage range.

Revenue in the military business should grow by a high single-digit percentage in 2022.

For the commercial MRO business, MTU is forecasting organic growth in the high-teens percentage range. Previously, it had assumed growth in the mid to high twenty percent range. Growth in the maintenance of the Geared Turbofan™ programs is expected to lag slightly behind the recovery of the other MRO programs.

MTU assumes that in 2022 the operating result (adjusted EBIT) will rise in the mid twenty-percent range compared with the previous year.

MTU still expects that adjusted net income will rise analogously to EBIT in 2022.

Investment spending will increase further in 2022. However, MTU plans to offset these expenses through its operating business.

The free cash flow conversion rate (free cash flow/adjusted EBIT) is expected to be in the mid to high double-digit percentage range.

Risks

In view of its business activities, its involvement in a globally networked market with a wide range of different economic and political conditions and its business relationships dominated by consortia, MTU is exposed to risks that could influence its economic development. The aviation sector and the aviation industry are particularly affected by the ongoing global Covid-19 pandemic because international flights are still curtailed by restrictions imposed by individual states and the risk that virus mutations could spread. As a consortium partner and supplier to this sector, MTU is greatly affected by this crisis.

In the commercial new OEM components business and as a service provider in the commercial aftermarket, MTU is feeling the effects of the Covid-19 pandemic on many of its business activities. A clear drop in demand for passenger flights and air cargo, partly due to ongoing travel and contact restrictions, will continue to be felt in a more cautious approach by MTU’s customers to new orders for products and services, which could lead to considerable postponements or even the cancellation of some of the orders that have already been received.

Covid-19 could have a negative impact on MTU’s stakes in commercial engine programs in the mid to long term, i.e., it could result in impairment losses on the value of the related assets or increase (contingent) liabilities from such participations and MTU’s obligations as a member of risk- and revenue-sharing partnerships (RRSP). The impact of the Covid-19 pandemic on the aviation industry is therefore affecting MTU’s forecasting ability for its stakes in commercial engine programs. Based on the restrictions on air travel, MTU still anticipates, in particular, that there will be delays in the materialization of marketing of its products and services to the respective engine OEMs.

The Covid-19 pandemic could also lead to further operational challenges within the MTU Group because MTU has to protect the health and safety of its employees and there could be disruption at workplaces. Moreover, MTU’s operations could still be adversely affected by restrictions on the movement of people, raw materials and goods from and to its locations, suppliers or customers. MTU could also be indirectly affected by the effects of the Covid-19 pandemic on its suppliers. Some suppliers may have to temporarily suspend operations, confronting MTU with additional business disruption and challenges in the short or mid term. Therefore, MTU could be exposed to risks in respect of costs that are necessary to meet its contractual commitments as well as risks to its product supply schedules, possibly including penalties.

The restrictions on air travel in connection with the Covid-19 pandemic are having a direct impact on the solvency of commercial airlines. Alongside the implications for future demand for MTU products and services outlined above, which has a direct effect on the value of non-current intangible assets, other non-current assets and inventories, there are risks relating to the contract assets and financial assets recognized as of the reporting date. The latter also relate to MTU’s stakes in the OEM sales financing arrangements recognized. Although MTU has many years’ experience in handling such risks, especially credit risks in the aviation industry, the present situation confronts it with additional challenges. MTU is endeavoring to address these, in particular through continuous, intensive risk analyses and risk-oriented security (collateral, guarantees, etc.).

As a long-term effect of the Covid-19 pandemic, MTU could face more rapid changes in usage patterns or aviation regulations, which could adversely affect its business model. An ongoing public debate about the ecological and social implications of air travel and air cargo driven by the ongoing global climate debate has already become established. This has heightened personal and corporate awareness of travel and consumption behavior. Potential changes in usage patterns and the applicable regulations could be intensified and given new momentum by experience during the Covid-19 pandemic, e.g., the shift from business trips to online video conferences. If a reduction in travel and altered consumer spending patterns are regarded as socially desirable by the general public, this could have a sustained negative impact on MTU’s business model. As already mentioned, this would involve the risk of impairment losses on investments in commercial engine programs (non-current other assets, intangible assets) and, furthermore, affect the forecast long-term growth of the aviation industry and thus MTU’s business potential in its current market segments.

These effects would have a direct impact on the performance indicators of both segments. In terms of volume sales, only the military business is still not directly affected by the Covid-19 pandemic, nor will it be in the foreseeable future. The risks in the military business still come mainly from political conditions such as export restrictions and budget reductions for new transactions, as well as the Covid-19-related friction in supply chains and production. In view of this, MTU is exposed to a risk of delays or temporary disruption in its supply chain.

MTU is still actively monitoring and dealing with the effects of the Covid-19 pandemic. Nevertheless, the situation resulting from the Covid-19 pandemic and uncertainty about its duration, future development and knock-on effects are hampering MTU's ability to plan and reliably forecast its business operations, especially in the short and mid term. Although MTU consults with government authorities, the relevant OEMs and other sector representatives at national and international level, it may not be in a position to adequately predict the business impact of the Covid-19 pandemic and developments in connection with the global climate debate, which are reinforcing the transformative innovation pressure in the aviation industry. This could adversely affect MTU's business, cash flow, operating result and financial condition. MTU continues to address the present need to maintain and expand strategic resources, on the one hand, and the need to maximize the efficiency of costs and liquidity, on the other, with great determination.

Russia's war of aggression in Ukraine and its impact on the global economy could also have a negative impact on the MTU Group's business. The extensive economic sanctions imposed on Russia as a result of the war are holding back MTU's business development, especially with regard to stakes in commercial engine programs for a Russian system (Irkut MS-21 with the PW1400G-JM engine) and existing long-term contracts with Russian MRO customers. Moreover, they reduce the prospects of success of present and future OEM and MRO drives in Russia's sphere of influence. MTU unrestrictedly supports all sanction regulations and is in full compliance with them. Accordingly, the company has suspended all deliveries, data transfers and payment transactions in the region covered by the sanctions. Generally speaking, MTU has only very limited MRO business with customers in Russia and no presence in the region, so the risk to MTU resulting from direct economic relations can be considered low.

In addition to these direct effects, risks for MTU arise from the uncertainty about the supply of oil and gas and the disruption of global value-added and supply chains. Through proactive risk management, MTU has so far managed to mitigate most of the impact of high raw material prices and the high market volatility of non-energy raw materials. If the present tense situation on the commodity markets continues for a prolonged period, high raw material prices could adversely affect MTU's margins. The effects of inflation, driven by rising personnel and energy costs, have so far largely been avoided thanks to fixed-price agreements in long-term contracts. If prices continue to rise, the tension caused by procurement costs will gradually rise due to the application of price escalation clauses and the expiry of fixed prices. The Russian war of aggression in Ukraine has led to many global restrictions on industrial and logistics capacity. In view of this, MTU is exposed to a risk of delays or temporary disruption in its supply chain, which could also affect delivery obligations of the MTU Group that are exposed to penalties.

