

»»» What's next for Germany's growth model? Scenarios for globalisation

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It is difficult to predict the future of globalisation over a longer time horizon. One reason is that international economic relationships have changed since the global economic and financial crisis of 2008/2009 and, above all, global trade is growing more slowly. Another reason is that the longer-term impact of the coronavirus crisis is still difficult to foresee. It has the potential to reinforce protectionist trends and drive enterprises to realign their cross-border sales and supplier relationships. At the same time, international trade is very important for the German economy. A study commissioned by KfW Research has determined that around 28% of the workforce and 31% of value added depend on exports. The analysis carried out by Prognos illustrates the importance of exports for value creation and employment in Germany, develops scenarios for the future of globalisation in the next ten years and describes implications of these scenarios for Germany's growth model.

The study examines three possible scenarios of the future up to 2030 – a renewed globalisation surge, a continuing slowed globalisation and a deglobalisation of the global economy. A renewed globalisation surge would markedly lift Germany's economic output, raising real GDP by an average 1.2% annually from 2023, after the recovery from the coronavirus crisis. A broad-based deglobalisation, in turn, would lead to a much lower growth rate of 0.9%. If globalisation continues at the slower pace that was observable between the global recession of 2009 and the coronavirus crisis, trend growth of 1.1% will rank between the other two scenarios. The assumption for all three scenarios is that demographic change, digitalisation and climate change also influence the long-term economic development.

For the future of globalisation, the scenario of reduced globalisation dynamics is being regarded as more probable than the other two. Businesses are therefore called upon to rethink and possibly readjust growth strategies that have so far been geared to international operations. However, policymakers can also make a contribution. They shape the future of globalisation by creating the enabling conditions for businesses, both at home and – through cooperation with other countries – in external economic relationships.

Germany's external environment has deteriorated since the global economic and financial crisis

International trade in goods and services is a major aspect of globalisation. Even before the coronavirus crisis caused a substantial disruption of global value chains in the spring of 2020 and led to a slump in international trade, there was intensive debate over the effects and prospects of globalisation. For one thing, the growth of global trade had slowed down. While the volume of global trade grew around 1½ times as fast as the global economy each year from the early 2000s up to the economic and financial crisis of 2008/2009 – and even twice as fast in the 1990s –, trade and economic output grew only at an equal pace in the ten years prior to the coronavirus crisis. The slowdown in the growth of trade is also very evident in its relation to the growth of industrial production (Figure 1). While the annual growth rate of the global trade volume was generally higher than that of industrial production before the 2008/2009 crisis, both tended to remain on the same level after that.

Figure 1: Global trade volume and global industrial production



Source: CPB, KfW Research

For another, the trade environment had severely deteriorated. In 2017 the trade conflicts began under then-US President Donald Trump, especially between the US and China but also between the US and Europe. At the same time, globalisation came under severe attack. While the international division of labour provides significant advantages for economies, it also requires structural adjustments and gains are not distributed evenly. The question of how globalisation must be designed in order for as many people to benefit from its advantages as possible was increasingly coming into the spotlight.¹

Changes in the external environment are particularly relevant for Germany. After all, despite its size, its economy is exceptionally well interconnected, particularly in international trade. Countries with a comparable degree of openness – defined as the sum of exports and imports in relation to economic output – such as Portugal or Sweden have a much smaller economic output.² In 2019, the degree of openness of Germany was around 92%, while that of Portugal and Sweden was 89% each. At the same time, Germany's gross domestic product was around USD 3.6 trillion, Portugal's USD 0.2 trillion and Sweden's USD 0.5 trillion (in prices of 2015).

Given how relevant changes in the external environment are for the German economy, KfW Research has commissioned an analysis in order to examine how strongly Germany has so far benefited from globalisation and, in particular, from trade links, in what ways globalisation might develop in the next ten years, and what implications these (de)globalisation tendencies have for the German growth model of the future. The following observations on possible globalisation scenarios and their impacts on growth and employment both for the German economy as a whole and for individual sectors are based on the findings of this study, which was carried out by Prognos under the heading 'Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien', which translates as 'Globalisation in crisis – German enterprises need new growth strategies'.³

Phases of globalisation since the beginning of the 2000s provide points of reference for possible future scenarios

In order to have an idea of what the future of globalisation might look like, the Prognos study begins by taking a look at the past with a focus on international trade in goods and services. Two phases of globalisation can be distinguished since the early 1990s.

Phase of strong globalisation from the early 1990s up to the global economic and financial crisis of 2008/2009

The global economy was characterised by strong growth in trade and deepening international value chain relationships. Trading conditions were favourable because the European internal market was created at the beginning of the 1990s and the WTO was founded in the mid-1990s. The Eastern European transition countries began the process of integrating into global trade and production processes. China joined the WTO in 2001, a move that promoted the integration of its economy into the global economy.

