# Forecast Report

## Framework Conditions: Future Development of the Economy as a Whole and the Jenoptik Sectors

Although the global economy remains in the grip of the coronavirus crisis, the International Monetary Fund (IMF) is moderately more positive about ongoing developments in its World Economic Outlook of January 2021 than it was in October, and has therefore raised its forecast for global economic growth in 2021 by 0.3 percentage points, to 5.5 percent, with the global economy due to grow 4.2 percent in 2022. Vaccines and vaccination campaigns, together with stimulus packages in many industrialized nations, are improving the outlook, according to the IMF. Although the IMF believes that Germany has managed the crisis well, it is less optimistic about future growth and has cut its forecast for 2021 (since the last forecast in October) by 0.7 percentage points, to 3.5 percent, followed by 3.1 percent in 2022. The IMF expects the eurozone to achieve growth of 4.2 percent this year, 1 percentage point down on its October forecast. The US will see stronger growth (5.1 percent), and in China, too, the IMF sees economic output growing by a good 8.1 percent.

Most analysts expect robust growth in the US economy in 2021, driven by stimulus packages and the advancing vaccination campaign. Experts see risks in the high levels of both corporate and household debt.

T65 Gross domestic product forecast (in percent)

| | 2021* | 2022* |
|---|---|---|
| World | 5.5 | 4.2 |
| US | 5.1 | 2.5 |
| Eurozone | 4.2 | 3.6 |
| Germany | 3.5 | 3.1 |
| China | 8.1 | 5.6 |
| India | 11.5 | 6.8 |
| Emerging countries | 6.3 | 5.0 |

Source: International Monetary Fund, World Economic Outlook, January 2021
* Estimate

China is expecting further growth impetus from a new Five-Year Plan, due to be officially adopted in March. A new economic policy aims to boost the domestic market and home-grown innovation. China wants to be less dependent on imports and foreign companies, with key technologies set to be manufactured by companies within the country. Wherever the use of foreign firms is indispensable, they will be expected to move their value chains to China.

For Germany, the Federal Government has cut back its growth forecast due to the extended lockdown, from 4.4 percent to 3.0 percent. Economic growth will be largely dependent on the course of the pandemic and the action taken to contain it, especially in the first quarter of 2021. A return to pre-crisis GDP and foreign trade levels is not expected until mid-2022 at the earliest. According to the German Federal Ministry for Economic Affairs and Energy, the outlook for industry remains muted in view of the pandemic and supply bottlenecks in the semiconductor industry. T65

Thanks to digitization, the photonics industry remains part of a growing field, according to the Spectaris industry association. The use of lighting technologies is making an essential contribution to global market growth and has become indispensable for many innovations, e.g., as a basic technology for autonomous driving, for industry 4.0 and big data applications, for the smart laboratory in analytical and biotechnology, and through the use of quantum technology, which may provide photonics with its next source of growth momentum. Further growth is expected in the photonics industry, according to Spectaris, in the pursuit of climate protection and sustainability. Light-based technologies deployed in the service of "green photonics" are key here. The use of photonic solutions will save 3 billion tons of $CO_2$ emissions by 2030, according to Spectaris. The market research company MarketsandMarkets expects the global photonics market to grow in value from 593.7 billion US dollars in 2020 to 837.8 billion US dollars by 2025, with an average annual growth rate of 7.1 percent.

The Photonics21 technology platform published a position paper on the promotion of optical technologies in June 2019. The paper details commitments by the European photonics industry to invest up to 100 billion euros in research and development throughout the next phase of the "Horizon Europe" research initiative (2021 to 2027) when the European Commission launches a new photonics PPP (public-private partnership). This PPP will double the Commission's annual commitment to

200 million euros, equating to a total of 1.4 billion euros in seven years. In the fall of 2020, however, the Commission announced a reduction of around 30 percent in this commitment, which was criticized by industry experts. Investment in photonics as a key technology is required to ensure competitiveness in the face of funding for photonics from China, South Korea, and the US, and to facilitate the digital transformation in Europe.

