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Study

Importance of the German Economy for Europe

A vbw study, prepared by Prognos AG
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Preface

A strong German economy creates added value and employment in Europe

Germany achieved a current account surplus of about seven and a half per cent of its gross domestic product (GDP) in 2017. This high surplus prompts a strong response from critics of the German business model on a regular basis: from the US Administration, representatives of the European Union (EU) and many member states all the way to the International Monetary Fund. The success of the German economy's exports – so they claim – comes at the detriment of other states and especially our EU partners. Some of this criticism even goes as far as to demand that Germany should intentionally weaken its competitiveness in favour of its European partners.

This type of argumentation is absurd. A weakening of German industry would be nonsense in terms of economics – particularly from the perspective of the other EU member states. For almost all EU member states, Germany is the most or second-most important export market. The demand from Germany creates added value and employment throughout all of Europe, as our study has determined. Almost five million jobs in other EU member states are directly dependent on the demand for goods from Germany. Even just the German industry's demand for intermediate and capital goods secures 3.4 million jobs with our European partners.

The scenario calculations in this study show that an economic stagnation of Germany, as well as a weakening of our economy's competitiveness, would also harm the other European economies. Consequently, it would be fatal to abandon our success model of internationalisation. In addition to the German economy, this would also harm the entire European economy.

A strong EU needs strong member states, and a strong EU needs a strong Germany.

Bertram Brossardt
21. February 2018

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1 Executive Summary

A dynamic German industry has advantages for EU partner countries

Close trade links exist between the economies of highly developed countries. This economic intertwining is particularly pronounced among European countries. Through the creation of the European Single Market's structures in recent decades, it was possible to establish a highly differentiated international division of labour and hence an intensive exchange of goods.

As a consequence of these close trade links, economic developments in one country also influence its trading partners. This especially applies to Germany, which influences the economic dynamics of other countries as the largest economy within the EU. This current study already demonstrates this influence even when German imports from the European partner countries are considered in isolation. In the Czech Republic, Slovakia, the Netherlands or Austria, German demand for imported goods creates between just under 7 and over 8 per cent of the aggregate gross value added. Consequently, several hundreds of thousands of jobs are tied to it. Throughout the EU, German import demand secures a total of almost 4.9 million jobs. A very important factor within this context is the German industry's demand for intermediate and capital goods. More than 3.4 million people in the partner countries work on their production.

The demand for imports on the part of German industry is especially advantageous for the economies of Central European countries, as well as Germany's smaller Western European neighbours. The – usually Southern European – countries with weaker economic growth in recent years benefit less for two reasons: firstly, the geographical distance to Germany has a negative effect, and secondly, the industrial basis is not strong in these countries, which means that they can only manufacture the goods required by the German industry's production processes to a limited degree.

A scenario calculation confirms the importance of German industry for the European partner countries. If the German gross domestic product were to stagnate by 2020, the economic output of the other EU countries would decrease by a total of 13 billion euros compared to the baseline scenario, in which the German economy would expand by an annual average of 1.6 per cent from 2018 to 2020.

Another scenario calculation shows that a diminished competitiveness of German industry would offer no advantages to the other EU member states. On the contrary, if the price-related competitive position of German industry were to deteriorate due to higher wage dynamics, the economic output of EU partner countries would in total decline by about 9 billion euros.

These results show the major importance of German industry for the EU and confirm that a competitive and high-growth German industry does not cause disadvantages for the EU partner countries. Due to the intensive trade links among the EU member states, the European trading partners benefit to a greater degree from Germany's favourable economic development.

2 Background

How important is German industry to the EU partner countries?

German industry's large export surplus continues to be the focus of criticism, both inside and outside Europe. The American president recently threatened trade restrictions to reduce the imbalances. The target of this criticism is the highly competitive German industry and its export success is blamed for contributing to the weak economic development in other countries.

A look at the recent past shows distinct differences in growth within the European Union. A favourable development in Central Europe and especially in Germany with its strong industrial core contrasts primarily with the Southern European countries and their comparatively weak growth. Critics see the strong competitiveness of German industry as a major reason for this heterogeneous development.

Based on this background, the current study examines in three stages the importance of German industry to its partner countries in the EU and whether this has a positive or negative influence on their development.

In the first step, the export of goods from EU member states to Germany is quantified and shown by types of goods based on the Prognos World Trade Model.

In the second step, input-output tables are used to calculate the value added and employment that are associated with their production of goods exported to Germany in the respective countries of origin. The results show which countries benefit directly and to what degree from German demand for imports.

On the basis of a scenario analysis, the third step shows the overall economic consequences that a stagnating German industry would by 2020 have for the other European countries. The results demonstrate the degree to which Germany's favourable economic development has a positive effect on the EU. An additional scenario analysis examines the consequences of a decline in Germany's competitiveness on economic growth in the European Union.

