
# On a bumpy road into summer break

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German auto industry: Intensifying trade policy, cyclical and regulation problems. The German auto industry is faced with a number of challenges: US trade policy, the consequences of the Brexit decision, a cyclical slowdown in many car markets, the impact of the still unresolved diesel scandal and delivery delays caused by the new WLTP test. Each of these problems is quite serious on its own. But since the overall economic environment is still quite favourable, they will probably not be sufficient to generate a “perfect storm”. Nevertheless, the clouds on the horizon are darkening, and the sector is already experiencing a slowdown. In fact, the number of cars produced in Germany is likely to decline in 2018. The production index, which also includes qualitative elements, points to growth of roughly 1%. Since the auto industry is an important customer of other industrial and services sectors, the economy as a whole would inevitably suffer if one or more of the problems mentioned above escalated. Developments in the auto industry are therefore particularly relevant for economists right now.

Retail trade to remain stable, despite several challenges. Retail sales remain resilient despite the economic slowdown. Digitalisation and new business models create pressure on traditional retail traders. Size matters if a company wants to keep up with digitalisation. Franchise shops and smaller retailers in the country will have to deal with numerous challenges. Cash registers may become a thing of the past

The view from Berlin: Merkel unlikely to topple over EU Council benign outcome. Asylum policy – and thus the German government crisis – topped the agenda of the EU summit. The Council conclusions addressed major topics of the asylum dispute (e.g. secondary migration) and offered a combination of European and national responses. However, CDU and CSU still diverge over the compromise and – following Interior Minister Seehofer’s offer to resign – announced to resume further talks over the day (Monday). But even if the discord between the two sister parties is not bridged and triggers a political chain reaction, we still consider snap elections a rather unlikely option.