The positive developments of trade were facilitated by cost reductions in the international transport of merchandise. One reason for this was the global establishment of standardised container transport at the beginning of the 1970s.⁴ If we use the CIF/Fob ratio to estimate the development of transport costs,⁵ we can see falling transport costs from the mid-1980s to the mid-1990s.⁶ More recent developments, such as the use of GPS (global positioning system) for route planning and freight tracking, also reduced the cost of transport and logistics.⁷

Furthermore, progress in information and communication technologies has made it easier to organise production processes across borders and advanced the expansion of global production networks. Improved telecommunications, higher computing power, greater transmission capacity and more advanced software have made it easier to geographically separate production locations since the mid-1980s. International wage differentials ensured that this was also economically profitable and that global value chains emerged.⁸

The cross-border movement of capital, labour and knowledge also intensified during this period. Between 1990 and 2008, global direct investment positions grew by 14 percentage points to 24% of global gross domestic product.⁹ Average annual net migration increased worldwide from around 1.2 million people in the 1950–1955 period to around 6.4 million people in the 2005–2010 period.¹⁰ At the same time, however, the share of migrants in the global population remained relatively steady.¹¹ The development of international data flows as an indicator of the exchange of information eclipses the development of other globalisation indicators such as trade and direct investment. Global monthly IP traffic was 41 times as high in 2017 as in 2005.¹² Data flows cover a broad spectrum from movies and music through educational offerings to business data. The large daily data flows between subsidiaries of multinational corporations are also counted.

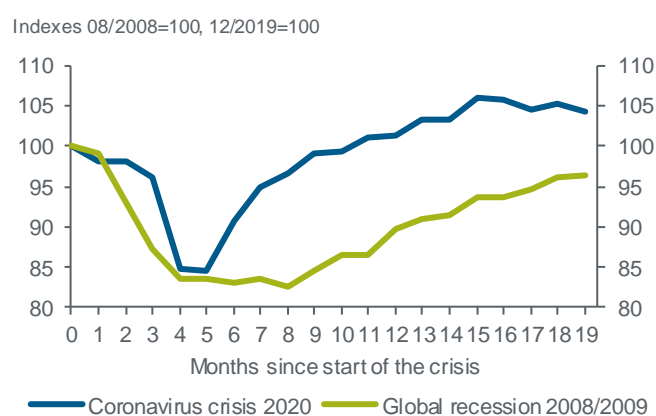
Global trade experienced a phase of significantly slower growth between the global economic and financial crisis and the coronavirus crisis

Global trade fell sharply during the global recession of 2009, even more steeply than industrial production, which is used as a point of reference for determining business cycles. While the volume of global trade in the first three months of 2009 was around 18% below the previous year's level, industrial production was around 12% lower.¹³ In the years that followed, global trade did not return to the growth rates of the period before the global recession. That is because after the global economy had recovered from the recession, a pronounced investment weakness followed which weighed on global trade growth.¹⁴

Changes in the trade environment also had an impact. On the one hand, after the successes of the GATT and WTO in the preceding decades, only moderate progress was made in removing tariff trade barriers. The average most-favoured-nation tariff dropped by 2.8 percentage points between 2000 and 2008 and then by only close to 1 percentage point up to the year 2017.¹⁵ Moreover, the share of globally traded goods that were affected by non-tariff trade barriers such as import quotas, export subsidies, licences or administrative hurdles rose from 7% in 2009 to just under 32% in 2017.¹⁶ The deterioration of external trade conditions was exacerbated yet again when the trade conflicts instigated by the US began in 2017. The trade conflict between the US and China, in particular, led to an increase in punitive tariffs on both sides.¹⁷

Thus, global growth was already on its knees before the coronavirus crisis struck.¹⁸ In its wake, Germany and the entire international community experienced a massive collapse in external trade as a result of containment measures and behavioural changes on the part of consumers and enterprises. April and May 2020 were the two worst months, with Germany's trade volume 21 and 18% below the level at the end of 2019. Globally, the declines were 16 and 17%.¹⁹ Even if trade recovered faster from the coronavirus-induced slump than from the decline during the global recession of 2009 (Figure 2), the question is what the future of globalisation in general and international trade in particular will look like in the long term.

Figure 2: Volume of global trade



Source: CPB, KfW Research.

Three scenarios for the future of globalisation: 'slowed globalisation', 'deglobalisation' and 'globalisation surge'

The Prognos study developed three scenarios for the future of globalisation up to the year 2030.²⁰ The considerations focus on the overall trading environment and the development of transport costs, but they also assume a different level of international migration.

Scenario 1: 'slowed globalisation'

The first scenario assumes that globalisation will continue with less momentum, as was observable during the period between the global economic and financial crisis of 2008/2009 and the coronavirus crisis of 2020. No new trade agreements are concluded and existing import tariffs and non-tariff trade barriers remain on the present level. The scenario also expects hardly any changes in the trade conflicts. However, the open positions of the Appellate Body of the WTO are restaffed²¹ and the organisation's ability to function is restored in this respect. In other words, the countries align their trade policy with the status quo.