3 Importance of German Import Demand for European Union Countries

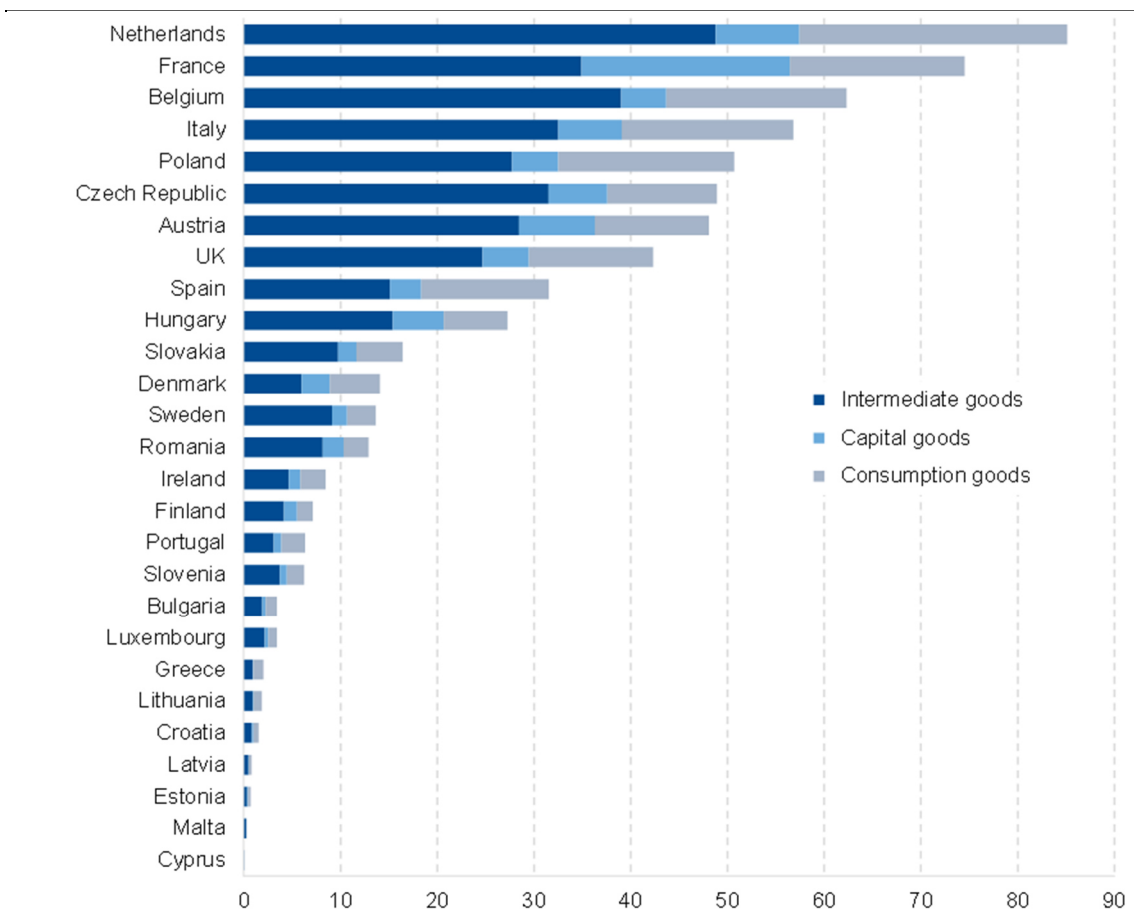
Germany is the most important export market for many EU member states

Some of German demand for industrial and consumer goods is satisfied by domestic providers; however, a large portion is covered by imports from foreign countries. The companies and countries that can provide the respective products and solutions to cover this demand benefit from this. The trade relations with the other partner countries of the European Union that are intertwined economically with Germany through the European Single Market are especially close.

In 2016, Germany imported goods with a total (nominal) value of 672 billion US dollars from the other countries of the European Union. The most important countries from which Germany obtained goods were the Netherlands, France and Belgium with an export volume of 85 billion, 75 billion and 62 billion US dollars respectively in 2016 (Fig. 1). With regard to Belgium and the Netherlands, the high values in these countries also include the Rotterdam-Antwerp effect, which skews the trade volumes upwards, but cannot be quantified in terms of an amount. The effect indicates distortions in trade data due to intra-community transfers of goods from non-EU countries. Goods that are transshipped in the ports of Antwerp or Rotterdam upon entry into the EU and then transported – unchanged – to the destination country (Germany, in this case) appear in the trade balances of Belgium or the Netherlands as exports to the destination country.

Italy follows in fourth place ahead of the two Central and Eastern European countries of Poland and the Czech Republic, as well as Austria. The high ranking of the CEE countries illustrates the internationalisation strategy of the German industrial sector over recent decades. Especially after the expansion of the European Union to the East, many German companies also extended their value-creation chains to countries in Central and Eastern Europe.

Fig. 1

German imports of goods from the EU by country of origin and use in 2016 (in billion US dollars)

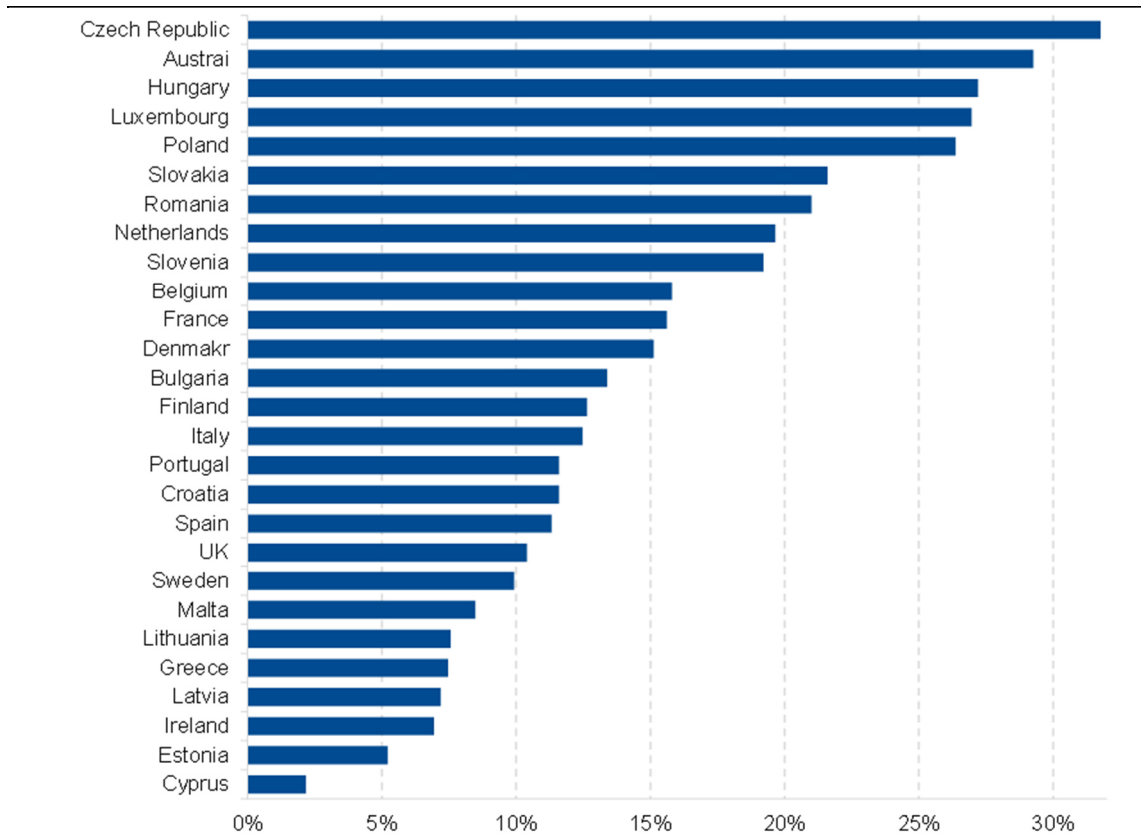
Sources: UN Comtrade 2018 and calculations by Prognos AG

German industry and its need for intermediate and capital goods accounted for about 70 per cent of the demand for goods imported by Germany from countries of the European Union. Intermediate goods are used by German industry for further processing in its production processes. Capital goods – such as machines and equipment – are also used by German industry as commercial consumer goods in its industrial production processes. Consumer goods account for the remaining 30 per cent of German import demand.