A major acquisition in the global laser market might take place in the second half of the year: photonics specialist Lumentum plans to buy laser manufacturer Coherent for 4.7 billion euros to help it meet the growing requirements of the shift to the 5G standard, modern microelectronics, and autonomous vehicles. Two other photonics companies (MKS Instrument and II-VI) also offered to acquire Coherent in February 2021.

Experts are anticipating another year of growth in the semiconductor industry. The Semiconductor Industry Association (SIA) expects year-on-year revenue growth of 8.4 percent. According to IT analyst Gartner, global revenue will increase 11.6 percent in 2021, equating to around 502 billion US dollars, partly driven by strong demand in connection with 5G and associated network equipment. Segments such as laptops could see lower growth than in the COVID-19 year 2020, and the trade dispute between the US and China remains a risk. Following the record year 2020, the semiconductor equipment market will continue to grow in the next two years, according to the Semiconductor Equipment and Materials International (SEMI) industry association. Revenue is expected to grow from 68.9 billion US dollars in 2020 to 71.9 billion US dollars in 2021, followed by 76.1 billion US dollars in 2022. Growth in the semiconductor industry and its equipment manufacturers will be driven by growing demand for cloud services, server capacity, PCs and laptops, and gaming and health technologies. New developments relating to the Internet of Things (IoT), artificial intelligence, and machine learning are also boosting demand for more connectivity, large data centers, and big data. After losing around half of its share of global chip production in the last two decades, the US industry is now due to be boosted with the help of government support such as the “American Foundries Act” or the “CHIPS for America Act”. This includes, for example, a double-digit billion sum for the construction of new chip factories and for research funding. In Germany, the Federal Ministry for Economic Affairs and Energy plans to mobilize a huge investment of up to 50 billion euros in the semiconductor industry with an EU funding program known as the Important Project of Common European Interest (IPCEI) to reduce dependence on Asian and American companies.

In December, the German Mechanical Engineering Industry Association (VDMA) raised its production forecast for the German mechanical and plant engineering industry in 2021. Thanks to the slight upturn in the economy and a recent improvement in the order situation, the association expects real production growth of 4 percent instead of the previously expected 2 percent. This forecast, however, is significantly less certain than usual. In terms of revenue, the VDMA expects only minor growth, if any, which will primarily come from sales markets outside Germany and Europe. The high level of uncertainty in the global economy is particularly impacting on the export-oriented mechanical engineering industry. This problem is compounded by continuing protectionism, the structural change in the important customer sector of the automotive industry, and liquidity bottlenecks caused by the coronavirus crisis. Travel and residence restrictions, as well as health regulations, are also still hindering sales, installation, and service activities.

An initial recovery in the robotics industry following the coronavirus-related slump in demand in 2020 is not expected until the second half-year 2021, according to a joint analysis conducted by the VDMA and BayernLB Research. Pre-crisis levels will not be reached until 2022 at the earliest, and possibly not until 2023 if the lockdowns last longer. The industry will benefit from the coronavirus crisis in the medium and long term, because it is accelerating trends such as the smart, simplified user operability of robots, collaborative robotics – i.e., the cooperation between humans and robots –, and digitization, for example for remote maintenance and virtual commissioning of complex systems. This will help to advance the smart factory and provide important long-term growth momentum, according to the VDMA Robotics and Automation sector group. Alongside industrial robots, service robots will also grow in importance, e.g., for logistics in factories, warehouses, or medical facilities.

The German Association of the Automotive Industry (VDA) is expecting the market situation in the global automotive industry to slowly improve in 2021. Following the prior-year slump due to the pandemic, the global passenger car market could grow 9 percent, to 73.8 million vehicles. This sales volume, however, would still be well down on pre-pandemic levels. China is seen as the only country capable of exceeding pre-crisis levels in 2021; the other major markets of Europe and the US will only slowly return to their pre-crisis figures. At the beginning of 2021, the global automotive value chain is hindered by its dependence on chip manufacturers in Asia. Lacking semiconductors and semiconductor modules, which are required, for example, in electronic control units or for driver assistance systems, car manufacturers are reducing or stopping their production lines. It is unclear how long these supply issues will persist.