Irrespective of the current situation, MTU is already using a mixture of renewable and non-renewable energy and selects its energy resources on the basis of reliability of supply, cost efficiency and ecological considerations. A potential gas embargo by Russia would only have a slight impact on the operation of the company's production facilities because operations can be continued, with some site-specific constraints and/or projected compensatory measures, if the supply of gas is reduced. MTU drew up a contingency plan early on to ensure stepwise mitigation of possible cuts and fluctuations in the supply of natural gas and is actively utilizing all possibilities to reduce energy consumption throughout the Group, as well as continuously increasing the proportion of renewable energy.

Overall, the Russian war of aggression could have a negative impact on the incipient post-pandemic recovery of the aviation sector and could therefore affect the business performance of the MTU Group.

Over and above this, MTU currently sees the same potential risks as outlined in the Annual Report 2021. For further details of these risks, please refer to the Annual Report 2021, page 70 et seq. (Risk report).

Opportunities

MTU's business model, which focuses on the commercial engine business, military business and commercial maintenance, and its balanced product mix give it a good market position in each of its business areas. New opportunities arise from continuous investment in research, development and new technologies, strengthening risk- and revenue-sharing partnerships and extending the maintenance business.

Despite the effects of the Covid-19 pandemic and the disruption resulting from the geopolitical crisis in connection with Russia‘s war of aggression, MTU sees opportunities for all business areas. In the commercial engines business, the company sees opportunities to play an above-average part in the recovery and growth of the aircraft industry through its stake in efficient GTF engine technology. In the military engine programs, orders in connection with the European FCAS program, export campaigns and the replacement of existing engine fleets offer opportunities for additional sales and the related maintenance business. In the intermediate term, additional potential for the military business could come from the supplementary funding allocated for the German armed forces and the resulting increase in the defense budget, which could benefit MTU.

Over and above this, MTU currently sees the same potential opportunities as outlined in the Annual Report 2021. For a full overview of the opportunities, please refer to the Annual Report 2021, page 82 et seq. (Opportunity report).

Overall assessment of the risk and opportunity situation at MTU

Thanks to its extensive risk and opportunity management system, MTU is able to identify risk areas and potential opportunities at an early stage, so it can take suitable measures to actively manage and mitigate risks and exploit opportunities. There has only been marginal change in the MTU Group's risk and opportunity situation compared with the assessment as of December 31, 2021, and MTU still classifies its risk management system as effective to counter present and future challenges.

As a result of continued close monitoring of the effects of the Covid-19 pandemic and the impact of Russia‘s war of aggression, MTU considers that in the current situation it is well-placed to overcome the present challenges and has taken steps to emerge strengthened and well-positioned. In view of its continuously updated countermeasures, MTU considers that the risk position is manageable. From the present viewpoint, there is no threat to the survival of the MTU Group.

Report on material transactions with related parties

For information on the main transactions with related companies and individuals, please refer to *Note 38 to the condensed consolidated interim financial statements (“Related party disclosures”)*.

Condensed consolidated interim financial statements

Consolidated income statement

Consolidated income statement (unaudited)

in € million	(Note)	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Revenue	**(1.)**	**2,469**	**2,004**
Cost of goods sold	(2.)	-2,118	-1,714
Gross profit		**351**	**290**
Research and development expenses	(3.)	-47	-37
Selling expenses	(4.)	-83	-57
General administrative expenses	(5.)	-51	-46
Other operating income		17	24
Other operating expenses		-31	-38
Profit/loss of companies accounted for using the equity method	(7.)	27	31
Profit/loss of equity investments		0	1
Earnings before interest and taxes (EBIT)		**183**	**168**
Net interest income/expense	(8.)	-15	-15
Other financial income/expense	(9.)	-3	-7
Net financial income/expense		**-17**	**-22**
Earnings before income taxes		**166**	**146**
Income taxes	(10.)	-46	-43
Net income		**120**	**103**
thereof:			
Owners of MTU Aero Engines AG		119	101
Non-controlling interests		1	2
Earnings per share in €			
Basic (EPS)	(11.)	2.23	1.89
Diluted (DEPS)	(11.)	2.19	1.85

Consolidated statement of comprehensive income

Consolidated statement of comprehensive income (unaudited)

in € million	(Note)	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Net income		**120**	**103**
Translation differences arising from the financial statements of foreign entities		51	29
Financial instruments designated as cash flow hedges		-105	-49
Items that may subsequently be recycled to profit or loss		-54	-19
Actuarial gains and losses on pension obligations and plan assets		139	27
Changes in the fair value of equity investments			-6
Items that will not be recycled to profit or loss		139	21
Other comprehensive income after taxes	**(24.)**	**86**	**2**
Total comprehensive income		**206**	**105**
thereof:			
Owners of MTU Aero Engines AG		199	100
Non-controlling interests		7	5

Consolidated balance sheet – assets

Assets (unaudited)

in € million	(Note)	June 30, 2022	Dec. 31, 2021
Non-current assets			
Intangible assets	(14.)	1,136	1,128
Property, plant and equipment	(15.)	1,233	1,251
Financial assets accounted for using the equity method	(16.)	627	611
Other financial assets	(16.)	75	72
Acquired program assets, development work and other assets	(17.)	831	898
Deferred taxes		60	83
Total non-current assets		**3,962**	**4,043**
Current assets			
Inventories	(19.)	1,406	1,380
Trade receivables	(20.)	1,022	946
Contract assets	(21.)	1,152	897
Income tax receivables		79	89
Other financial assets	(16.)	256	177
Other assets	(17.)	34	50
Cash and cash equivalents	(23.)	733	722
Total current assets		**4,682**	**4,260**
Total assets		**8,645**	**8,304**

Consolidated balance sheet – equity and liabilities

Equity and liabilities (unaudited)

in € million	(Note)	June 30, 2022	Dec. 31, 2021
Equity	**(24.)**		
Subscribed capital		53	53
Capital reserves		529	529
Retained earnings		2,468	2,461
Treasury shares		–16	–17
Accumulated other comprehensive income		–266	–345
Owners of MTU Aero Engines AG		**2,768**	**2,681**
Non-controlling interests		74	79
Total equity		**2,842**	**2,760**
Pension provisions		701	905
Other provisions	(27.)	55	63
Financial liabilities	(28.)	1,515	1,437
Contract liabilities	(30.)	5	7
Other liabilities	(32.)	9	9
Deferred taxes			3
Total non-current liabilities		**2,284**	**2,424**
Current liabilities			
Pension provisions		44	44
Income tax liabilities		0	9
Other provisions	(27.)	141	173
Refund liabilities	(31.)	1,991	1,758
Financial liabilities	(28.)	260	226
Trade payables		320	165
Contract liabilities	(30.)	691	692
Other liabilities	(32.)	71	53
Total current liabilities		**3,518**	**3,119**
Total equity and liabilities		**8,645**	**8,304**

Consolidated statement of changes in equity

For information on the components of equity, please refer to Note 24 “Equity” in the selected explanatory notes to the financial statements.