For many countries of the European Union, Germany is the most important foreign market. Significantly more than one-quarter of all exports from Austria, Hungary, Luxembourg and Poland go to Germany. For the Czech Republic, the share is even greater than 30 per cent (Fig. 2).

Fig. 2

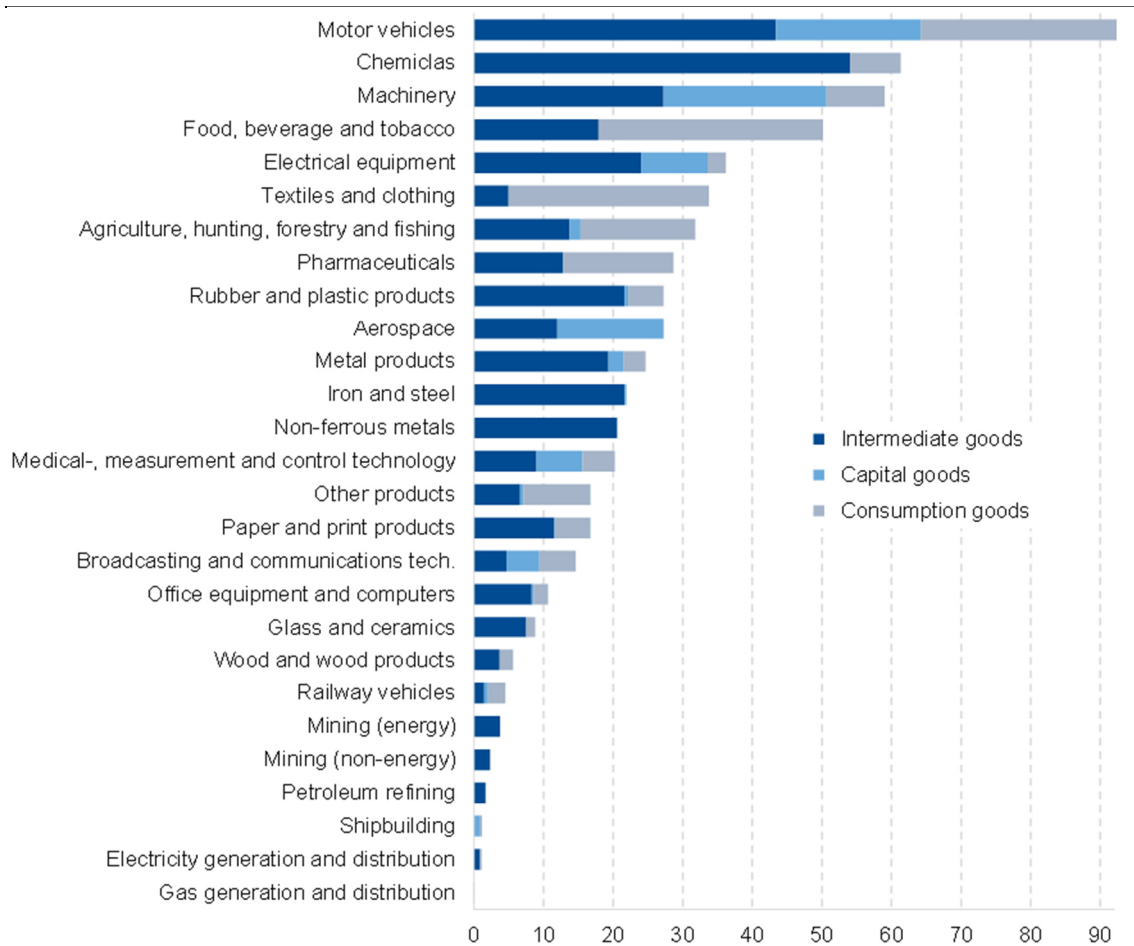
Share of exports to Germany of total exports by EU countries in 2016 (in %)



Sources: UN Comtrade 2018 and calculations by Prognos AG

The most important individual sector with regard to goods from the European Union countries is the automobile industry. In 2016, this strongly collaborative industrial sector imported intermediate, capital and consumer goods valued at more than 96 billion euros (Fig. 3). This was followed by the chemical and mechanical engineering industries, where demand is almost exclusively for intermediate and capital goods. On the other hand, the food, beverage and tobacco sector imported an above-average volume of consumer goods in fourth place.

Fig. 3

German import of goods from the EU by sectors and use in 2016 (in billion US dollars)

Sources: UN Comtrade 2018 and calculations by Prognos AG

The data ultimately show that German demand for imported goods induces production to a large extent – and so also added value and employment – in the other countries of the European Union. The analysis of German imports according to their use shows that intermediate and capital goods account for more than two thirds. This illustrates the importance of German industry production to economic development in the partner countries of the European Union.

4 Value-Added and Employment Effects of German Import Demand

German Import demand ensures added value and employment in Europe

The first step of the study showed that German demand for goods is very important to many of the European partner countries. This does not illustrate the extent to which the production of goods imported by Germany creates value in the respective sourcing countries and consequently ensures employment.

In the following section, these effects are calculated on the basis of the findings from Section 3. This illustrates the respective value created by exports to Germany in each of the EU countries. Based on the country-specific input-output tables, these calculations are computed at an individual sector level. In combination with country-specific productivity ratios, this enables the size of the related working population to be estimated. The results show how economically important the German demand for goods is to the other European Union countries.