In its "Road Safety Market by Solution, Service, Region" report, US market research company MarketsandMarkets believes that the global traffic safety market will grow from 3.0 billion US dollars in 2020 to 4.9 billion dollars in 2025, an average annual increase of 9.3 percent. Key factors include the increase in numbers of people living in cities, growing mobility and motorization, a rising number of traffic accidents and deaths, and more government initiatives to promote road safety. On a regional level, the North American market will dominate, as it is home to the most advanced technology and many initiatives to increase safety. Many major cities in the US and Canada, for example, are looking to implement "Vision Zero" measures, under which fatalities in road traffic are considered unacceptable. Within the speed monitoring segment, automatic number plate recognition (ANPR) and section control systems, used to monitor speed limits not just at specific points but over a given stretch of road, are both growing in importance. Among manufacturers of traffic safety technology, the US company Verra Mobility will merge with the Australian supplier Redflex probably by May 2021. In Europe, the reduction in inner-city speeds to 30km/h is gaining traction in increasing numbers of regions and cities, among them Paris, Brussels, and Spain. In Great Britain, these initiatives for better road safety and noise protection are being promoted on the "twenty is plenty" campaign (20mph).

Following a sharp slump last year in the aviation industry due to COVID-19, the suppliers are also expecting a very weak 2021 fiscal year, and is concerned about an appreciable loss of jobs. Compared to 2019, revenue among suppliers is expected to fall 33 percent in 2021. Pre-crisis levels are unlikely to be reached until 2024 at the earliest. Both major aircraft manufacturers have announced job cuts. Airbus, however, states that no final assembly sites will be shut; all models will continue to be produced, albeit at a reduced speed, with the exception of the A380, which will be discontinued in 2021. Despite this, Airbus has changed its plans for ramping up production, reducing its aim to produce almost 60 aircraft a month from July 2021 on to just 50. In contrast short-haul and medium-haul routes, Airbus does not see demand increasing for long-haul models in the foreseeable future. A return to 2019 production levels will not be possible until 2023 to 2025 at the earliest.

In the security and defense technology industry, NATO announced in the summer of 2020 that it would build up its air defense capabilities against the backdrop of the tense relationship with Russia. One of the largest defense projects currently underway in Germany, the modernization of missile defense, might be delayed or even stopped if the budget for the "Technical Air Defense System" (TLVS) is not fully or partially approved by the Bundestag before the Bundestag elections in the fall. Experts estimate that the project will cost a total of 13 billion euros by 2030. The "Future Combat Air System" (FCAS) project, which is to be made operational by 2040 in cooperation with France, is also threatened by delays due to deficiencies in the financial planning and differences between the partner countries and companies involved regarding expertise and intellectual property rights arising from the innovations. Germany has extended until the end of 2021 and further tightened its ban on armaments exports to Saudi Arabia. Accordingly, no new applications for exports to Saudi Arabia would be approved; licenses that have already been issued but were only on hold will be revoked. Exceptions apply to companies involved in European cooperation projects, e.g., the Eurofighter or Tornado fighter jets, if it is guaranteed that the final assembled goods will not be delivered to Saudi Arabia or the United Arab Emirates.

# Expected Development of the Business Situation

## Planning assumptions for the Group and the divisions

The forecast for business growth in 2021 was based on the group planning. At the time the report was prepared, Jenoptik was still not able to make a conclusive quantitative assessment of possible negative economic influences associated with the spread of the coronavirus (effects of the lockdown at the beginning of the year and a possible third wave of the pandemic).

Jenoptik operates in the following reportable segments: the three photonic divisions Light & Optics, Light & Production, and Light & Safety as well as VINCORION.

Separate plans from the divisions, VINCORION, and the operational business units form the starting point, they are all harmonized and integrated in the group planning. Potential acquisitions, divestitures, and exchange rate fluctuations are not included in the planning.