Consolidated statement of changes in equity (unaudited)

	Sub-scribed capital	Capital reserves	Revenue reserves	Treasury shares	Accumulated other equity				**Owners of MTU Aero Engines AG**	Non-controlling interests	Total equity
in € million					Translation differences arising from the financial statements of foreign entities	Changes in the fair value of equity investments	Actuarial gains/losses[1]	Financial instruments designated as cash flow hedges			
Carrying amount as of Jan. 1, 2021	**53**	**508**	**2,298**	**-2**	**-32**	**13**	**-348**	**62**	**2,553**	**82**	**2,635**
Net income			101						101	2	103
Other comprehensive income					27	-6	27	-49	-1	2	2
Total comprehensive income			**101**		**27**	**-6**	**27**	**-49**	**100**	**5**	**105**
Dividend payment			-67						-67	-8	-75
Convertible bond 2016	0	8							8		8
Restricted Stock Plan		2		0					2		2
Employee stock option program (MAP)		7		17					23		23
Share buyback				-31					-31		-31
Carrying amount as of June 30, 2021	**53**	**525**	**2,332**	**-17**	**-5**	**6**	**-321**	**14**	**2,588**	**78**	**2,667**
Carrying amount as of Jan. 1, 2022	**53**	**529**	**2,461**	**-17**	**19**		**-321**	**-43**	**2,681**	**79**	**2,760**
Net income			119						119	1	120
Other comprehensive income					45		139	-105	79	6	86
Total comprehensive income			**119**		**45**		**139**	**-105**	**199**	**7**	**206**
Dividend payment			-112						-112	-12	-124
Investment by minority shareholders										0	0
Restricted Stock Plan		-0		0					0		0
Carrying amount as of June 30, 2022	**53**	**529**	**2,468**	**-16**	**64**		**-182**	**-148**	**2,768**	**74**	**2,842**

[1] Refers to pension obligations and plan assets

Consolidated cash flow statement

Consolidated cash flow statement (unaudited)

in € million	(Note)	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Operating activities			
Net income		**120**	**103**
Non-cash amortization (including impairment) of acquired program assets and development work		85	23
Depreciation/appreciation, amortization and impairment of non-current assets		121	111
Profit/loss of companies accounted for using the equity method	(7.)	-27	-31
Profit/loss of equity investments		-0	-1
Gains/losses on the disposal of assets		-0	0
Change in pension provisions		2	-1
Change in other provisions	(27.)	-40	2
Change in refund liabilities (not included in working capital)	(31.)	139	-42
Change in working capital		-168	78
Other non-cash items		32	19
Interest result	(8.)	15	15
Interest paid		-8	-25
Interest received		1	1
Dividends received		50	46
Income taxes	(10.)	46	43
Income taxes paid		-46	-57
Cash flow from operating activities		**318**	**283**
Investing activities			
Capital expenditure on:			
Intangible assets	(14.)	-27	-52
Property, plant and equipment	(15.)	-93	-81
Financial assets	(16.)	-19	-1
Acquired program assets and development assets	(17.)	-24	-9
Proceeds from disposal of:			
Intangible assets/property, plant and equipment	(14.)/(15.)	2	18
Consolidated subsidiaries	(16.)		1
Other financial assets		7	0
Cash flow from investing activities		**-155**	**-123**
Financing activities			
Cash outflow from other bonds and notes	(28.)	-0	-100
Settlement of lease liabilities	(28.)	-27	-17
Repayment of other financial liabilities	(28.)		-30
Dividend paid to shareholders of MTU AG/ to non-controlling interests		-124	-75
Settlement of purchase price liabilities for stakes in programs	(28.)	-11	-8
Sale of treasury shares under the employee stock option program (MAP)/Restricted Stock Plan		0	23
Share buyback	(28.)		-31
Increase in other financial liabilities	(28.)	4	2
Cash flow from financing activities		**-158**	**-236**
Net change in cash and cash equivalents during the period		**6**	**-76**
Effect of translation differences on cash and cash equivalents		6	2
Cash and cash equivalents at beginning of the year (January 1)		722	773
Cash and cash equivalents at end of period (June 30)		**733**	**698**
thereof: presented as cash and cash equivalents		733	695
thereof: presented as part of disposal groups of assets (IFRS 5)			3

Notes to the interim consolidated financial statements

Consolidated segment report

Segment information

For information on the activities of the individual operating segments, please refer to the notes in the Annual Report 2021, page 200 et seq. There was no change in the segmentation in the first six months of 2022.

The segment information is as follows:

Consolidated segment report

in € million	Commercial and military engine business (OEM) Jan. 1 - June 30, 2022	Commercial and military engine business (OEM) Jan. 1 - June 30, 2021	Commercial maintenance business (MRO) Jan. 1 - June 30, 2022	Commercial maintenance business (MRO) Jan. 1 - June 30, 2021	Total reportable segments Jan. 1 - June 30, 2022	Total reportable segments Jan. 1 - June 30, 2021	Consolidation/ reconciliation Jan. 1 - June 30, 2022	Consolidation/ reconciliation Jan. 1 - June 30, 2021	MTU Group Jan. 1 - June 30, 2022	MTU Group Jan. 1 - June 30, 2021
External revenues	778	678	1,691	1,326	2,469	2,004			2,469	2,004
Revenues from intersegment sales	32	24	19	26	51	50	–51	–50		
Total revenues	**810**	**701**	**1,711**	**1,352**	**2,520**	**2,054**	**–51**	**–50**	**2,469**	**2,004**
Gross profit	**182**	**178**	**169**	**113**	**351**	**291**	**–0**	**–1**	**351**	**290**
Amortization	21	20	3	3	24	23			24	23
Non-cash amortization of capitalized program assets and acquired development work	24	23			24	23			24	23
Depreciation	56	55	37	33	93	88			93	88
Impairment losses	65				65				65	
Total depreciation/amortization/ impairment losses	**166**	**98**	**40**	**36**	**207**	**134**			**207**	**134**
Earnings before interest and taxes (EBIT)	**67**	**92**	**116**	**76**	**183**	**168**	**0**	**–0**	**183**	**168**
thereof: special item depreciation/ amortization effect of purchase price allocation	9	9	1	1	10	10			10	10
thereof: special item increase in the stake in IAE-V2500	12	11			12	11			12	11
thereof: special item impairment losses Russia/Ukraine	53		8		61				61	
thereof: special item impairment losses on program assets	24				24				24	
Adjusted earnings before interest and taxes (adjusted EBIT)	**165**	**113**	**124**	**77**	**289**	**190**	**0**	**–0**	**290**	**190**
Profit/loss of companies accounted for using the equity method	4	13	24	18	27	31			27	31
Carrying amount of companies accounted for using the equity method (June 30, 2022/Dec. 31, 2021)	322	339	305	272	627	611			627	611
Assets (June 30, 2022/Dec. 31, 2021)	**7,482**	**7,189**	**2,613**	**2,515**	**10,095**	**9,704**	**–1,451**	**–1,400**	**8,645**	**8,304**
Liabilities (June 30, 2022/Dec. 31, 2021)	**5,026**	**4,729**	**1,886**	**1,877**	**6,912**	**6,606**	**–1,110**	**–1,063**	**5,803**	**5,543**
Material non-cash items	**16**	**17**	**15**	**1**	**32**	**19**			**32**	**19**
Capital expenditure:										
Intangible assets	27	25	1	27	28	52			28	52
Property, plant and equipment	41	45	61	50	102	95			102	95
Acquired program assets and development assets	24	1			24	1			24	1
Total capital expenditure	**92**	**72**	**62**	**77**	**155**	**149**			**155**	**149**
Key segment data:										
EBIT in % of revenues	8.3	13.1	6.8	5.6	7.3	8.2	–0.9	0.2	7.4	8.4
Adjusted EBIT in % of revenues	20.4	16.0	7.3	5.7	11.5	9.2	–0.9	0.2	11.7	9.5

The material non-cash items relate, in particular, to gains and losses arising from foreign currency translation, which have no impact on cash flows.

