

## 3 Economic Report

### 3.1 Macroeconomic and Industry-Specific Conditions

#### General economic conditions

##### Global economy

In 2019, the global economy continued its positive economic development overall, but lost momentum compared with the previous year. Factors influencing this development included the transnational weakness of key industries such as the automotive sector and the reduction in global trade volumes. Uncertainty also continued regarding the trade conflict between the USA and China. Economic output in the eurozone was unable to repeat the high growth rate of the previous year and declined noticeably. In the United Kingdom, the uncertainties surrounding Brexit are likely to have been the trigger for comparatively low growth rates. The largest contribution to global growth in 2019 was again made by China with 6.2%.

For 2019, the German Council of Economic Experts assumed that global GDP would grow by 2.6% (previous year: 3.3%).

##### Eurozone

Economic development in the eurozone in 2019 was heterogeneous, although the restrained momentum of the previous year continued overall. The larger member states saw a slowdown in the pace of growth. One reason for this was the weaker performance in the manufacturing industry. By contrast, private consumption provided positive impetus in view of the favorable situation on the employment market. Growth in gross fixed asset investments in the eurozone declined noticeably, although the financing environment appeared very positive. In September 2019, the European Central Bank again eased its monetary policy, which had been expansionary for years. The decline in the unemployment rate slowed, not least due to the continuing shortage of labor and skilled workers.

For 2019, the German Council of Economic Experts expected GDP in the eurozone to grow by 1.2% (previous year: 1.9%).

##### USA

The USA recorded a slight slowing in the pace of growth. Nevertheless, the economic upswing remains robust. This had an increasingly positive effect on the employment market, causing the unemployment rate to drop to 3.5%. After recently weaker figures, private consumption made a substantial contribution to growth in GDP. Investments in intellectual property – including both software and research and development – recorded strong growth, while non-governmental gross fixed asset investments and investments in equipment and non-residential construction declined markedly. Exports from the United States also weakened significantly in the year under review. The increases in expenditure and tax cuts under the Tax Cuts and Jobs Act led to

a noticeable widening of the government deficit and debt. After tightening its monetary policy again beginning in 2016, the Fed decided to relax its monetary policy for the first time in July 2019.

Following growth of 2.9% in the previous year, the US economy was expected to grow by 2.3% in 2019.

##### Japan

Economic development in Japan remained positive, but with comparatively little momentum. Japan's foreign trade suffered from the ongoing global trade conflicts and the slowdown in the international economy. For the year under review, there were signs of a decline in both exports and imports of goods. Companies continued to pursue their investment plans, although the growth rate was lower than in the previous year. The main growth drivers were private consumption and the special economic situation caused by the 2020 Summer Olympics in Tokyo. The Bank of Japan confirmed its expansionary monetary policy.

Overall, economic output was expected to increase by 0.8% in 2019 – the same growth rate as in the previous year.

##### Emerging markets

Economic development in the major emerging markets was heterogeneous.

In China, the economic upswing continued, although the rate of growth lost some of its momentum. Economic growth of 6.2% was expected for the year under review (previous year: 6.6%). The trade conflict with the United States as well as monetary and fiscal policy measures taken by the Chinese government had a particular impact. Following the restrictive monetary policy of recent years, there could now be a trend reversal towards a more expansive policy. At the same time, China wants to expand lending to companies.

In India, the high rate of growth of the previous year was unable to be repeated, although economic growth remained at a high level of 5.4% (previous year: 7.3%). For Russia, the lack of private investment is likely to have had noticeable consequences. A slight increase in economic output of 0.7% was assumed for 2019 (previous year: 2.2%).

Overall, the German Council of Economic Experts anticipated GDP growth of 4.5% in the emerging markets (previous year: 5.2%).

Sources: Annual Report 2019/20 German Council of Economic Experts; GTAI – Wirtschaftsausblick Russland (November 2019), GTAI – Wirtschaftsausblick Japan (November 2019).

## Development of the construction industry

### Europe

The European construction industry continued its economic upswing in 2019, even though the majority of Euroconstruct member countries were unable to repeat the high growth rates of the previous year. The three largest economies developed heterogeneously. While growth in Germany and France slowed significantly (from 1.7% in the previous year to 0.8% for Germany and from 3.4% to 2.1% for France), the industry experts at Euroconstruct expected growth in the UK to reach 0.7% (previous year: 0.3%). The Netherlands (from 6.7% in the previous year to 3.6%) as well as Spain (from 6.5% to 4.6%) were unable to maintain the strong growth of the previous year. In Eastern Europe, the upswing continued following the 2016 crisis year. At 13.3%, the highest growth was forecast for Hungary, followed by Poland (8.0%) and the Czech Republic (3.3%). According to current forecasts, a growth rate of 1.3% is estimated for new residential construction. A constant growth rate of 5.1% is anticipated for infrastructure construction.