The system of key performance indicators covers the revenue, EBITDA margin, order intake, cash conversion rate, and capital expenditure indicators. Other indicators will also be regularly compiled in the future and are used by top management for informational purposes.

In 2021, we will continue to pursue our "Strategy 2022" – which focuses on photonic technologies – and implement measures to realize its objectives. In the process, we are concentrating on three issues – focus, innovation, and internationalization.

Overall, the Jenoptik Group anticipates consistently good business performance in the Light & Optics division in 2021. We will enable this by stepping up our activities as a global OEM supplier of solutions and products based on photonic technologies, by focusing on key sales markets, by growing our global reach, and with innovative products and a larger range of integrated system solutions. In addition, TRIOPTICS, which will be consolidated for the full year for the first time, will also make a significant contribution to growth. Market observers and key customers expect continued high demand in the semiconductor equipment market in the current year. In this regard, the division should benefit from its range of optical and micro-optical system solutions for semiconductor production. In the field of biophotonics (medical technology and life science), existing cooperation arrangements with key international customers are to be further expanded, and new ones acquired in the current fiscal year. Following a corona-related decline in 2020, this field is expected to achieve growth in 2021 due to a renewed rise in demand. The division also expects an improvement in business growth in the Industrial Solutions area. The Test & Measurement unit, which in addition to TRIOPTICS has included OTTO as of January 1, 2021, also expects noticeable growth, primarily due to the first-time consolidation of TRIOPTICS. In order to support overall positive development in the Light & Optics division and to broaden our presence in our core markets, the range of optical solutions for information and communication technologies, along with applications in the field of virtual and augmented reality, is also growing in significance. In the current fiscal year, the Light & Optics division will also continue to invest in its operational performance and sales to promote future growth and continue the process of internationalization.

In 2020, business in the Light & Production division was clearly impacted by the effects of the COVID-19 pandemic, but also by structural changes in the automotive industry. Both the Automation & Integration and Laser Material Processing areas are expected to return to growth in the current fiscal year. We expect that the effects of the restructuring measures will already have a positive impact for Metrology in 2021. However, the measures will not take full effect until 2022.

Focusing on automated plastic and metal processing will support growth in the field of laser processing systems and automation. The acquisitions of INTEROB (2020) and Prodomax (2018) have also contributed to this. As an integrated supplier, Jenoptik is now able to offer end-to-end solutions for efficient production environments. In the metrology sector, we assume that the trend toward integrated production-related metrology will continue. The development from stand-alone machines to supplying modular systems and solutions for customer manufacturing in the B2B segment will continue, thereby boosting our customers' productivity. As the market for metrology is growing particularly rapidly in Asia, business is to be strengthened there.

See the "Control System" chapter for more information on the key performance indicators

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See the "Business Model and Markets" and the "Targets and Strategy" chapters for more information on the strategy and the division structure

See the "Framework Conditions" chapter for more information on the future development of the Jenoptik sectors

The Light & Safety division is expecting a positive development in the 2021 fiscal year. This is to be supported by new products, investment in the expansion of the customer portfolio, and a promising project pipeline. In addition, local project management and service structures will be strengthened, thus further improving direct customer support.

The traffic service provision business model will continue to be expanded. The civil security business is another area that is growing in significance. In 2021, we will modernize our product portfolio, particularly in the area of traffic monitoring, and develop a new uniform product platform. Additional new functions are also being integrated into existing systems in order to reflect the required interdependence of applications such as law enforcement, traffic monitoring, or automatic number plate recognition (ANPR). Deep learning technology is due to be used to a greater extent in safety and civil security applications. On a regional level, Jenoptik is primarily expecting growth momentum benefiting the Light & Safety division to come from the Americas, Europe, and the Arab and Pacific regions.

While VINCORION's defense and security systems business showed stable development in 2020, and this is expected to continue, the aviation area saw a downturn due to the coronavirus. An upturn in business is also not expected for this area in 2021.