4.1 Value-added effects

The production value of goods produced only partially stems from the respective industry's and the respective country's own value added. The rest is based on intermediate goods from other economic sectors (also beyond the industrial sector) in their own country or from other countries. This situation is explicitly taken into account in the calculation of the gross value added using the input-output tables that statistically illustrate the country-specific interrelated structures. By means of the input-output analysis, it is possible to infer the respective value added from the recorded intermediate goods for each country and each industrial sector. However, the ratio of demand for intermediate goods to the associated value added can show very different results for specific countries and sectors.

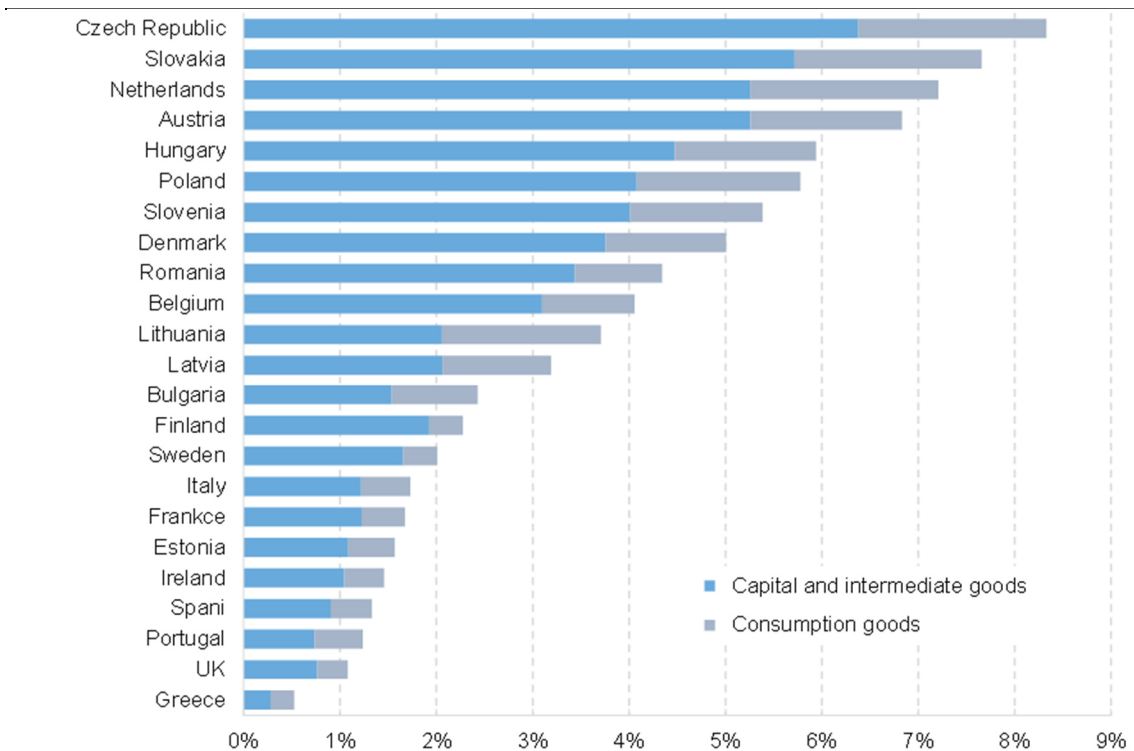
If the data determined in Section 3 are combined with the country-specific input-output tables, the further analysis demonstrates that the Czech Republic benefits most from the German demand for goods (Fig. 4). So a good 8 per cent of the total Czech economic output is generated by demand for goods from Germany. In Slovakia, the Netherlands and Austria, this value is also high at about 7 per cent.

With an average of about 70 per cent in the countries included in the analysis, the gross value added effects associated with imports to Germany can be traced back to intermediate and capital goods. In Finland and Sweden, this share is even 85 and 82 per cent respectively of the induced gross value added. In other countries, however, the export of consumer goods to Germany plays a more significant role.

This especially applies to Greece and Lithuania, where the share of consumer goods is almost 50 per cent of the respective induced gross value added.

Fig. 4

Share of gross value added induced by the export of goods to Germany in relation to the aggregate gross value added (GVA) by country in 2016



Source: Prognos AG 2018

In the bigger economies, the share of gross value added induced by goods exported to Germany is rather low. It is only 1.7 per cent in France and Italy, even though these countries are among Germany's most important trading partners in terms of the absolute value of their exports to Germany (cf. Fig. 1). In addition to the size of these economies, the reason for this relatively minimal dependency on German demand for goods is their comparatively low export ratio. This ratio describes the relationship between exports and gross domestic product (GDP), which is only about 30 per cent in the case of France. In smaller, open economies with a strong industrial sector such as the Czech Republic (83 per cent), the export ratio is usually significantly higher, which also means a stronger (both positive and negative) dependency on foreign demand. Another factor influencing the degree of induced effects is the country-specific trading partner structure. In the case of the Czech Republic, it is very strongly oriented towards the German market: about one-third of all Czech exports go to Germany. Although the German market is also important to France with a share of 16 per cent, the French export markets are more diversified.

When looking at absolute gross value added induced by exports to Germany, it becomes apparent that the greatest effect occurs in the Netherlands with 44 billion euros. France (32 billion euros) and Italy (25 billion euros) follow in second and third place. Due to the size of these two economies, their comparatively small percentage shares described above are still substantial absolute effects. Overall, the gross value added induced by the export of goods to Germany for all European Union countries comes to about 246 billion euros or 2.6 per cent of the total gross value added. Demand for intermediate and capital goods accounts for about 180 billion euros (1.9 per cent).