Reconciliation to MTU consolidated earnings before tax

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Earnings before interest and taxes (EBIT)	**183**	**168**
Interest income	1	1
Interest expenses	-15	-16
Other financial income/expense	-3	-7
Earnings before income taxes	**166**	**146**

Accounting principles and policies

MTU Aero Engines AG, Munich, together with its consolidated companies, is a manufacturer of engine modules and components as well as a provider of maintenance services for commercial aircraft engines.

The Group's business activities encompass the entire lifecycle of an engine program – from development, structural design, testing and manufacturing of engines and spare parts through to maintenance, repair and overhaul. MTU's business activities are divided into two operating segments: the commercial and military engine business (OEM) and the commercial maintenance business (MRO).

MTU's commercial and military engine business covers the development and manufacturing of modules, components and spare parts for engine programs, and in some cases final assembly. The military engine business additionally includes the provision of maintenance services. The commercial maintenance segment comprises maintenance, repair and overhaul as well as logistics support for commercial engines.

The parent company, MTU Aero Engines AG, with registered office at Dachauer Strasse 665, 80995 Munich, Germany, is registered under reference HRB 157206 in the commercial registry of the district court of Munich.

The condensed consolidated interim financial statements were approved for publication by the Executive Board of MTU Aero Engines AG, Munich, on July 25, 2022.

Financial reporting

In accordance with the provisions of Section 115 of the German Securities Trading Act (WpHG), the half-year financial report of MTU comprises condensed consolidated interim financial statements, an interim Group management report and a responsibility statement. The condensed, unaudited consolidated interim statements were prepared in accordance with the International Financial Reporting Standards (IFRSs) for interim reporting, as applicable in the EU, and the interim Group management report was prepared in accordance with the applicable regulations of the German Securities Trading Act (WpHG).

Statement of compliance

The condensed consolidated interim financial statements as of June 30, 2022, have been prepared in accordance with International Accounting Standard (IAS) 34 "Interim Financial Reporting." MTU applied all International Financial Reporting Standards (IFRSs) issued by the International Accounting Standards Board (IASB) that were in effect at the time when the condensed consolidated interim financial statements were prepared and had been endorsed by the European Commission for use in the EU.

The same accounting policies were applied in the condensed consolidated interim financial statements as in the consolidated financial statements as of December 31, 2021. All amounts are stated in millions of euros (€ million), unless otherwise specified. Due to rounding, some of the rounded figures presented in these consolidated financial statements may not correspond exactly to the sum of the individual figures, and it may not be possible to calculate some of the individual percentages from the rounded absolute figures presented. "0" represents amounts of between zero and half a million euros, while "-0" represents amounts between zero and minus half a million euros. Amounts of exactly €0.00 are shown by an empty field in tables.

The condensed interim consolidated financial statements do not contain all information and disclosures required for consolidated financial statements at the end of the fiscal year so they should be read in conjunction with the consolidated financial statements of MTU as of December 31, 2021.

In the opinion of the management, the half-year financial report contains all customary ongoing accounting adjustments that are necessary for a fair presentation of the results of operations, financial position and net assets of the MTU Group. The accounting policies used for the consolidated financial statements are explained in the notes to the consolidated financial statements as of December 31, 2021, starting on page 128.

Consolidated group

As of June 30, 2022, the Group including MTU Aero Engines AG, Munich, comprised 34 companies.

Estimation uncertainties

The approach to estimation uncertainties is essentially based on the principles outlined in the Annual Report 2021, page 138 et seq. In the event of deviations, these are presented in the relevant note.

Notes to the consolidated income statement

1. Revenue

Revenues

in € million	Revenue recognized at a point in time	Revenue recognized over time	Jan. 1 - June 30, 2022	Revenue recognized at a point in time	Revenue recognized over time	Jan. 1 - June 30, 2021
Commercial engine business	596		596	515		515
Military engine business	149	64	213	120	67	187
Commercial and military engine business (OEM)	**746**	**64**	**810**	**634**	**67**	**701**
Commercial maintenance business (MRO)	**88**	**1,622**	**1,711**	**58**	**1,294**	**1,352**
Consolidation	-32	-19	-51	-24	-26	-50
Total revenue	**802**	**1,667**	**2,469**	**668**	**1,336**	**2,004**

2. Cost of goods sold

Cost of goods sold

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Cost of materials	-1,578	-1,234
Personnel expenses	-400	-362
Depreciation and amortization	-170	-107
Other cost of goods sold	-8	-33
Capitalized development costs	37	23
Total cost of goods sold	**-2,118**	**-1,714**

In the first six months of 2022, the cost of goods sold rose proportionately to revenue. The cost of goods sold includes asset impairments of €40 million in connection with the war in Ukraine (January through June 2021: €0 million) and further impairment losses of €18 million on the T408 engine (January through June 2021: €0 million).

The impairment losses in connection with the war in Ukraine relate to the termination or dissolution of contractual relations in favor of Russian markets and the loss of assets in Russia.

The impairment losses in connection with the stake in the GE T408 engine program, which is used in the Sikorsky CH-53K cargo helicopter, are mainly due to recent decisions by military authorities, including the German armed forces, in favor of alternative cargo helicopters.

The gross profit totaled €351 million in the first six months, which was €61 million (20.9%) higher than in the prior-year period. The increase was mainly due to the positive business performance of the MRO segment. By contrast, the business development in the OEM segment, which was also positive, was almost completely offset by the aforementioned impairment losses on assets. Compared with the first half of 2021, the reporting period was dominated by normalization from the pandemic-induced operation of the business.

In addition to the positive business performance, the development of gross profit in the segments was driven by the realized product mix (OEM and MRO) and, in the OEM segment, the development of margins on the GTF engine programs in both the series and after-sales business, and the development of the U.S. dollar exchange rate in the first six months. In particular, the exchange rate supported revenue accruals for goods and services, but also had considerable downside valuation effects, especially on the measurement of obligations in connection with stakes in commercial engine programs (OEM). In the first six months, the gross profit was also driven by the update of carrying amounts of invoice corrections in liabilities, especially from participation in warranty risks of consortia (risk and revenue sharing) and maintenance contracts for commercial engine programs (OEM), which require regular estimates of the underlying obligations.