As a result, the overall trading conditions for enterprises remain complex but stable. In the absence of any additional uncertainties of a geopolitical or geostrategic nature, foreign trade transaction costs change only little. Transport costs also remain steady because of a lack of impetus towards the expansion of transport infrastructure or advances in logistics. Knowledge sharing between economies and international migration intensify at a similar rate as in previous years.

Scenario 2: 'globalisation surge'

An optimistic scenario sees a substantial improvement in the trading environment. The most recent trade conflicts centred around the US are resolved and the tariffs introduced in connection with them are withdrawn. The WTO resumes its role as a platform for multilateral negotiations but also takes into account the changing demands on agreements regarding trade in services and digitalisation.²² In addition, the countries of the EU succeed in completing the European internal market for services and the digital single market. In addition, developing and emerging economies, which have so far been rather reluctant, make more progress in liberalising trade. China and India, in particular, open their domestic markets more readily to direct investment as well. Tariffs generally continue to fall on average internationally. But most of all, multilateral exchange leads to a trend reversal in non-tariff trade barriers, which are lowered from their increased levels of the past years.

A positive geopolitical and trade policy climate, as well as political stability at global level, reduce the transaction costs of international trade because the associated security reduces risk premiums while facilitating international investment decisions. Transport costs are falling because transport infrastructure is being expanded, especially in numerous developing and emerging countries, and the automation of the logistics sector is moving ahead. Increased international cooperation leads to more intense knowledge sharing across national boundaries and creates positive frameworks for international migration.

Scenario 3: 'Deglobalisation'

In a pessimistic scenario, the trading environment deteriorates significantly. First, the conflict between the US and China continues to escalate, drawing other countries into it. Trade agreements are even terminated. As the WTO also remains incapable of acting, international trade is less rules-based. National interests take centre stage and economic policy incentives are created in order to speed up the re-shoring of value chains.

Geopolitical and geostrategic conflicts hamper international technology transfer and knowledge sharing. Greater uncertainty and the deteriorated global risk situation lead to rising trade transaction costs, while the neglect of transport infrastructure leads to higher transport costs. The coronavirus crisis also has negative longer-term effects, including ongoing travel restrictions that adversely impact economic exchange and international migration.

The qualitative considerations on the scenarios are quantified by adjusting the corresponding model parameters – export and import propensity, the development of labour productivity and net migration – in the structural equation model VIEW of Prognos (see box). The model is then used to simulate, among other things, the development of gross domestic product and its components and the variation of gross value added and employment at sectoral level up to the year 2030.

Box: Transferring the qualitative scenarios into quantitative assumptions on the scenario calculations in the VIEW model of Prognos

First, a target value for the openness of the German economy – i.e. the ratio of the sum of exports and imports to gross domestic product – is set for the end of the scenario horizon in the year 2030. Starting with a degree of openness of 90% in 2018, in the scenario of slowed globalisation it increases by a total of 10 percentage points and thus by the same amount as in the years between the global recession of 2009 and the coronavirus crisis of 2020. In the globalisation surge scenario the degree of openness in the year 2030 is 30 percentage points higher than in the year 2018, thus repeating the increase in the 12 years before the global financial crisis of 2008. In the deglobalisation scenario, on the other hand, the degree of openness drops to 70%, a level that was observable in the mid-2000s.

The different development of openness for trade and the related difference in import propensity influence labour productivity growth. After all, higher competitive and price pressure on the one hand and specialisation effects and economies of scale on the other hand increase the efficiency and innovative capacity and activity of enterprises, with this correlation most readily observable for imports.²³

The assumption is that a variation of the import ratio by 1% leads to a change in labour productivity by 0.2% in the same direction in the manufacturing sectors.²⁴ For all other economic sectors, this elasticity is weighted with the relation of the sector-specific import rate to that of the industrial sector, so that the increase in labour productivity is also lower when the import rate is lower than in the industrial sector. In total, labour productivity in the deglobalisation scenario therefore grows more slowly than in the scenario of slowed globalisation but faster in the globalisation surge scenario. Furthermore, labour productivity develops faster even in the medium scenario of slowed globalisation than on average over the past two decades, among other things based on the assumption that productivity gains are realised from the development of information and communications technology and digitalisation.

Another assumption is that migration is likely to develop more positively under a globalisation surge than under deglobalisation. The basis for modelling net migration under the scenario of slowed globalisation is net migration as forecast in the median population projection of the UN population scenarios. In the globalisation scenario the modelling assumes 40,000 people more on average per year, in the deglobalisation scenario it assumes a decline by the same number of people.