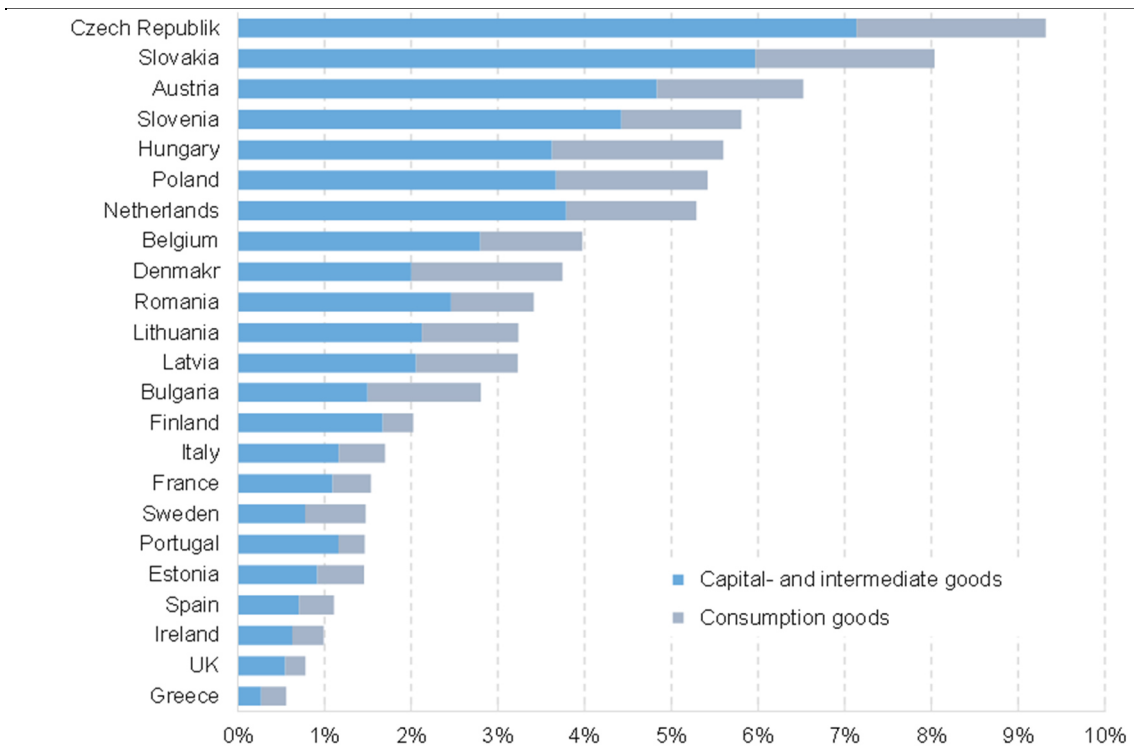
4.2 Employment effects

The induced value added in each country of the European Union calculated in the previous section correlates with positive employment effects. The extent of these effects is estimated using the country-specific input-output tables. Since the tables show the sector- and country-specific productivity, it is possible to deduce the corresponding employment from the previously determined value-added effects. Since the individual countries have different levels of productivity, there is no fixed ratio between the value-added and employment effects. The employment effects associated with German demand for goods are all the greater in keeping with the labour-intensive nature of production in a particular economic sector or country.

When comparing the countries in terms of the resulting employment effects, the Czech Republic is also the country for which German demand for goods plays the relatively biggest role: about 9 per cent of the Czech Republic's total labour force works directly or indirectly in the production of goods that are exported to Germany (Fig. 5). With a share of 8 per cent, the situation is similar in Slovakia. Austria, Slovenia, Hungary, Poland and the Netherlands form another group of countries with an above-average dependence on exports to Germany. In these countries, the share of jobs created by the export of goods to Germany is also well above 5 per cent. Overall, the relative importance of German demand for goods shows a structure similar for employment in the individual countries to that for the gross value added. As a result, the majority of employment effects can also be attributed to the demand for intermediate and capital goods.

Fig. 5

Share of jobs created by the export of goods to Germany by country in 2016 (in % of all jobs)



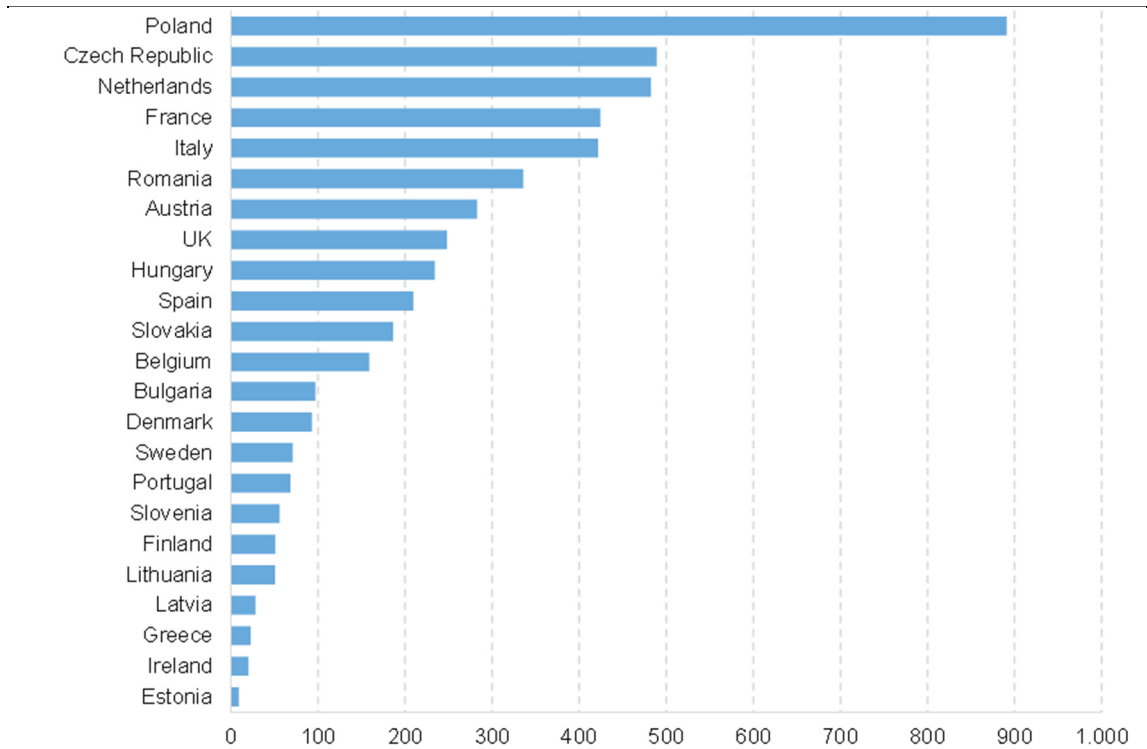
Source: Prognos AG 2018

Measured in terms of the absolute number of jobs that are directly or indirectly associated with German demand for goods, Poland tops the list with a good 890,000 employees (Fig. 6). This is followed at a distance by the Czech Republic (about 490,000), the Netherlands (480,000), France (430,000) and Italy (420,000).