3. Research and development expenses

Research and development expenses

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Cost of materials	-25	-22
Personnel expenses	-21	-14
Depreciation and amortization	-1	-1
Other development costs	-0	-1
Capitalized development costs		0
Research and development costs recognized as expense	**-47**	**-37**

4. Selling expenses

Selling expenses

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Cost of materials	-14	-10
Personnel expenses	-39	-39
Depreciation and amortization	-1	-1
Other selling expenses	-29	-7
Total selling expenses	**-83**	**-57**

Alongside marketing and advertising expenses, the selling expenses contain impairments and loss allowances of receivables from customers, which are included in other selling expenses.

The other selling expenses include asset impairments of €11 million for credit risks in connection with the war in Ukraine (January through June 2021: €0 million).

5. General administrative expenses

General administrative expenses

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Cost of materials	-5	-4
Personnel expenses	-37	-34
Depreciation and amortization	-2	-2
Other administrative expenses	-8	-6
Total general administrative expenses	**-51**	**-46**

General administrative expenses are expenses incurred in connection with administrative activities that cannot be directly allocated to development, production or sales activities.

7. Profit/loss of companies accounted for using the equity method

Profit/loss of companies accounted for using the equity method

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Associated companies	4	13
Joint ventures	23	19
Profit/loss of companies accounted for using the equity method	**27**	**31**

8. Net interest income/expense

Net interest income/expense

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Interest income	**1**	**1**
Interest expense:		
Bonds and notes	-10	-10
Convertible bonds	-2	-2
Liabilities to banks	-0	-0
Lease liabilities	-2	-2
Other interest expense	-2	-3
Capitalized borrowing costs for qualifying assets	1	2
Interest expense	**-15**	**-16**
Net interest income/expense	**-15**	**-15**

9. Other financial income/expense

Other financial income/expense

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Effects of currency translation: exchange rate gains/losses on:		
Currency holdings	8	3
Financing transactions	4	-0
Lease liabilities	-5	-2
Fair value gains/losses on derivatives		
Currency derivatives	-1	-1
Commodity forwards	-1	1
Interest included in measurement of assets and liabilities		
Pension obligations and plan assets	-5	-3
Receivables, other provisions and liabilities	-1	-3
Miscellaneous other financial income/expense	-1	-0
Other financial income/expense	**-3**	**-7**

10. Income taxes

Analysis of current and deferred income taxes

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Current income taxes	-49	-20
Deferred income taxes	2	-23
Income tax expense	**-46**	**-43**

11. Earnings per share

To determine diluted earnings per share, the average number of common shares that could potentially be issued through the granting of equity instruments in connection with financial instruments outstanding as of the reporting date is added to the weighted average number of outstanding shares.

In the first six months of 2022, the net income attributable to the shareholders of MTU Aero Engines AG was €119 million (January through June 2021: €101 million). The weighted average number of outstanding shares in the period January through June 2022 was 53,356,240 (January through June 2021: 53,307,744 shares). This results in basic earnings per share of €2.23 in the first six months of 2022 (January through June 2021: €1.89).

Diluted earnings per share were €2.19 (January through June 2021: €1.85). Diluting effects arose from 1,709,706 shares that could potentially be issued through the convertible bonds issued in May 2016 and in September 2019.

12. Reconciliation from EBIT to adjusted EBIT

Taking into account the non-recurring effects of depreciation and amortization of the purchase price allocation (PPA), the increase in the stake in the IAE-V2500 program, the accrual in 2022 of asset impairments relating to the stake in the T408 engine program and asset impairments in connection with the war in Ukraine, the following reconciliation gives the performance indicator "Adjusted earnings before interest and tax (adjusted EBIT)":

Reconciliation of EBIT to adjusted EBIT, depreciation/amortization expense and non-recurring items

in € million	Jan. 1 - June 30, 2022	Jan. 1 - June 30, 2021
Earnings before interest and taxes (EBIT)	**183**	**168**
thereof: special item depreciation/ amortization effect of purchase price allocation	10	10
thereof: special item increase in the stake in V2500	12	11
thereof: special item impairment losses Russia/ Ukraine	61	
thereof: special item impairment losses on program assets	24	
Adjusted earnings before interest and taxes (adjusted EBIT)	**290**	**190**

The one-time impact of impairments in connection with Russia/Ukraine mainly comprises impairment losses of €44 million (January through June 2021: €0 million) on the stake in the PW1400G-JM engine program and the related reduction in the value of inventories and additional refund liabilities in connection with this engine. The remaining expenses of €17 million attributable to the war in Ukraine (January through June 2021: €0 million) comprise various impairment losses on program assets and loss allowances for receivables and engines in connection with the termination or dissolution of contractual relations with Russian markets and the loss of assets in Russia.

Notes to the consolidated balance sheet

14. Intangible assets

The intangible assets are program-independent technologies, development assets, technical software and acquired goodwill.

In the first six months of 2022, intangible assets amounting to €28 million were recognized (January through June 2021: €52 million). These included self-created development assets and related borrowing costs of €26 million (January through June 2021: €24 million).

Amortization of intangible assets was €27 million in the first six months of 2022 (January through June 2021: €23 million), including impairment losses of €3 million (January through June 2021: €0 million).

15. Property, plant and equipment

In the period from January 1 to June 30, 2022, additions to property, plant and equipment amounted to €102 million (January through June 2021: €95 million) and mainly comprised self-created development assets, operational and office equipment and the corresponding prepayments. Depreciation of property, plant and equipment was €94 million in the first six months of 2022 (January through June 2021: €88 million).

16. Financial assets

Financial assets accounted for using the equity method

The financial assets accounted for using the equity method are described in the Annual Report 2021, page 152 et seq.

Other financial assets

Breakdown of other financial assets

	Total		Non-current		Current	
in € million	June 30, 2022	Dec. 31, 2021	June 30, 2022	Dec. 31, 2021	June 30, 2022	Dec. 31, 2021
Financial assets measured at purchase cost	**326**	**234**	**71**	**60**	**255**	**174**
Loans to third parties[1]	67	56	67	56		
Receivables from employees	2	1	0		2	1
Receivables from suppliers	11	11			11	11
Miscellaneous other financial assets	246	166	3	3	243	163
Financial assets measured at fair value through other comprehensive income	**4**	**7**	**4**	**7**		
Other interests in related companies	4	7	4	7		
Derivatives without hedging relationship	**2**	**2**	**1**	**0**	**1**	**1**
Derivatives with hedging relationship		**6**		**5**		**1**
Total other financial assets	**332**	**250**	**75**	**72**	**256**	**177**

[1] Included in net financial debt

The increase in other financial assets was driven principally by the accrual of compensation payment components to the consortia leaders (OEM) for maintenance and repair business for stakes in commercial OEM engine programs.

As of the reporting date, there was no relevant need to recognize impairment losses for other financial assets, especially for sales financing arrangements recognized in loans to third parties, mainly due to the existence of compensatory means of security.

17. Acquired program assets, development work and other assets

In the first six months of 2022, MTU spent €12 million (previous year: €1 million) on the acquisition of program assets. The total amount of acquired program assets recognized in profit or loss in the reporting period was €19 million (January through June 2021: €19 million).