VINCORION's business is predominantly project-based and geared toward the long term. European defense spending is picking up again. Various major new procurement projects are also planned in Germany, key criteria being connectivity, automation, and energy efficiency. At the same time, a potentially more restrictive export policy under the present German government could impact on or delay projects. In the medium term, a significant increase in investment for the German armed forces has political support, but we do not expect this to have any effect on our business in the short term, as political decision-making processes are generally highly protracted. In the years ahead, this may contribute to higher revenues. Beyond this, VINCORION is looking to increase the share of its systems used in civilian fields as well as its spare parts business. We expect that new in-house developments, such as the heatable floor panel for passenger aircraft, will also contribute to growth in the coming years, but the situation in the aviation industry is currently still heavily impacted by the effects of the COVID-19 pandemic. Internationalization also remains a key topic in 2021; foreign business is due to expand steadily, particularly in North America and Asia/Pacific.

## 2021 earnings position forecast

Based on good order intake growth in the fourth quarter of 2020, a well-filled project pipeline, and the continued promising development in the semiconductor equipment business, the Executive Board expects further growth in the current fiscal year. In addition to the organic growth in the divisions, TRIOPTICS, which will be consolidated for the full year for the first time, will also make a contribution to positive development. Current uncertainties are caused by the renewed lockdown at the start of the year due to COVID-19, and the risk of a third wave of the pandemic. However, our scheduled growth also presupposes that political and economic conditions do not worsen. In particular, these include economic trends, the potential impact of Brexit, regulations at European level, export restrictions, and further policy developments in our sales markets.

Major portfolio changes were not considered in the forecast.

For 2021, Jenoptik is expecting revenue growth in the low double-digit percentage range, including TRIOPTICS (prior year: 767.2 million euros).

At present, the Group is expecting EBITDA (earnings before interest, taxes and depreciation, incl. impairment losses and reversals) to increase significantly in the current fiscal year (prior year: 111.6 million euros). The EBITDA margin should be between 16.0 and 17.0 percent (prior year: 14.6 percent). Due to the uncertainty generated by the COVID-19 lockdown at the beginning of the year and the risk of a third wave of the pandemic, a more precise forecast is currently not possible. However, we will endeavor to specify the forecast during the course of the year.

The order intake for a period is also affected by major orders, particularly at VINCORION and in the Light & Safety division, and increasingly also in the Light & Production division. In the past fiscal year, Jenoptik received new orders worth 739.4 million euros and had therefore built up a good order base by the close of 2020, particularly following a strong fourth quarter. For the current 2021 fiscal year, Jenoptik expects the order intake to grow in the low double-digit percentage range.

It should also be noted that Jenoptik had frame contracts worth 42.3 million euros at the end of 2020, which are not included in the order intake or backlog. 78.5 percent of the order backlog reported as of December 31, 2020 (31/12/2019: adjusted 68.0 percent) is expected to be converted to revenue in 2021.

In 2021, the Light & Optics division expects revenue, including the contributions from TRIOPTICS and OTTO, to grow in the clear double-digit percentage range. The EBITDA is expected to show a significantly stronger rate of growth than revenue.

The Light & Production division expects revenue growth in the upper single-digit percentage range. The EBITDA is expected to show a stronger rate of growth than revenue. In this division, too, the accuracy of forecasts is influenced by the rising share of international projects, which are increasingly subject to accounting over time as specified in IFRS 15.

The Light & Safety division also expects growth in 2021, with a revenue increase in the mid to upper single-digit percentage range. The EBITDA is expected to see slight growth.

Based on its robust order backlog at the close of 2020, VINCORION expects the 2021 fiscal year to show stable development in both revenue and EBITDA, dependent on the extent to which the coronavirus affects development in the aviation area.