In total, the imports to Germany ensure more than 4.9 million jobs or 2.7 per cent of total employment in the other EU countries. Of this amount, about 3.4 million jobs or 1.8 per cent of total employment is due to the German demand for intermediate and capital goods.

Fig. 6

Share of jobs created by the export of goods to Germany by country in 2016 (in thousands)



Source: Prognos AG 2018

5 German Industry as the Driver of Growth and Employment in Europe

German stagnation slows growth in the rest of the EU

The previous input-output analysis illustrates how German demand for import goods generates gross value added and employment on an appreciable scale. This statistical perspective can be complemented by a look at the future: the importance of the German economy for economic dynamics in the rest of Europe can be shown on the basis of model-based scenario calculations. The result clearly illustrates the role played by Germany as regards the growth of value added and employment in Europe. The VIEW world economic model by Prognos compares the various scenarios with each other for this purpose.

- The baseline scenario forms the most likely economic development in the 42 economically most important countries in the world, including Germany and the other countries of the EU (cf. Appendix, page 23 for the VIEW Model). In the baseline scenario, the German economy will expand by an average of 1.6 per cent annually between 2018 and 2020.
- The alternative Stagnation scenario modifies the VIEW model so that the gross domestic product (GDP) in Germany stagnates in the medium term from 2018 to 2020. In this model, the stagnation is realised by a respective decline in domestic demand.

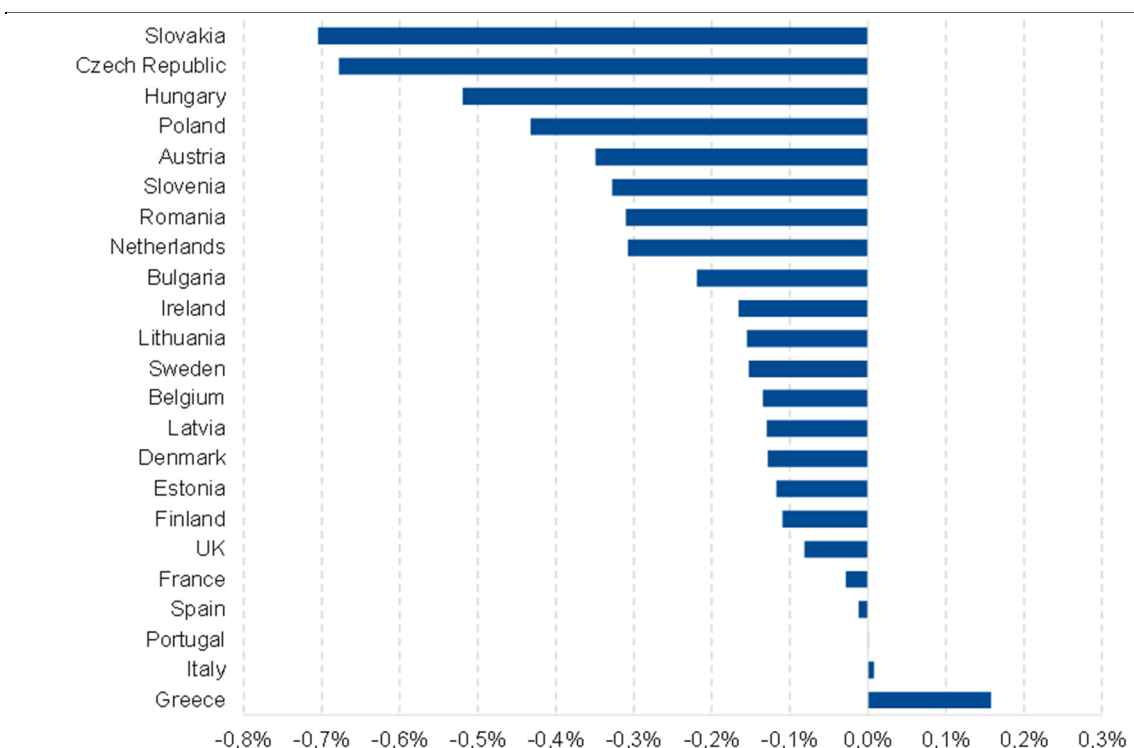
The stagnation of the German economy within the time period under consideration would have two direct effects on the other countries included in this model: firstly, the German demand for imports would be below the level of the baseline scenario. As a result, the trading partners could not export as much to Germany. This effect would dampen growth in the other countries. At the same time, there would be a second effect: stagnation of the German economy would reduce the inflation rate and the overall aggregate utilisation rate in the euro zone. This would decrease the level of interest rates since the European Central Bank (ECB) would respond to such a development by cutting rates. This effect would have positive impact on the euro zone since a lower interest rate would stimulate investments and facilitate fiscal consolidation in countries with a high debt level. The respective importance of the export business with Germany, the investments' responsiveness to interest rates (as well as other country specifics) would ultimately decide whether the negative export effect or the stimulating interest effect is predominant in a particular EU country.

According to our baseline scenario, the German economy will grow by an average of 1.6 per cent per annum between 2018 and 2020. In the alternative scenario considered, the German gross domestic product (GDP) will stay at the level of the year 2017 until 2020. In 2020, German economic performance in the Stagnation scenario is more than 5 per cent or almost 160 billion euros lower than in the baseline scenario.

The countries considered in the model are systematically linked to each other through exports, imports, exchange rates, etc. The above-described effects of stagnation in the German economy are transferred accordingly to other countries. Across all countries of the European Union, the dampening trade effect would ultimately predominate. Economic performance in countries of the European Union (excluding Germany) would be 13 billion euros lower in the Stagnation scenario than in the baseline scenario.