MTU acquired development assets amounting to €12 million in the first six months of 2022 (January through June 2021: €0 million). In the reporting period, compensation payments for development work in an amount of €5 million (January through June 2021: €4 million) paid to consortia leaders (OEM) were offset against revenue. Further, impairment losses of €62 million (January through June 2021: €0 million) were recognized on acquired development assets related to the PW1400G-JM engine program (€38 million) and the T408 engine program (€24 million) as a result of impairment testing due to indications of impairment, as prescribed by IAS 36.

As well as claims to tax refunds, the other assets include prepaid maintenance charges, insurance premiums and rents.

19. Inventories

Inventories

in € million	June 30, 2022	Dec. 31, 2021
Raw materials and supplies	653	638
Work in progress	492	377
Finished goods	243	209
Advance payments	18	15
Total inventories	**1,406**	**1,239**

20. Trade receivables

Trade receivables

in € million	June 30, 2022	Dec. 31, 2021
Third parties	509	466
Related companies	512	480
Total trade receivables	**1,022**	**946**

21. Contract assets

A contract asset is a contractual right to consideration from customers because contractual performance obligations have already been satisfied but for which there is not yet an unconditional right to payment. The changes in the reporting period result from the business performance and, in particular, the change in the U.S. dollar exchange rate from U.S.$1.13 per €1 at year-end 2021 to U.S.$1.04 per €1 as of June 30, 2022.

23. Cash and cash equivalents

The cash and cash equivalents comprise cash in hand and bank balances. This item also includes foreign-currency holdings with an equivalent value of €60 million (December 31, 2021: €98 million).

24. Equity

Changes in equity are presented in the consolidated statement of changes in equity.

The company's subscribed capital (capital stock) is unchanged at €53 million and is divided into 53 million non-par-value registered shares.

The capital reserves contain premiums from the issue of shares and the equity component (net of proportional transaction costs and taxes) of the bond issued in 2007 and redeemed or converted in 2012, the convertible bond issued in 2016, which was partially redeemed in 2019, and the convertible bond issued in 2019.

A total of 53,356,799 shares in MTU Aero Engines AG, Munich, were in circulation as of June 30, 2022 (June 30, 2021: 53,318,661 shares). The company held 79,249 treasury shares as of June 30, 2022 (June 30, 2021: 80,088 shares).

In the first six months of 2022, no shares were repurchased under the authorization of the Annual General Meeting of April 11, 2019 (May 2021: 150,000 shares repurchased) to realize the employee stock option program or the restricted stock plan.

27. Other provisions

The other provisions take account of obligations arising from warranty and liability risks, personnel obligations and invoices not yet received. The €40 million decrease in other provisions to €196 million results mainly from the utilization of provisions for personnel obligations for bonuses and one-time payments.

28. Financial liabilities

Financial liabilities

	Total		Non-current		Current	
in € million	June 30, 2022	Dec. 31, 2021	June 30, 2022	Dec. 31, 2021	June 30, 2022	Dec. 31, 2021
Bonds and notes	610	604	595	595	15	9
Convertible bonds	531	529	531	529	0	0
Financial liabilities arising from increased or new stakes in engine programs	144	142	124	107	21	35
Financial liabilities to related companies	4	0			4	0
Lease liabilities	138	176	100	108	37	68
Total gross financial debt	**1,427**	**1,451**	**1,350**	**1,338**	**77**	**113**
Derivatives without hedging relationship	2		1		2	
Derivatives with hedging relationship	203	58	99	30	104	28
Personnel-related financial liabilities	99	111	65	69	34	41
Miscellaneous other financial liabilities	44	44	0		43	44
Total other financial liabilities	**347**	**212**	**165**	**99**	**183**	**113**
Total financial liabilities	**1,775**	**1,663**	**1,515**	**1,437**	**260**	**226**

Bonds and notes

For full details of the registered bond with a nominal value of €100 million and the corporate bond with a nominal value of €500 million, please refer to the Annual Report 2021, page 167.

Convertible bonds

On May 17, 2016, MTU Aero Engines AG issued a senior unsecured convertible bond with a total nominal value of €500 million. This bond is convertible into new and/ or existing registered non-par-value shares in the issuing company. Due to partial redemption in 2019 and conversions since then, the remaining nominal value is €48 million.

Furthermore, in 2019, MTU Aero Engines AG issued a senior unsecured convertible bond with a total nominal value of €500 million. This bond is convertible into non-par-value common shares in MTU from September 18, 2024.

For a full description of the convertible bonds, please refer to the Annual Report 2021, page 167 et seq.

Financial liabilities arising from increased or new stakes in engine programs

Financial liabilities arising from the increase in the stake in IAE-V2500

The increase in MTU's stake in the V2500 engine program by 5 percentage points to 16% in 2012 included a deferred payment component contingent upon the number of flight hours performed over the next 15 years.

Other financial liabilities arising from the acquisition of stakes in programs

The other financial liabilities arising from the acquisition of stakes in programs mainly relate to program lifetime-related payments for the acquisition of shares in Pratt & Whitney and GE commercial engine programs, which are deemed to represent financing transactions in view of their long-term nature.

Revolving credit facility

The €600 million revolving credit facility concluded with five banks, which would run until October 28, 2023, was replaced ahead of schedule by a new €500 million revolving credit facility with now nine banks. This credit facility has a term of five years, ending on June 29, 2027, and can be extended twice by one year in each case at the company's request.

Any credit utilized is subject to interest at the customary market reference rates plus an additional margin. Unused credit facilities are subject to a loan commitment fee.

Lease liabilities

Lease liabilities relate to liabilities under leases recognized using the effective interest rate method.

For a description of the main leased items, please refer to the Annual Report 2021, page 151 et seq. and page 191 et seqq.

Liabilities from derivatives

The derivatives of €205 million with and without hedging relationship recognized as financial liabilities as of the reporting date (December 31, 2021: €58 million) are used to offset currency and commodity price risks. The increase in liabilities is mainly attributable to a negative development of the fair value of forward foreign exchange contracts due to the development of the U.S. dollar exchange rate as of the reporting date relative to the agreed hedging rates.

Personnel-related financial liabilities

The personnel-related financial liabilities mainly comprise entitlements to pension capital totaling €66 million (December 31, 2021: €78 million) resulting from direct commitments through the company pension plan, claims to vacation pay, Christmas pay and collectively agreed one-time payments totaling €15 million (December 31, 2021: €0 million), claims of €9 million (December 31, 2021: €12 million) arising from the employee stock option program (MAP) and the long-term incentive plan (LTI), and granted claims arising from restructuring measures of €2 million (December 31, 2021: €15 million).

Miscellaneous other financial liabilities

The miscellaneous other financial liabilities of €44 million (December 31, 2021: €44 million) contain customer credits of €15 million (December 31, 2021: €18 million) and a large number of minor individual obligations.

30. Contract liabilities

The contract liabilities contain advance payments for the delivery of engine modules and components and for maintenance and repair services.

Where there are corresponding contract assets, these are offset in accordance with IFRS 15. In the reporting period, contract liabilities amounting to €241 million (December 31, 2021: €183 million) were offset against the corresponding contract assets.