Table 1: Key indicators for the scenarios

	Degree of openness	Average labour productivity growth	Net immigration (people per annum)
		2030	up to 2030
Globalisation surge	120%	1.2% per annum	~ 240,000
Slowed globalisation	100%	1.1% per annum	~ 200,000
Deglobalisation	70%	0.9% per annum	~ 160,000
		2018	2000–2018
Historic comparison	90%	0.7% per annum	272,000

Source: Prognos 2021

As the time horizon of the scenarios is 2030, it is important to look beyond the assumptions about the future of globalisation and consider long-term trends that are relevant for broad sections of society and affect the economic development. These include digitalisation, climate change and demographic change. The VIEW model used by Prognos also takes into account these megatrends and their influence on future economic development in Germany.²⁵

Slower globalisation momentum means less trade impetus for the German economy

Taking into account the megatrends of digitalisation, climate change and demographic change, the three scenarios for the future of globalisation analysed in the Prognos study have different effects on the development of economic output in Germany up to 2030. They can be illustrated at aggregated level using average annual growth rates of gross domestic product (Table 2). It must be borne in mind here that the coronavirus crisis led to a sharp drop in economic output in 2020 that has to be made up for first.²⁶ The different momentum of globalisation in the three scenarios is already playing out during the phase of recovery from the coronavirus crisis. It is easier to make up for losses incurred during the crisis in a trade-friendly environment than in a situation in which the global environment deteriorates and weighs on foreign trade. Under the assumption of slowed globalisation, the trend development for real GDP following the recovery phase results in an average annual growth rate of 1.1% per annum between 2023 and 2030. The growth rate is 0.1 percentage points higher if globalisation picks up again. However, if globalisation reverts to deglobalisation, the German economy will achieve average growth of only 0.9% per year in the long term.²⁷

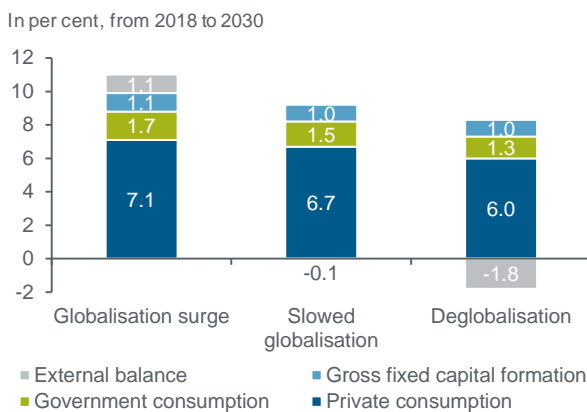
Table 2: Average annual real GDP growth rate

	Avg. 2018–2030	Avg. 2023–2030
Globalisation surge	0.9%	1.2%
Slowed globalisation	0.7%	1.1%
Deglobalisation	0.5%	0.9%

Source: Prognos (2021).

Depending on the globalisation scenario, the expenditure components of GDP contribute to varying degrees to the growth of economic output, although here too the effects of the coronavirus crisis are taken into account (Figure 3). Particularly for net exports and private consumption, the differences between the scenarios are obvious. The contribution of net exports to economic growth has averaged only 0.2 percentage points since 2010 and net exports even weighed slightly on economic growth in the years before the coronavirus crisis.²⁸ If this slowed globalisation continues, net exports can also be expected to continue providing only minor impetus. Its contribution to overall growth of real gross domestic product from 2018 to 2030 is then -0.1%. In the case of a deglobalisation, the reduced degree of openness and the resulting lower export and import propensity would indeed lead to a clearly negative growth contribution of net exports. In a globalisation surge, on the other hand, net exports makes a substantial positive contribution.

Figure 3: Growth contribution of real gross domestic product expenditure components



Source: Prognos (2021).

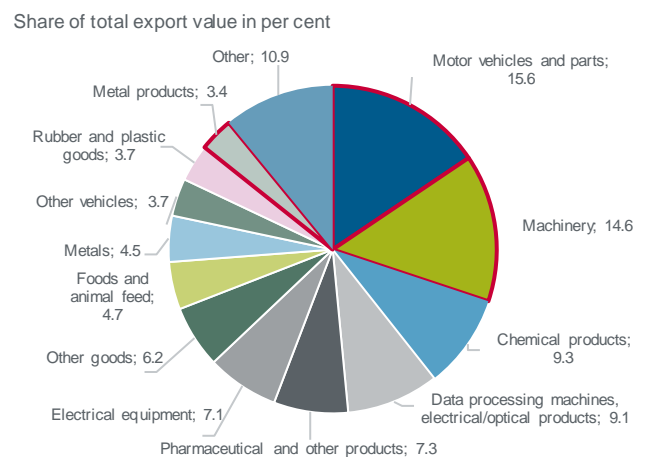
In all three scenarios, private consumption contributes the most to the growth of gross domestic product. The scenarios are differentiated on the basis of the varying intensity of the impact of globalisation on labour productivity and employment, which determine disposable income. To be sure, the number of persons engaged in economic activity generally decreases in all three scenarios as a result of demographic change (see also Figure 6). However, this is mitigated to varying degrees by net immigration. This moderating effect is strongest in a globalisation surge and weakest in deglobalisation. In all three scenarios, labour productivity increases – also because of digitalisation and the diminishing availability of labour as a result of an ageing population. And in the case of a globalisation surge, this development will be particularly reinforced because of the positive effects of higher imports on the efficiency and innovative capacity of businesses and, conversely, weakened in a deglobalisation scenario (see also box). Greater labour scarcity and higher productivity can be expected to lead to higher wages, which increase income available for consumption.