In total, Euroconstruct expects an increase in construction volume of 2.0% (previous year: 3.1%) for the member countries of the industry network.

### North America

After the previous years characterized by growth, the economic development of the US construction industry stagnated in 2019. The FMI industry experts assumed that the previous year's construction output would stagnate in the year under review, after +3.3% in the previous year. Construction output in new residential construction even declined. On the other hand, there was a rising growth rate in infrastructure construction. Public spending on infrastructure restructuring and modernization is necessary due to many years of underinvestment. After a positive trend reversal had become apparent in 2018, a considerable growth rate of 6% was forecast for infrastructure projects in 2019 (previous year: +1%).

### Japan

The Japanese construction sector recorded an upward trend in 2019, with an expansion in private residential construction (+1.8%) and infrastructure construction (+8.4%) in particular. Following the decline in public sector construction investments in the previous year, a growth rate of 3.1% was expected for 2019. In contrast, investments in the non-residential construction sector declined.

The Japanese Research Institute of Construction and Economy (RICE) estimated a significant increase in construction volume of 2.2% in 2019 (previous year: 0.3%).

### Emerging markets

The performance of the construction industry in the emerging markets painted a mixed picture in 2019.

The construction sector remained one of the main pillars of the Chinese economy. As in the previous year, the residential construction sector in particular was expected to achieve significant growth in the two-digit percentage range. While investments in office construction remained stable, there was a significant decline in investments in retail space. In state infrastructure construction, the Chinese government is focusing on pushing ahead with the expansion of the railway network.

In India, the construction industry was expected to continue its dynamic growth, with the infrastructure sector as the driving force. Building construction showed a different development. Residential construction in India was anticipated to recover slightly in the year under review, but remained a source of concern. Although there is great demand for new housing, particularly in the conurbations, liquidity bottlenecks are hampering the realization of new construction projects. However, overall, building construction developed positively thanks to growth rates in the commercial sector.

In Russia, building construction output in the first half of 2019 increased by a moderate 0.2% year-on-year, thanks in particular to private residential construction. In civil engineering, the implementation of major infrastructure projects lagged behind schedule. Further construction projects, for example in Siberia, were expected in 2019 and the following years, with a focus on transport routes and train lines. This should provide additional growth impetus.

Sources: Euroconstruct Summary Report Warsaw Nov 2019; ifo\_Bauwesen\_Euro\_2019; 2020 FMI Overview; GTAI – Branchencheck – Russland – Dezember 2019; GTAI – Branchenanalyse – Russland – 2019; Invest India – 03.02.2020; GTAI – Branchencheck – Indien – Dezember 2019; GTAI – Branche kompakt – Indien (November 2019); GTAI – Branchencheck – China – Dezember 2019; GTAI – Durchwachsene Stimmung in Chinas Bausektor – Oktober 2019; GTAI – China investiert weniger in Büro- und Handelsflächen – 2019; GTAI – China – Tiefbau – Schienennetz – Apr. 2019; RICE Japan – CONSTRUCTION INVESTMENT – Sept. 2019; NBS National BIM Report 2016 – 2018; JbKnowledge Construction Technology Report 2017-2019; BICP Global BIM Study – Lessons for Ireland's BIM Program.

## Digitalization in construction

Key figures for the construction industry are just one of several indicators for the development of the Nemetschek Group's markets. Expenditure for IT and software plays an important role in digitalization. At around 1.5% of revenue, IT expenditure in the construction industry is still below average compared with other industries. However, IT expenditure in the construction industry is expected to increase significantly in the next few years.

Digital change in the construction industry is largely determined by the Building Information Modeling (BIM) working method. The use of BIM methodology is already widespread in the USA and Singapore, as well as in the Scandinavian countries, the Netherlands and the UK. In 2016, the UK took a decisive step towards the nationwide establishment of BIM with the entry into effect of the BIM Level 2 mandate, which makes the use of BIM Level 2 mandatory for public construction projects. With the planned BIM Level 3 from 2020, the model-based collaboration of all disciplines in the UK requiring the use of Open BIM, is to be taken to a new level.