31. Refund liabilities

Refund liabilities

	Total		Non-current		Current	
in € million	June 30, 2022	Dec. 31, 2021	June 30, 2022	Dec. 31, 2021	June 30, 2022	Dec. 31, 2021
Warranty und liability risks	251	269	0	0	251	269
Invoice corrections / Subsequent costs	1,740	1,489	0	0	1,740	1,489
Total refund liabilities	**1,991**	**1,758**	**0**	**0**	**1,991**	**1,758**

The refund liabilities for warranty and liability risks correspond to the compensation obligations due to the consortium leader (OEM) or program company as a result of defective workmanship, and the share of the expenses of the engine program under risk- and revenue-sharing models for commercial engine programs. The decline in the reporting period corresponds primarily to the invoicing of the corresponding items by the consortia leaders (OEM) within the respective engine consortia and updating of the valuation estimates for the corresponding obligations. Inversely, the increase in the obligations due to the change in the U.S. dollar exchange rate has to be taken into account.

The refund liabilities for invoice corrections/subsequent costs relate primarily to retroactive adjustments to the prices in contracts with customers, for which retroactive price corrections are carried out regularly in keeping with the invoicing practices for commercial engine program shares. Settlement of these price corrections was still outstanding as of the reporting date. Another significant portion of these liabilities comprises marketing expenses for commercial engine programs for which a final invoice has not yet been issued by the consortium leader (OEM) but which already lead to revenue reductions. The increase in the reporting period corresponds to the sharp rise of operating business as of the reporting date and, in connection with this, outstanding charging of program expenses for commercial series and after-sales business, as well as the development of the U.S. dollar exchange rate.

32. Other liabilities

Other liabilities

in € million	Total June 30, 2022	Total Dec. 31, 2021	Non-current June 30, 2022	Non-current Dec. 31, 2021	Current June 30, 2022	Current Dec. 31, 2021
Personnel-related liabilities						
Social security	1	1			1	1
Other personnel-related liabilities	48	23			48	23
Other tax liabilities	22	24			22	24
Miscellaneous other liabilities	10	14	9	9	1	4
Total other liabilities	**81**	**62**	**9**	**9**	**71**	**53**

Personnel-related liabilities

The other personnel-related liabilities are mainly due to employees' unused vacation entitlements and flextime credits.

Other tax liabilities

The tax liabilities of €22 million (December 31, 2021: €24 million) relate to payable wage and church taxes and transactional taxes in Germany and other countries.

33. Additional disclosures relating to financial instruments

Carrying amounts, measurement / recognition methods and fair values

The following tables present the carrying amounts of financial instruments, regardless whether the instruments fall within the scope of IFRS 7 or IFRS 9. In addition, the carrying amounts are compared to the fair values.

Disclosures relating to financial instruments
Carrying amounts, measurement/recognition methods and fair values as of June 30, 2022

in € million	Carrying amount June 30, 2022	Amount carried in balance sheet: Measured at amortized cost	Amount carried in balance sheet: Fair value through other comprehensive income	Amount carried in balance sheet: Fair value through profit or loss	Amount carried in balance sheet IFRS 16	Financial instruments not within the scope of IFRS 9 or IFRS 7	Total	Fair value as of June 30, 2022
ASSETS								
Financial assets								
Loans and receivables	326	322				3	326	326
Other interests in related companies	4		4				4	4
Trade receivables	1,022	1,022					1,022	1,022
Derivative financial assets								
Derivatives without hedging relationship	2			2			2	2
Derivatives with hedging relationship								
Cash and cash equivalents	733	733					733	733
EQUITY AND LIABILITIES								
Refund liabilities	1,991	1,991					1,991	1,991
Trade payables	320	320					320	320
Financial liabilities								
Bonds and notes	610	610					610	589
Convertible bonds (2016 and 2019)	531	531					531	482
Financial liabilities arising from increased or new stakes in engine programs	144	144					144	142
Financial liabilities to related companies	4	4					4	4
Lease liabilities	138				138		138	138
Derivative financial liabilities								
Derivatives without hedging relationship	2			2			2	2
Derivatives with hedging relationship	203		203				203	203
Other financial liabilities	142	44				99	142	142

Disclosures relating to financial instruments
Carrying amounts, measurement/recognition methods and fair values as of Dec. 31, 2021

in € million	Carrying amount Dec. 31, 2021	Amount carried in balance sheet			Amount carried in balance sheet IFRS 16	Financial instruments not within the scope of IFRS 9 or IFRS 7	Total	Fair value as of Dec. 31, 2021
		Measured at amortized cost	Fair value through other comprehensi-ve income	Fair value through profit or loss				
ASSETS								
Financial assets								
Loans and receivables	234	231				3	234	234
Other interests in related companies	7		7				7	7
Trade receivables	946	946					946	946
Derivative financial assets								
Derivatives without hedging relationship	2			2			2	2
Derivatives with hedging relationship	6		6				6	6
Cash and cash equivalents	722	722					722	722
EQUITY AND LIABILITIES								
Refund liabilities	1,758	1,758					1,758	1,758
Trade payables	165	165					165	165
Financial liabilities								
Bonds and notes	604	604					604	659
Convertible bonds (2016 and 2019)	529	529					529	543
Financial liabilities arising from increased or new stakes in engine programs	142	142					142	147
Financial liabilities to related companies	0	0					0	0
Lease liabilities	176				176		176	176
Derivative financial liabilities								
Derivatives with hedging relationship	58		58				58	58
Other financial liabilities	154	44				111	154	154

The financial assets and liabilities carried at amortized cost contain cash and cash equivalents, trade receivables, other receivables, trade payables and other liabilities which are generally due within a relatively short time. The carrying amounts of these assets and liabilities therefore correspond approximately to their fair value at the reporting date.

The fair value of the financial assets and liabilities measured at fair value was derived from stock market prices or, alternatively, using a discounted cash flow method.

Classification of fair value measurements of financial assets and liabilities according to the fair value hierarchy

To take account of the relevance of the estimated parameters used in the measurement of financial assets and liabilities measured at fair value, MTU's financial assets and liabilities are allocated to three levels.

The three levels of the fair-value hierarchy are described below, together with their utilization when measuring financial assets and liabilities:

Level 1 Quoted prices in active markets for identical assets or liabilities (unadjusted input);

Level 2 Prices of assets or liabilities that can be observed directly or indirectly (derived);

Level 3 Unobservable inputs used to measure prices of assets or liabilities.

The convertible bonds (2016 and 2019), which are traded on the stock exchange and are carried at amortized cost, and the corporate bond were assigned to Level 1, the equity investments carried at fair value through other comprehensive income were assigned to Level 3, and all other qualifying financial instruments were assigned to Level 2.

The following tables show the allocation of financial assets and liabilities measured at fair value to the three levels of the fair value hierarchy for 2022 and 2021:

Classification within the fair-value hierarchy as of June 30, 2022

in € million	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Derivative financial instruments		2		2
Other interests in related companies			4	4
Total financial assets		**2**	**4**	**6**
Financial liabilities measured at fair value				
Derivative financial instruments		205		205
Total financial liabilities		**205**		**205**

Classification within the fair-value hierarchy for fiscal year 2021

in € million	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Derivative financial instruments		8		8
Other interests in related companies			7	7
Total financial assets		**8**	**7**	**15**
Financial liabilities measured at fair value				
Derivative financial instruments		58		58
Total financial liabilities		**58**		**58**

The fair value of the derivative financial instruments and securities assigned to Level 2 is measured using a discounted cash flow (DCF) method. Equity investments, which are allocated to Level 3, are also measured using a DCF method based on internal planning figures. The discount rate is calculated using both internal planning data and available market data.