Exports are of particular importance for the largest industries of the manufacturing sector

The German growth model is based on a relatively high share of manufacturing in value added. In the year 2019, immediately prior to the coronavirus crisis, manufacturing accounted for around 21% of gross value added. The OECD average was 14%.²⁹ The three largest industries of the manufacturing sector in Germany are the production of motor vehicles and vehicle parts, which in 2018 made up around 20% of gross value added in manufacturing (in current prices, last available value), followed by mechanical engineering with around 16% and the metal products industries with close to 9%.³⁰

The three largest segments of the manufacturing sector based on value added also make a substantial contribution to Germany’s foreign trade (Figure 4). Motor vehicles and vehicle parts made up 17% and machines 15% of exports in 2019. These shares also changed only marginally in 2020 (16 and 15%).³¹ Metal products, on the other hand, account for around 3.4% and remain less important for exports than for value added in both 2019 and 2020.

Figure 4: Composition of foreign trade in 2020



Source: German Federal Statistical Office, KfW Research.

The importance of globalisation for individual sectors can also be measured by the amount of domestic value added that goes into the production of export goods and how many workers are necessary for this. Value added and the number of people employed in a sector can depend on exports both directly and indirectly. Indirect export dependence exists when goods and services are used as inputs by other enterprises in the production of export goods.³²

According to the Prognos study, some 12.6 million people – 28% of the total workforce – worked directly or indirectly for exports in 2019. Around 31% of gross value added relied on exports, representing nearly EUR 1 trillion.³³ Export dependence is higher in manufacturing both for value added (70%) and employment (67%) than in service industries (21% each). Besides, in manufacturing, direct export dependence is higher than indirect export dependence, while service industries tend to be indirectly involved in exports – in that

their products go into the exports of other enterprises (Figure 5).

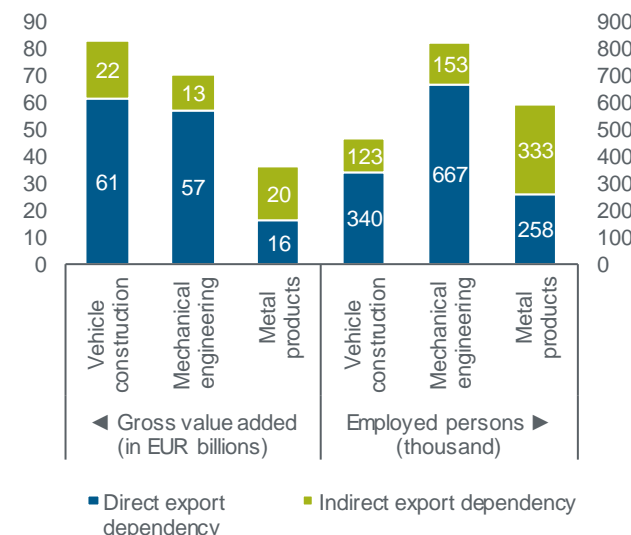
Figure 5: Export dependence in the manufacturing and services sectors



Source: Prognos (2021).

The motor vehicle industry, mechanical engineering and the manufacture of metal products account for around 41% of export-dependent workers and some 45% of export-dependent gross value added of the overall manufacturing sector.³⁴ From the perspective of the relevant sector, export dependency is also substantial (Figure 6). Thus, around EUR 83 billion or 73% of gross value added in the motor vehicle industry depends on exports.³⁵ Exports account for 77% of gross value added in mechanical engineering and 60% in the manufacture of metal products. In mechanical engineering and the manufacture of metal products, 82 and 64% of the workforce depend on exports and 77% of the motor vehicle industry workforce works for exports.

Figure 6: Export dependency of the three largest industries of the manufacturing sector

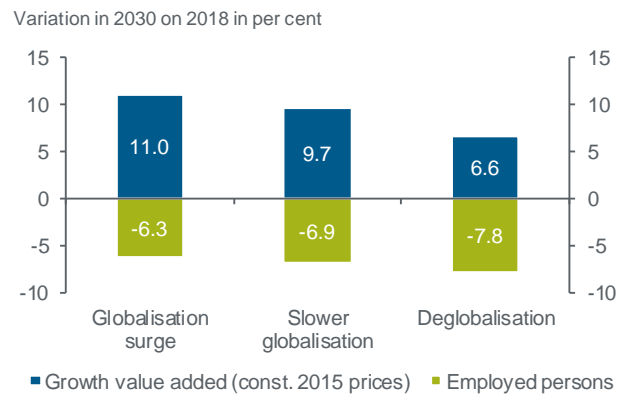


Source: Prognos (2021).