## T66 Targets for Group and divisions (in million euros)

| | Actual 2020 | Forecast 2021 (without major portfolio changes) |
|---|---|---|
| Revenue | 767.2 | Growth in the low double-digit percentage range (including TRIOPTICS) |
| Light & Optics | 318.0/321.4 [1] | Growth in the clear double-digit percentage range [1] |
| Light & Production | 178.9/175.5 [2] | Growth in the upper single-digit percentage range [2] |
| Light & Safety | 114.0 | Growth in the mid to upper single-digit percentage range |
| VINCORION | 151.7 | Stable development (dependent on developments in the aviation industry resulting from the pandemic) |
| EBITDA/EBITDA margin | 111.6/14.6% | Significant EBITDA growth / margin between 16.0 and 17.0% [3] |
| Light & Optics | 68.6/68.3 [1] | Growth significantly stronger than in revenue [1] |
| Light & Production | 7.9/8.2 [2] | Growth stronger than in revenue [2] |
| Light & Safety | 22.3 | Slight rise |
| VINCORION | 16.6 | Stable development (dependent on developments in the aviation sector resulting from the pandemic) |
| Order intake | 739.4 | Growth in the low double-digit percentage range |
| Cash conversion rate | 55.8% | Over 50% |
| Capital expenditure [4] | 47.3 | Above prior year |

[1] incl. OTTO
[2] excl. OTTO
[3] Due to the uncertainty caused by the COVID-19 lockdown at the beginning of the year and the risk of a third wave of the pandemic, a more accurate forecast is not possible at this time. However, we will endeavor to clarify the forecast during the course of the year
[4] Without capital expenditure on financial investments

### Group asset and financial position forecast

Jenoptik expects that capital expenditure in the 2021 fiscal year will be up on the prior year's figure (prior year: 47.3 million euros). Capital expenditure on property, plant, and equipment will focus on the growth areas within the divisions or take place within the scope of new customer projects. It aims to expand capacities, thereby ensuring future growth.

We expect the cash conversion rate (ratio of free cash flow to EBITDA) to be over 50 percent in 2021 (31/12/2020: 55.8 percent).

In addition to financing the continued growth of the company, the future aim of the Executive Board remains to ensure a dividend policy in line with corporate success. In the view of the Executive Board, a solid base of equity for sustainable organic growth to increase the company value as well as the exploitation of opportunities for acquisitions are also of crucial importance to the interests of the shareholders.

See the Report on Post-Balance Sheet Events for more information on the dividend

Important note. The actual results may differ significantly from the forecasts of anticipated development made above and summarized below. This may arise, in particular, if one of the uncertainties mentioned in this report were to materialize or worsen, or if the assumptions upon which the statements are based prove to be inaccurate in relation to the economic development, especially in association with the spread of the coronavirus.

## General Statement by the Executive Board on Future Development

In the current 2021 fiscal year, the Jenoptik Group will continue to implement its "Strategy 2022", concentrating on photonic technologies. In terms of economic development, our key focus remains on profitable growth. We believe that revenue growth, resulting economies of scale, and more efficient and faster processes result in higher and sustainable earnings. It is the assessment of the Executive Board that the still good asset position and the viable financing structure give Jenoptik sufficient room for maneuver to finance both organic and inorganic growth.

Achieving our targets is dependent on the development of the economic and political environment. However, uncertainty currently exists with respect to the impact of the COVID-19 pandemic on business growth in the current year.

On the basis of encouraging order intake growth in the fourth quarter of 2020 and the current order backlog, a well-filled project pipeline, and continued good performance in the semiconductor equipment business, the Executive Board remains positive for the 2021 fiscal year and expects revenue growth to be in the low double-digit percentage range. In addition to organic growth in the divisions, TRIOPTICS, which will be consolidated for the full year for the first time, will also make a significant contribution to growth. The Group's EBITDA margin should be between 16.0 and 17.0 percent.

In 2021, we will again invest a significant portion of our funds in the expansion of the international sales network and the development of innovative products. As part of our active portfolio management, potential acquisitions are closely scrutinized; divestitures have still not been ruled out.

Based on the information available at the time this report was created, the Executive Board expects the Jenoptik Group to see positive business development in 2021.

Jena, March 16, 2021

JENOPTIK AG
The Executive Board