Within the scope of its participation in consortia for commercial engine programs, MTU is a party to aircraft financing agreements for the purpose of promoting sales. In principle, such commitments are made jointly with other members of engine consortium in favor of the consortium leader (OEM). They are provided in two basic forms: predelivery payments (PDP) and backstop commitments. In both cases, any funds made available to the purchaser are always transferred directly to the aircraft manufacturer solely by the consortium leader (OEM).

MTU classifies loan commitments granted up to the reporting date totaling a nominal amount, translated into euros, of €790 million (December 31, 2021: €746 million) as part of its gross liquidity risk in accordance with the requirements of IFRS 7. However, based on experience, it is considered to be very unlikely that all these nominal loan amounts will actually be utilized to their full extent. In the event that they are utilized, MTU considers the associated liquidity and credit risks to be manageable. For further explanations, especially of the structure of financing offers, please refer to the Annual Report 2021, page 178.

In addition, as of the reporting date, there were unutilized financing commitments for equity investments in the form of capital contributions or shareholder loans totaling €147 million (December 31, 2021: €136 million).

37. Contingent liabilities and other financial obligations

As of June 30, 2022, contingent liabilities amounted to €197 million (December 31, 2021: €207 million).

The contingent liabilities and other financial obligations are not significant for MTU's financial position. In the reporting period, as in previous periods, no amounts were due and payable. No material claims are expected in the 2022 fiscal year. For information and disclosures regarding the composition of contingent liabilities and other financial obligations, please refer to the Annual Report 2021, page 195.

Purchase commitments for intangible assets and property, plant and equipment amounted to €164 million as of June 30, 2022 (December 31, 2021: €125 million).

38. Related party disclosures

Related companies

Transactions between Group companies and joint ventures or associates were, without exception, entered into in the normal course of business and on an arm's length basis.

Transactions between consolidated companies were fully eliminated in the consolidated financial statements and are therefore not disclosed separately in this Note.

Business with related companies

In the reporting period, intragroup transactions involving the supply of goods and services were conducted by Group companies as part of their normal operating activities (e.g., development, repairs, assembly, IT support).

Receivables from these companies were €512 million as of June 30, 2022 (December 31, 2021: €480 million). Liabilities were €64 million (December 31, 2021: €3 million). Income was €1,224 million in the first six months of 2022 (January through June 2021: €996 million). Expenses were €672 million (January through June 2021: €593 million).

Related persons

No Group companies entered into any material transactions with members of the Group's Executive Board or Supervisory Board or with any other individuals in key management positions, or with companies of whose governing or supervisory bodies these individuals are members. The same applies to close members of the families of those individuals.

Members of the Executive Board

In agreement with the Supervisory Board, Reiner Winkler, CEO of MTU Aero Engines AG, is stepping down from his post at year-end 2022 for personal reasons. This was agreed jointly at the Supervisory Board meeting on May 4, 2022. His appointment as CEO was due to end on September 30, 2024. The Supervisory Board unanimously appointed Lars Wagner, Chief Operating Officer of MTU, as the future CEO of MTU with effect from January 1, 2023.

Events after the reporting date (June 30, 2022)

There were no events of specific importance with a significant impact on the net assets, financial position and results of operations of the MTU Group between the interim reporting date and the adoption of this half-year financial report on July 25, 2022.

Publication of the half-year financial report

The half-year financial report of MTU Aero Engines AG, Munich, for the period from January 1 through June 30, 2022, has been published on the internet (www.mtu.de).

Responsibility statement

We hereby affirm that, to the best of our knowledge, the condensed consolidated interim financial statements of the MTU Group present a true and fair view of the net assets, financial position and results of operations in accordance with the applicable financial reporting standards, and that the interim Group management report provides a faithful and accurate review of the operating performance of the MTU Group, including its business performance and its position, and outlines the significant opportunities and risks of the MTU Group's likely future development.

Munich, July 25, 2022

signed
Reiner Winkler
Chief Executive Officer

signed
Peter Kameritsch
Chief Financial Officer and Chief Information Officer

signed
Michael Schreyögg
Chief Program Officer

signed
Lars Wagner
Chief Operating Officer

Auditor's review report

To MTU Aero Engines AG
We have reviewed the condensed interim consolidated financial statements prepared by MTU Aero Engines AG, Munich, comprising the Consolidated Income Statement, the Consolidated Statement of Comprehensive Income, the Consolidated Balance Sheet, the Consolidated Statement of Changes in Equity, the Consolidated Cash Flow Statement and selected explanatory notes, together with the interim Group Management Report for the interim reporting period from January 1, 2022 to June 30, 2022. These documents form part of the half-year report pursuant to Section 115 of the German Securities Trading Act (WpHG). The preparation of the condensed interim consolidated financial statements in accordance with IFRSs as endorsed for application in the EU, and the preparation of the interim Group Management Report in accordance with the applicable requirements of the German Securities Trading Act (WpHG), are the responsibility of the Group's legal representatives. Our responsibility is to confirm that we have reviewed the condensed interim consolidated financial statements and the interim Group Management -report in accordance with our mandate.

We conducted our review of the condensed interim consolidated financial statements and of the interim Group Management Report in accordance with German generally accepted standards for the auditing of financial statements promulgated by the Institute of Public Auditors in Germany (IDW). Those standards require that we plan and perform the review such that we obtain reasonable assurance that the condensed interim consolidated financial statements do not deviate significantly from the IFRS requirements concerning the presentation of interim reports, as endorsed for application in the EU, and that the interim Group Management Report does not deviate from the applicable requirements of the German Securities Trading Act (WpHG), based on our critical evaluation of these documents. In a review as opposed to a full audit, our evaluation is based principally on interviews with employees of the company and on analytical assessments. Its findings are therefore less reliable than those of a full audit. Since our review does not constitute an audit in the strict legal sense, we are unable to pronounce a certified opinion.

Nonetheless, based on our review, no findings have come to light that might lead us to conclude that the condensed interim consolidated financial statements do not comply with the IFRS requirements for interim financial reporting, as endorsed for application in the EU, nor that the interim Group Management Report does not comply with the applicable requirements of the German Securities Trading Act (WpHG).

Munich, July 26, 2022

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Baur	Stummer-Jovanovic
German Public Auditor	German Public Auditor

Additional information

Financial calendar

Interim financial report as of June 30, 2022 .... July 27, 2022
Quarterly statement as of September 30, 2022 .... October 27, 2022
MTU Investor and Analyst Day 2022 .... November 17, 2022

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MTU Aero Engines AG on the internet

- You can find further information about MTU Aero Engines AG on the internet at www.mtu.de
- The Investor Relations site can be accessed directly at www.mtu.de/investor-relations
- You can find information on the products of MTU Aero Engines AG at www.mtu.de/engines

Translation

The German version takes precedence.

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