Strong deglobalisation would be the worst outcome for the largest industries of the manufacturing sector

In order to determine the impact of the various globalisation scenarios on the largest industries of the manufacturing sector, we have to start by identifying their effects on value added and employment for the economy as a whole. In the three scenarios, gross value added increases alongside the growth of real gross domestic product between 2018 and 2030 (Figure 7).³⁶ The number of persons in active employment, on the other hand, decreases to varying degrees as a function of the unemployment rate as well as the demographic trend and immigration. In the deglobalisation scenario, the unemployment rate is slightly higher than in the other scenarios.³⁷

Figure 7: Development of employment and value added



Source: Prognos 2021, KfW Research.

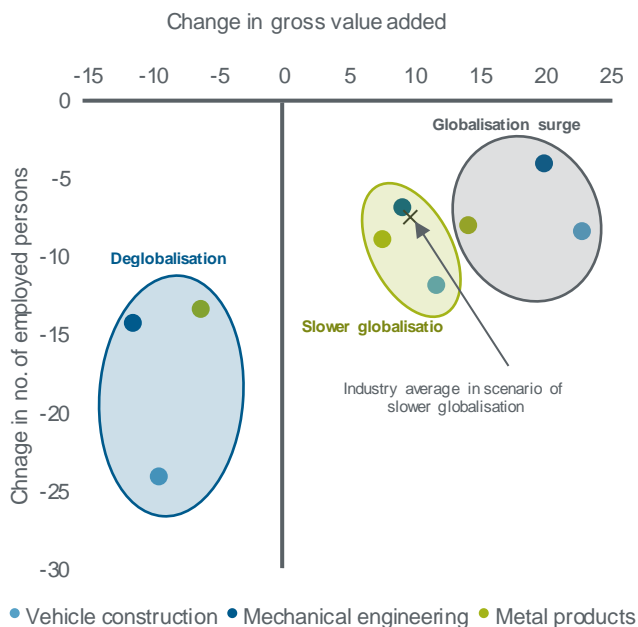
The three largest industries of the manufacturing sector – the motor vehicle industry, mechanical engineering and manufacture of metal products – are heavily dependent on exports. According to the Prognos study, the differences between the scenarios in the sector-specific development of gross value added and employment are therefore correspondingly high. This applies in particular to automotive and mechanical engineering but less to the manufacture of metal products. The industries would benefit from a globalisation surge and develop less favourably in a deglobalisation scenario than in continuing slowed globalisation.

A more detailed analysis reveals that in all three scenarios, a drop in employment is to be expected in the three largest industries of the manufacturing sector – the motor vehicle industry, mechanical engineering and the manufacture of metal products – as it is in the economy as a whole (Figure 8). As described in the Prognos report, in each of the three industries the number of persons in active employment would fall most sharply in a deglobalisation scenario while the lowest losses would occur in a globalisation surge. In the motor vehicle industry, employment already drops sharply in the scenario of slowed globalisation compared with mechanical engineering and the manufacture of metal products. The decline is also above average overall in a cross-industry comparison. This is also due to the advancing automation in this industry, which manifests itself in increasing capital intensity.³⁸ In the scenario of deglobalisation, the distance to the other two industries increases again significantly.

If slowed globalisation continues and taking into account other megatrends with long-term effects, gross value added by the automotive industry would develop at an above-average rate and that of mechanical engineering and the manufacture of metal products would develop at a (slightly) below-average rate compared with the average across all industries (Figure 8). A globalisation surge would provide additional impetus for gross value added by each industry, especially for automotive and mechanical engineering but less for the manufacture of metal products.

Figure 8: Impact of globalisation momentum on the three largest industries of the manufacturing sector

Variation between 2018 and 2030 in per cent



Source: Prognos 2021, KfW Research.

A broad deglobalisation, on the other hand, would have a distinctly negative impact on the three industries compared with a continuation of slowed globalisation. The effects of reduced export and import propensity, lower labour productivity growth and lower immigration would be so severe both in the automotive and mechanical engineering industry and in the manufacture of metal products that gross value added in these industries would be lower than that of the year 2018. This is a significant difference to the gross value added by the economy as a whole, which continues to grow even in the deglobalisation scenario.

The difference between the scenario of slowed globalisation and the scenario of deglobalisation is greatest in the value added by the automotive and mechanical engineering industries. Both industries exhibit high direct export dependence, so that a drop in the exports to GDP ratio is immediately felt there. In the manufacture of metal products, on the other hand, the export dependence of gross value added is mostly indirect, which should moderate the effect of lower export propensity across the economy as a whole. To be sure, given the higher share of imported inputs in the manufacture of metal products, it is to be expected that the development of

labour productivity resulting from the reduced import propensity in the case of deglobalisation would be slowed down more here than in the other two industries. However, this appears to be of secondary importance compared with the direct effects of reduced export and import-to-GDP ratios.

The three largest industries of the manufacturing sector, however, are in any case not the ones that show the most conspicuous variations in the scenario of continued slowed globalisation with respect to the development of gross value added and employment. After all, further factors besides globalisation determine the development of the industries up to 2030, including digitalisation, demographic change and skills shortages, among others. That is why some of the other industries show even sharper differences to the starting level in the year 2018. Employment, for example, certainly falls relatively sharply in the automotive industry but also in information and communications technology. With a view to gross value added, the manufacture of metal products develops comparatively poorly, but so does the construction industry. By contrast, the increase in gross value added in the pharmaceutical industry and in the computer devices, electronics and optical industry is even better than in the automotive industry.