# On a bumpy road into summer break

Economic forecasts

| | Real GDP (% growth) | | | Consumer Prices* (% growth) | | | Current Account (% of GDP) | | | Fiscal Balance (% of GDP) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2018F | 2019F | 2017 | 2018F | 2019F | 2017 | 2018F | 2019F | 2017 | 2018F | 2019F |
| Euroland | 2.6 | 2.1 | 1.7 | 1.5 | 1.8 | 1.6 | 3.5 | 3.3 | 2.7 | -0.9 | -0.6 | -0.6 |
| Germany | 2.2 | 2.0 | 1.8 | 1.8 | 1.6 | 1.8 | 8.0 | 6.8 | 6.4 | 1.2 | 1.2 | 1.0 |
| France | 2.3 | 1.8 | 1.6 | 1.2 | 1.9 | 1.5 | -0.6 | -0.4 | -0.4 | -2.6 | -2.1 | -2.8 |
| Italy | 1.5 | 1.3 | 1.0 | 1.3 | 1.2 | 1.5 | 2.9 | 3.1 | 3.2 | -2.3 | -1.7 | -1.2 |
| Spain | 3.0 | 2.8 | 2.5 | 2.0 | 1.5 | 1.7 | 1.9 | 1.6 | 1.4 | -3.1 | -2.1 | -1.3 |
| Netherlands | 2.9 | 2.5 | 2.5 | 1.3 | 1.3 | 1.8 | 10.5 | 10.2 | 10.1 | 1.1 | 0.5 | 0.4 |
| Belgium | 1.7 | 1.9 | 1.8 | 2.2 | 1.9 | 1.7 | -0.2 | -0.7 | -1.0 | -1.0 | -1.0 | -1.0 |
| Austria | 3.1 | 3.0 | 2.3 | 2.2 | 2.1 | 1.8 | 1.9 | 2.4 | 2.7 | -0.7 | -0.6 | -0.3 |
| Finland | 2.7 | 2.3 | 2.1 | 0.8 | 1.2 | 1.4 | 0.7 | 0.5 | 0.5 | -0.6 | -0.3 | -0.3 |
| Greece | 1.3 | 2.3 | 2.2 | 1.1 | 0.6 | 1.0 | -0.8 | -0.5 | 0.0 | 0.8 | 1.5 | 2.0 |
| Portugal | 2.7 | 2.2 | 1.7 | 1.6 | 1.0 | 1.5 | 0.7 | 0.4 | 0.2 | -3.0 | -1.0 | -1.0 |
| Ireland | 7.8 | 5.4 | 3.3 | 0.3 | 1.0 | 1.3 | 12.5 | 6.0 | 3.0 | -0.3 | 0.1 | -0.4 |
| UK | 1.7 | 1.3 | 1.6 | 2.7 | 2.4 | 2.1 | -3.9 | -3.8 | -3.5 | -1.5 | -1.9 | -1.4 |
| Denmark | 2.3 | 2.0 | 1.9 | 1.1 | 1.5 | 1.6 | 7.8 | 7.5 | 7.0 | 0.9 | -0.5 | -0.5 |
| Norway | 2.0 | 2.2 | 2.0 | 1.9 | 1.9 | 1.8 | 5.5 | 6.0 | 5.5 | 4.4 | 4.0 | 5.0 |
| Sweden | 2.5 | 2.7 | 2.4 | 1.8 | 1.9 | 2.0 | 3.3 | 4.0 | 4.0 | 1.3 | 1.0 | 0.5 |
| Switzerland | 1.1 | 2.2 | 1.8 | 0.5 | 0.5 | 0.6 | 9.8 | 11.2 | 11.4 | 0.6 | 0.2 | 0.2 |
| Czech Republic | 4.6 | 3.4 | 3.1 | 2.5 | 2.1 | 2.2 | 1.0 | 0.6 | 1.1 | 1.6 | 0.8 | 0.6 |
| Hungary | 4.0 | 3.8 | 3.2 | 2.3 | 2.9 | 3.3 | 2.9 | 1.9 | 1.5 | -2.0 | -2.2 | -2.3 |
| Poland | 4.6 | 4.2 | 3.4 | 2.0 | 2.0 | 2.8 | 0.3 | -0.8 | -1.1 | -1.6 | -2.0 | -2.3 |
| United States | 2.3 | 3.0 | 2.8 | 2.1 | 2.6 | 2.1 | -2.9 | -3.2 | -3.5 | -3.4 | -3.9 | -4.6 |
| Japan | 1.7 | 0.8 | 0.5 | 0.5 | 0.7 | 0.6 | 4.0 | 4.1 | 4.4 | -2.8 | -2.6 | -2.4 |
| China | 6.9 | 6.6 | 6.3 | 1.6 | 2.0 | 2.4 | 1.3 | 0.6 | 0.3 | -3.7 | -3.5 | -3.5 |
| World | 3.8 | 3.9 | 3.9 | 2.9 | 3.2 | 3.2 | | | | | | |

*Consumer price data for European countries based on harmonized price indices except for Germany. This can lead to discrepancies compared to other DB publications.
Sources: National Authorities, Deutsche Bank