Since 2014, there has also been a new directive for the EU that recommends the use of computer-based methods such as BIM in the awarding of public works contracts and tenders. In the meantime, many European countries have implemented the EU recommendations on a national level.

In Germany, BIM is being boosted by the “Digital Planning, Building and Operation” step-by-step plan. Since 2015, experience has been gathered and skills have been pooled in pilot projects funded by the Federal Ministry of Transport and Digital Infrastructure (BMVI) in order to define the necessary quality standards. Since 2017, BIM has been used in an extended pilot phase in numerous transport infrastructure projects. From 2020, the use of BIM is to be mandatory in all new public sector infrastructure projects that are in the planning stage.

Sources: Euroconstruct Summary Report Warsaw Nov 2019; HM Government – Construction 2025, NBS National BIM Report 2016 – 2018; JbKnowledge Construction Technology Report 2017-2019; BICP Global BIM Study – Lessons for Ireland's BIM Program; EU BIM Task Group; Stufenplan Digitales Planen und Bauen von BMVI; IT Software & Services von Kepler Cheuvreux 11/2015; Deloitte 2016–2017 Global CIO Survey; BIM Maturity levels in the UK.

## 3.2 Business Performance in 2019 and Key Events Influencing the Company's Business Performance

### General statement on the economic position of the Group

The Nemetschek Group had a successful 2019 financial year, recording revenue growth in the double-digit percentage range and an above-average increase in EBITDA. The growth targets for 2019 regarding revenue and the EBITDA margin were exceeded. Growth was driven both by organic operational business development and the acquisition of the Spacewell brand, which was consolidated for a full 12 months for the first time. In the 2019 financial year, Nemetschek continued to drive forward its key strategic initiatives with a particular focus on internationalization, further developing solutions and targeting new customers.

### Acquisitions/sales

#### Holding level

No acquisitions were made at holding level in 2019.

#### Segment level

After the Nemetschek Group's Manage segment acquired **Spacewell**, a software provider for property, facility and workplace management based in Belgium, at the end of August 2018, the acquisition of 100% of the shares in **Axxerion Group B.V.**, based in Heteren, the Netherlands, followed as of January 11, 2019. Axxerion offers workflow-based cloud solutions for the facility and property management of companies. Available as a pure SaaS model, the solution optimizes operational processes such as data requests, workflow management, contract management and maintenance. The purchase price for the acquisition was approximately EUR 75 million (cash-/debt-free). Axxerion

was integrated into the Spacewell Group.

With the agreement dated April 5, 2019, Maxon Computer GmbH (Media & Entertainment segment) acquired 100% of the shares of Redshift Rendering Technologies, Inc., based in Newport Beach, USA. With its product of the same name, Redshift offers a rendering solution for 3D content creation. Following the acquisition of the remaining 30% of Maxon and the appointment of a new management team in 2018, the acquisition of Redshift was a further step in the expansion of the Media & Entertainment segment. The purchase price for the acquisition consists of a fixed component of EUR 27.3 million and a subsequent purchase price payment of up to EUR 7.6 million (earn-out). The earn-out component is dependent on achieving specific revenue and earnings targets and technical milestones.

Furthermore, Maxon Computer GmbH and the shareholders of RedGiant LLC signed an agreement on December 17, 2019 on the merger of Maxon and RedGiant. As part of the transaction, Maxon will acquire the US company RedGiant through a combination of a cash payment of around EUR 70 million and the granting of shares in Maxon. After closing the transaction, Nemetschek will hold approximately 84% and the former owners of RedGiant will hold around 16% of the shares in Maxon. This is financed by its own cash and cash equivalents and by taking out a loan. The transaction was closed in January 2020. RedGiant, headquartered in Portland, USA, offers a comprehensive product portfolio of motion design and innovative software solutions for visual effects.

### Divestments

The Nemetschek Group sold its 22.4% stake in DocuWare, a supplier of document management and workflow solutions, to the technology company Ricoh with effect from June 28, 2019. The sales proceeds led to a book profit of EUR 29.9 million for the Nemetschek Group and are shown in the financial result for 2019.

### Cooperation and partnerships

In order to expand its market position and meet the diverse customer requirements, the Nemetschek Group also relies on cooperation and collaboration with partners from the industry or with scientific institutions. Partnerships exist both within the Group among the brand companies and between brand and external companies.

Existing partnerships were continued in 2019.