Outlook

The continuation of slowed globalisation is regarded as the likeliest of the three globalisation scenarios analysed by the Prognos study. In this scenario, the external environment for German enterprises remains complicated. This is indicated by, among other things, the current developments in the conflict between China and the US and between China and the EU, which show no signs of easing in the short term. Furthermore, it is to be expected that countries will focus on their national interests when it comes to supporting the recovery of the economies. In other areas such as climate action, for example, international cooperation is urgently needed in order to define ambitious climate targets and promote investment in climate action by creating favourable enabling conditions.

German enterprises that have or are considering international operations are called upon to review and, where necessary, re-adjust their growth strategy even more strongly than in a favourable external environment. First, the experience of the coronavirus crisis and its impacts on global value chains may result in the need to make readjustments.³⁹ Second, adjustments may need to be made to the business model if the growth potential in international markets increases less strongly or is concentrated in selected market segments. If the slowed globalisation recorded in the past ten years continues, it is therefore to be expected that more time and effort must be invested in identifying and harnessing market opportunities. One option may consist in focusing more strongly on the domestic market. An alternative is to concentrate on selected internationally oriented segments, either by developing new export products or by tapping into new export markets in developing and emerging economies. These different approaches to developing new growth potentials in an environment characterised by weaker globalisation

momentum are described in more detail in the Prognos study and summarised in the Focus on Economics entitled 'Slowing globalisation pushes German enterprises to revise their growth strategies'.⁴⁰

Even if it is ultimately the enterprises that decide on their international supply and sales relationships and thereby determine the course of the globalisation process, it is up to politicians to create the enabling conditions for this. This offers the opportunity to actively shape globalisation against the backdrop of the international environment. The fundamentals for an internationally competitive economy that has technological leadership are created at home, for example through a research and educational landscape that facilitates the transformation of ideas into marketable products, helps

workers acquire skills and competences and increases enterprises' expertise and adaptability. The external component of such enabling conditions – such as an accessible European internal market and business certainty for internationally active enterprises through international agreements – requires Germany to remain committed to cooperating and working with other countries, especially within the context of the European Union.

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¹ Südekum, J. (2019), *Globalisierungsverlierer entschädigen (Compensating the losers of globalisation)* – our title translation, in German only), bpb Dossier 'Freihandel versus Protektionismus' (*Free trade vs. protectionism*).

² Source: UNTAD, KfW Research.

³ Prognos (2021), *Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (Globalisation in crisis – German enterprises need new growth strategies)* – our title translation, in German only), Basel.

⁴ Kneller, R. (2011), *Did the Container Increase International Trade? Initial Explorations*, wiiw Seminar in International Economics; St. Louis Fed On the Economy Blog, *The Role of Innovations in Global Trade: The Shipping Container*, Monday, December 28, 2020.

⁵ Direct measurement of transport costs is a complex issue, as it depends on distance and geographical location, market structures, links to transport networks and the efficiency of cross-border trade, among other factors. (Brown, J. et al. (2021), *International transport costs: Why and how to measure them?*, Transport for Development). That is why the CIF/FoB ratio is often used. While the export value is measured free on board (FoB), the value of imports is recorded including insurance and freight (CIF), so that the difference includes insurance and freight costs. (ECB (2016), *Understanding the weakness in global trade What is the new normal?*, Occasional Paper Series No. 178) However, the differences influenced not just by the costs, but also by exchange rate movements, the capture of special trading and the trading system used. (Marini, M. et al. (2018), *New Estimates for Direction of Trade Statistics*, IMF Working Paper No. 18/16).

⁶ ECB (2016), *Understanding the weakness in global trade What is the new normal?*, Occasional Paper Series No. 178.

⁷ WTO (2018), *World Trade Report: The future of world trade: How digital technologies are transforming global commerce*.

⁸ Baldwin, R. (2018), *A long view of globalisation in short: The New Globalisation*, Part 5 of 5, VOX, CEPR Policy Portal.

⁹ Calculations by KfW Research on the basis of UNCTAD data.

¹⁰ UN (2019), *International Migration*, Report.

¹¹ Ullrich, K. (2018), *International migration in a long-term perspective*, KfW Research.

¹² Cisco Visual Networking Index, various issues.

¹³ Calculations by KfW Research based on data from the CPB Global Trade Monitor (as at 21 May 2021).

¹⁴ Aslam, A. et al. (2017); *The Slowdown in Global Trade: A Symptom of A Weak Recovery*, IMF Working Paper No. 242.

¹⁵ Data source: World Bank, World Development Indicators.

¹⁶ Prognos (2021), *Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (Globalisation in crisis – German enterprises need new growth strategies)* – our title translation, in German), Basel.