Forecasts: German GDP growth by components, % qoq, annual data % yoy

| | | | | | 2018 | | | | 2019 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2016 | 2017 | 2018F | 2019F | Q1 | Q2F | Q3F | Q4F | Q1F | Q2F | Q3F | Q4F |
| Real GDP | 1.9 | 2.2 | 2.0 | 1.8 | 0.3 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 |
| Private consumption | 2.1 | 1.8 | 1.6 | 1.5 | 0.4 | 0.7 | 0.5 | 0.5 | 0.3 | 0.4 | 0.3 | 0.2 |
| Gov't expenditure | 3.7 | 1.5 | 0.6 | 1.0 | -0.5 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Fixed investment | 3.1 | 3.3 | 4.0 | 3.5 | 1.7 | 1.3 | 1.0 | 0.8 | 1.0 | 0.9 | 0.9 | 0.8 |
| Investment in M&E | 2.2 | 4.0 | 4.5 | 3.0 | 1.2 | 1.0 | 1.0 | 0.5 | 1.0 | 0.7 | 0.7 | 0.5 |
| Construction | 2.7 | 2.8 | 4.7 | 4.9 | 2.1 | 1.8 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Inventories, pp | -0.2 | 0.2 | -0.2 | 0.0 | -0.1 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Exports | 2.6 | 4.6 | 3.8 | 4.5 | -1.0 | 1.2 | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 | 1.2 |
| Imports | 3.9 | 5.2 | 3.4 | 5.1 | -1.1 | 1.4 | 1.4 | 1.4 | 1.2 | 1.2 | 1.1 | 1.2 |
| Net exports, pp | -0.3 | 0.1 | 0.4 | 0.0 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Consumer prices* | 0.5 | 1.8 | 1.6 | 1.8 | | | | | | | | |
| Unemployment rate, % | 6.1 | 5.7 | 5.2 | 4.9 | | | | | | | | |
| Industrial production | 1.4 | 3.0 | 1.8 | 1.5 | | | | | | | | |
| Budget balance, % GDP | 1.0 | 1.2 | 1.2 | 1.0 | | | | | | | | |
| Public debt, % GDP | 68.2 | 64.1 | 60.3 | 57.0 | | | | | | | | |
| Balance on current account, % GDP | 8.5 | 8.0 | 6.8 | 6.4 | | | | | | | | |
| Balance on current account, EUR bn | 268.8 | 262.5 | 229 | 225 | | | | | | | | |

*Inflation data for Germany based on national definition. This can lead to discrepancies to other DB publications.
Sources: Federal Statistical Office, German Bundesbank, Federal Employment Agency, Deutsche Bank Research

# German auto industry: Intensifying trade policy, cyclical and regulation problems

— The German auto industry is faced with a number of challenges: US trade policy, the consequences of the Brexit decision, a cyclical slowdown in many car markets, the impact of the still unresolved diesel scandal and delivery delays caused by the new WLTP test.

— Each of these problems is quite serious on its own. But since the overall economic environment is still quite favourable, they will probably not be sufficient to generate a "perfect storm". Nevertheless, the clouds on the horizon are darkening, and the sector is already experiencing a slowdown. In fact, the number of cars produced in Germany is likely to decline in 2018. The production index, which also includes qualitative elements, points to growth of roughly 1%.

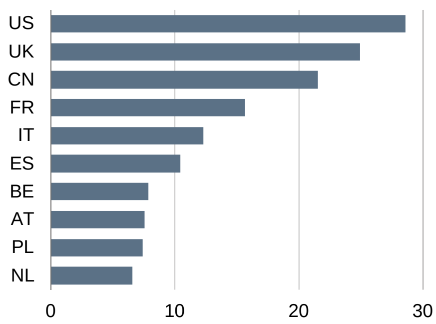
— Since the auto industry is an important customer of other industrial and services sectors, the economy as a whole would inevitably suffer if one or more of the problems mentioned above were to escalate. Developments in the auto industry are therefore particularly relevant for economists right now.

On average, German car producers released quite encouraging economic figures in the last few quarters; in fact, they managed to increase their sales in many important markets around the world. The sector is, indeed, quite competitive at the global level. This may astonish some of our readers, particularly in Germany. While the auto industry has recently done well, it has generated numerous negative headlines in the last few years, and these headlines often dominated public perception. And indeed, not all is well in the sector. In fact, trade policy, cyclical and regulatory developments are increasingly giving cause for concern, and to some extent, the sector itself has created its own problems. This may have an impact on Germany's economy as a whole.