Fig. 7

Deviation of real GDP in the Stagnation scenario in 2020 (in %)



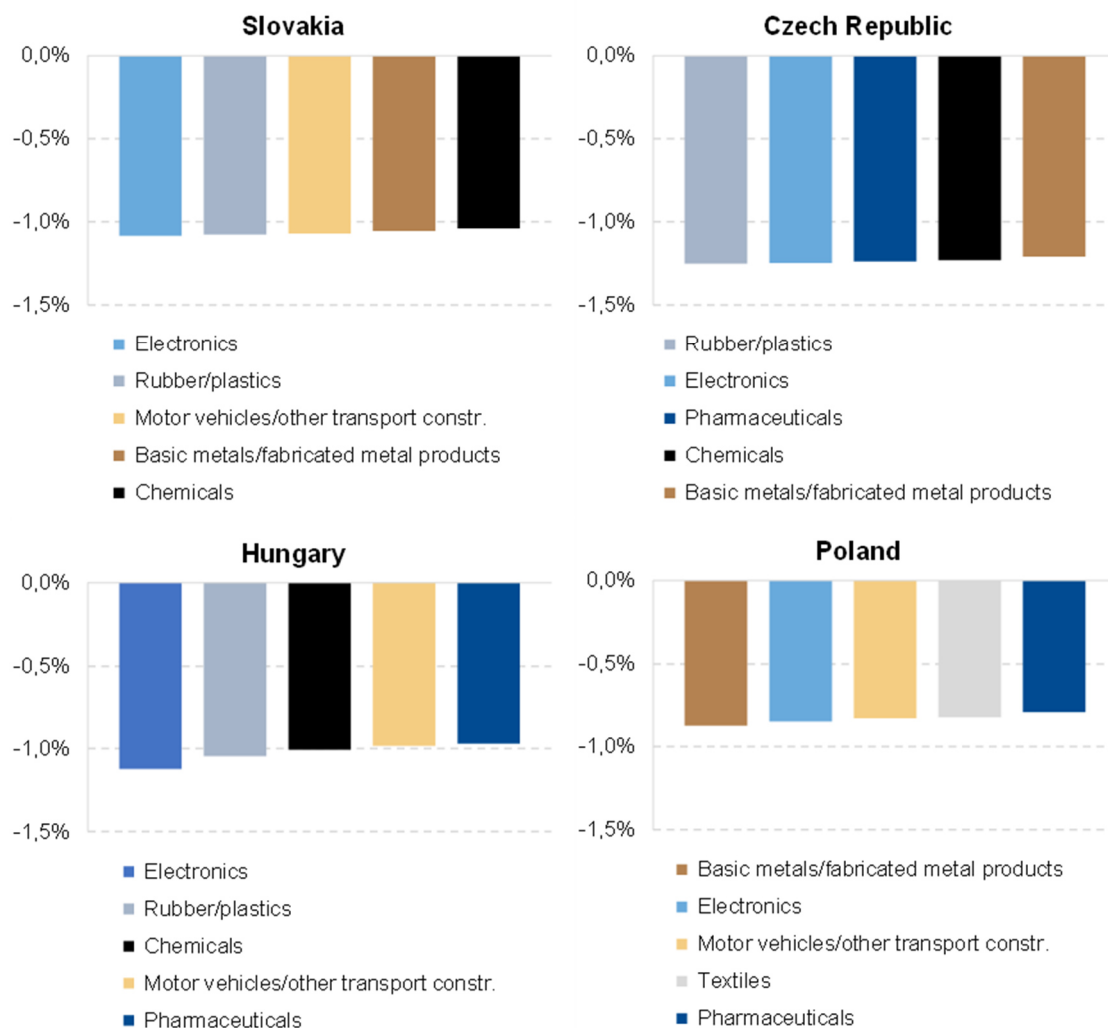
Source: Prognos AG 2018

The effects in the individual countries are varied. But above all, there would be a particularly strong negative impact on the high-export economies of Central and Eastern Europe. Countries such as Slovakia, the Czech Republic or Hungary are – as shown by the statistical analyses in the previous sections – especially closely linked with Germany or the value-added chains of German industry and would suffer most from a weakness in German demand (Fig. 7). On the other hand, the large Western European economies such as France and Spain would be less affected. In some countries, especially Greece, there would even be a slight positive overall effect due to the lower interest rates.

The lack of German growth dynamics would have varying effects on the individual sectors. Manufacturing sectors in particular would feel above-average impact due to the very closely interconnected value-added chains throughout Europe. A look at the countries that would be most affected – Slovakia, the Czech Republic, Hungary and Poland – shows that the electronics industry, for instance, that is closely linked with Germany in each of these countries would suffer appreciable losses (Fig. 8).

Fig. 8

Deviation of real gross value added in the Stagnation scenario in 2020 in the most affected countries and economic sectors (in %)



Source: Prognos AG 2018

The service sectors would be less affected since they are on average much less tied to the international value-added chains. It is, above all, second-round effects emerging across the entire economy due to lower demand that have an impact on the service sector.

6 Importance of the German Economy's Competitiveness

A less competitive German economy would harm the EU

In contrast to the other European economies, the German economy has developed very dynamically in recent years. In the course of this boom in Germany, criticism has often been voiced that both the high-price- and non-price-related competitiveness of German products is harming the other European economies. In the light of these discussions, a further scenario examines the role that the competitiveness of German industry and its products plays in the development of the other EU countries.

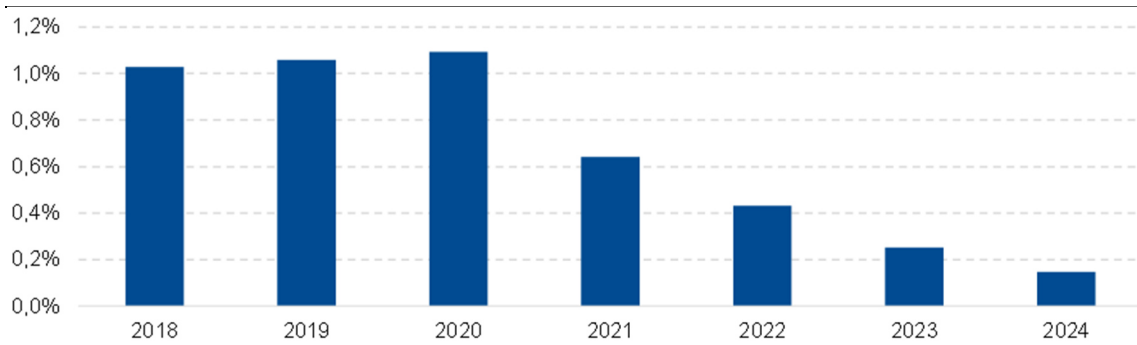
The VIEW world economic model once again serves as the basis for scenario calculations. In comparison to the baseline scenario, the alternative scenario of Higher Unit Labour Costs simulates a stronger increase in the average hourly wage from 2018 to 2020 (plus 1.0 percentage points in comparison to the baseline scenario respectively). The results also show the dynamics of unit labour costs up to 2020 at about one percentage point higher (Fig. 9). After 2020, no more impulses are set and the dynamics of the unit labour costs once again approach those of the baseline scenario.