¹⁷ Bown, C.P. (2021), *The US-China Trade War and Phase One Agreement*, PIIE Working Paper No. 21-2.

¹⁸ Köhler-Geib, F. et al. (2021), *The coronavirus and foreign trade – the crisis accentuates long-term trends*, Focus on Economics No. 323, KfW Research.

¹⁹ Abel-Koch, J. and Ullrich, K. (2020), *Short-term shock with lasting effects: The coronavirus crisis and international value chains*, Focus on Economics No. 309, KfW Research.

²⁰ Prognos (2021), *Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (Globalisation in crisis – German enterprises need new growth strategies)* – our title translation, in German only), Basel.

²¹ See WTO | *Dispute settlement - Appellate Body*.

²² Leuschner, V. and Ullrich, K. (2021), *Pragmatism in trade policy: regional trade agreements*, Focus on Economics No. 311, KfW Research.

²³ Shu, P. and Steinwender, C. (2019), *The impact of trade liberalization on firm productivity and innovation*. *Innovation Policy and the Economy*, 19(1), 39–68. Wagner, J. (2007), *Exports and productivity: A survey of the evidence from firm-level data*. *The World Economy*, 30(1), 60–82.

²⁴ Bräuer, R. et al. (2020), *Import Competition and Firm Productivity: Evidence from German Manufacturing*. Contributions to the 2020 annual conference of the German Economic Association: Gender Economics, ZBW - Leibniz Information Centre for Economics, Kiel, Hamburg; Shu, P. and Steinwender, C. (2019), *The impact of trade liberalization on firm productivity and innovation*. *Innovation Policy and the Economy*, 19(1), 39–68.

²⁵ Prognos (2021), *Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (Globalisation in crisis – German enterprises need new growth strategies)* – our title translation, in German only), Basel.

²⁶ At the time of the analysis in autumn of 2020, the forecast was for a steeper decline than what ultimately occurred. Accordingly, a shorter recovery phase is also expected at the time of publication of the analysis than at the time of the modelling.

- ²⁷ Prognos (2021), Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (*Globalisation in crisis – German enterprises need new growth strategies* – our title translation, in German only), Basel.
- ²⁸ Köhler-Geib, F. et al. (2021), The coronavirus and foreign trade – the crisis accentuates long-term trends, Focus on Economics No. 323, KfW Research.
- ²⁹ Data source: UNCTAD: Beyond 20/20 WDS - Gross domestic product: GDP by type of expenditure, VA by kind of economic activity, total and shares.
- ³⁰ Data source: German Federal Statistical Office, calculations by KfW Research.
- ³¹ Data source: German Federal Statistical Office, calculations by KfW Research.
- ³² Prognos (2021), Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (*Globalisation in crisis – German enterprises need new growth strategies* – our title translation, in German only), Basel.
- ³³ Prognos (2021), Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (*Globalisation in crisis – German enterprises need new growth strategies* – our title translation, in German only), Basel.
- ³⁴ The exports of the three largest industries of the manufacturing sector are even more important for the economy than these shares would initially suggest. The value added in other sectors of the economy also goes into the export of motor vehicles, machines and metal products in the form of inputs, so that a portion of the workforce in these economic sectors is also indirectly linked to exports through the automotive and automobile parts, machinery and metal products industries. The economic integration also affects other industries of the manufacturing sector, such as the production of rubber and synthetic products, metal production and processing and the repair and installation of machines and equipment, as well as services industries such as commerce, transport and storage, independent, scientific and technical services as well as job placement and labour hire services. (German Federal Statistical Office (2019), Automobilindustrie: Deutschlands wichtigster Industriezweig mit Produktionsrückgang um 7,1 % im 2. Halbjahr 2018 (*Automotive industry: Germany's most important industrial sector with 7.1% production drop in second quarter of 2018* – our title translation, in German only), Press release No. 139 dated 9 April 2019).
- ³⁵ Prognos (2021).
- ³⁶ Gross national product is determined by adding taxes on products to gross value added and subtracting subsidies on products.
- ³⁷ Prognos (2021), Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (*Globalisation in crisis – German enterprises need new growth strategies* – our title translation, in German only), Basel.
- ³⁸ Prognos (2021), Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (*Globalisation in crisis – German enterprises need new growth strategies* – our title translation, in German only), Basel.
- ³⁹ Abel-Koch, J. and Ullrich, K. (2020), Short-term shock with lasting effects: The coronavirus crisis and international value chains, Focus on Economics No. 309, KfW Research; Abel-Koch, J. (2021) KfW Internationalisation Report 2021 – Coronavirus crisis sends SMEs' international business tumbling, KfW Research.
- ⁴⁰ Prognos (2021), Globalisierung in der Krise – Die deutschen Unternehmen brauchen neue Wachstumsstrategien (*Globalisation in crisis – German enterprises need new growth strategies* – our title translation, in German); Abel-Koch, J. and Ullrich, K. (2021), Slowing globalisation pushes German enterprises to revise their growth strategies, Focus on Economics No. 349, KfW Research, forthcoming.