The intervention would lead to a variety of consequences in the model:

- German exports would be deflated due to the lower price competitiveness. The relative price competitiveness of other countries would improve accordingly.
- German import demand would be deflated. Germany's trading partners would be correspondingly less able to sell to the German market than in the baseline scenario.
- Unit labour costs in Germany and hence prices would therefore be above the reference level. Imports from Germany would become more expensive in other countries and the inflation rate would also increase there. The overall result would be accelerated price dynamics in the euro zone. This would increase interest rates, whereby the investment dynamics in the euro zone would be curbed.

The higher growth in unit labour costs would therefore have an impact on economic development in Germany and the other countries through a number of channels.

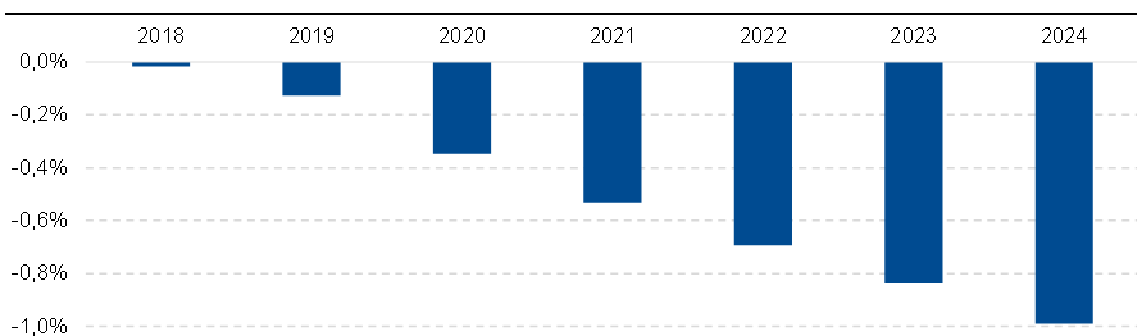
Fig. 9

Deviation of unit labour costs in the Higher Unit Labour Costs scenario in Germany from 2018 to 2024 (in %)

Source: Prognos AG 2018

In Germany, overall economic development would react negatively to higher unit labour costs. In 2024, economic performance in the alternative scenario would be almost 1.0 per cent below the level of the baseline scenario in this case (Fig. 10). German exports in particular would experience a distinct decline due to the unit labour cost shock. Because of the resulting accelerated price dynamics, a higher interest level would additionally cause investments and state consumption to be significantly lower compared to the baseline scenario. The higher unit labour cost dynamics would have hardly any impact on the development of private consumption and import dynamics. Although private consumption would benefit from higher wages, it would simultaneously suffer from the higher inflation rate.

Fig. 10

Deviation of real GDP in the Higher Unit Labour Costs scenario in Germany in comparison to the baseline scenario from 2018 to 2024 (in %)

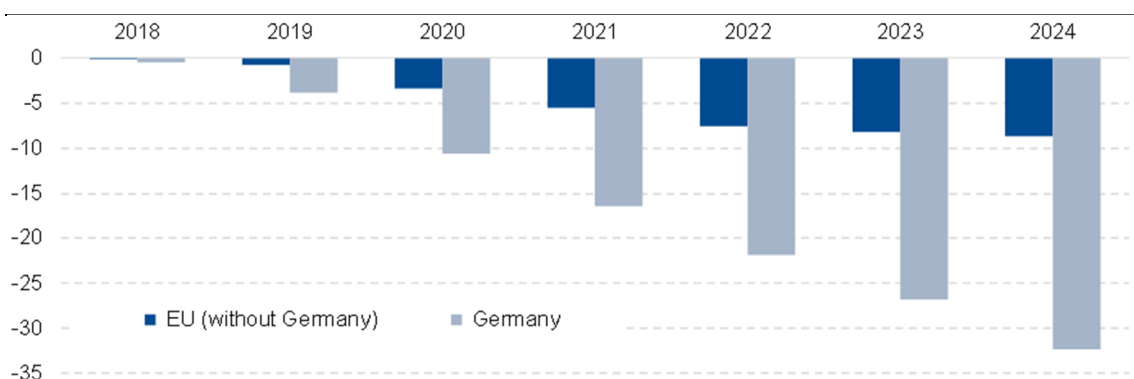
Source: Prognos AG 2018

As described above, higher German unit labour costs would have various and also opposing consequences for the other EU countries. On the one hand, German exports would decrease and this could cause gains in shares of third markets for the other countries to Germany's detriment. On the other hand, Germany's import demand would drop and this would have a negative impact on exports to Germany. In addition, imports from Germany would become more expensive in the other countries. The consequences would be an increase in the price and interest rate level, which would curb the investment dynamics.

In terms of the overall economic impact, the negative effects would predominate. The overall economic performance in countries of the European Union (excluding Germany) in 2024 would be 9 billion euros lower in the Higher Unit Labour Costs scenario than in the baseline scenario. For Germany, this decline would even amount to more than 32 billion euros (Fig. 11).

Fig. 11

Deviation of GDP in the Higher Unit Labour Costs scenario in comparison to the baseline scenario from 2018 to 2024 (in billions of euros)



Source: Prognos AG 2018

Appendix

The VIEW Model

VIEW is a comprehensive macro-economic model that covers 42 countries and therefore more than 90 per cent of the global economy. In addition to the creation and use of the goods and services produced, it also covers the employment market and public finances. In the process, all of the countries involved are systematically connected with each other via exports, imports, exchange rates, etc. With the help of this global prognosis and simulation model, it is possible to depict the future development of the global economy and the individual economies in a detailed and consistent manner. Interactions and feedback effects between the individual countries are explicitly recorded and modelled in the model. Consequently, its analytical informative value extends far beyond the isolated country models with exogenous framework conditions of global economics.

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All information in this publication relates on principle to both genders.
In most cases we have refrained from adding the female form
to ensure better readability.

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