## US more likely to introduce import tariffs on cars

US are the most important export market for the German auto industry 1

German auto exports by export markets, 2017, EUR bn




Source: Federal Statistical Office

In the last few weeks and months, US President Trump has repeatedly threatened to introduce higher tariffs on imported cars, for example from Europe or China. Right now, it seems unlikely that Trump might be willing to take a calm look at the transatlantic trade relationships as a whole, i.e. including not only the goods, but also the services and primary and secondary income balances. Across all segments of the current-account balance, the US generated a surplus over the EU in 2017[1]. It is therefore (unfortunately) useless to discuss whether higher import tariffs would help or harm US interests in the medium term or to analyse how convincing the US government's arguments are. All in all, tariffs have undoubtedly become more probable.

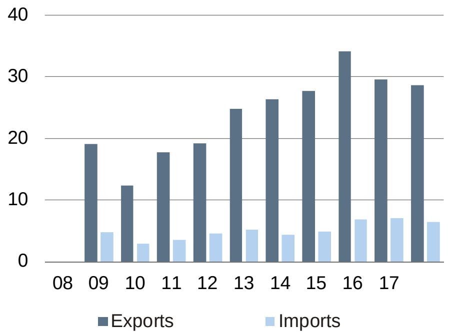
Thus, it makes sense to think about a "what-if" scenario. Germany would be hit hard by import tariffs on cars. In 2017, 12.2% of the sector's total exports went to the US, which was the most important export market for the German auto industry. The US exports were worth EUR 28.6 bn. The US remained the top market even though German car exports to the US were down by an aggregate 16% in nominal terms in 2016 and 2017.

Ceteris paribus, higher US import tariffs would certainly weigh on German car exports. However, the potential impact can only be gauged, particularly since second-round effects and exchange-rate effects will influence trade volumes as

[1] See Felbermayr, Gabriel (2018). Beobachtungen zur US-Leistungsbilanz. In: ifo Schnelldienst 9/2018. Munich.

German auto exports to the US have recently declined 2

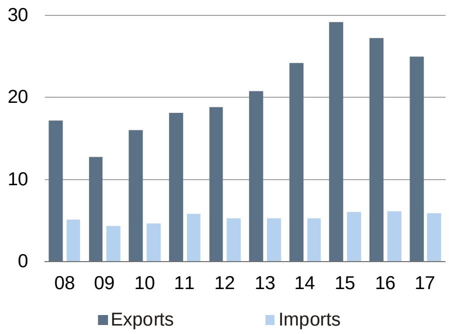
German foreign trade with automotive products with the US, EUR bn




Source: Federal Statistical Office

Brexit dampens trade with UK 3

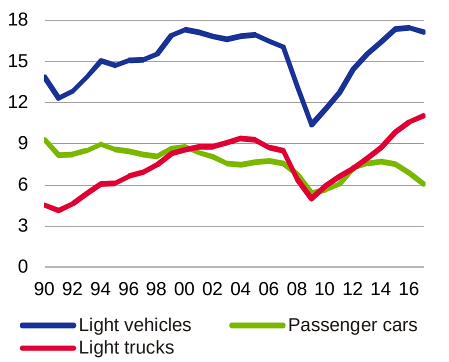
German foreign trade with automotive products with the UK, EUR bn




Source: Federal Statistical Office

Light trucks becoming more popular 4

US light vehicle sales, m




Source: Bureau of Economic Analysis

well. Tariffs of 20% (this level was mentioned recently) would of course not cause German car exports to the US to drop by the same amount. The price elasticity of demand is relatively low in the case of premium cars. Nevertheless, such a tariff might shave off a low to middle single-digit billion amount from car exports to the US. Moreover, earnings per car could decline if carmakers decided not to add the full amount of the tariffs to the final US sales price. While the German auto industry might shift a larger share of their production to the US as a response, doing so will take time.

The German car industry would also suffer from higher US tariffs on imports from China. Trump has already said that he might levy tariffs on Chinese imports, too. If he did, China would probably respond in kind, and this would make exports of German-made cars from the US to China more expensive.

## Brexit is leaving its traces

Negotiations about how the Brexit decision is to be implemented are dragging along. Brexit-related discussions and uncertainties and the depreciation of sterling versus the euro have already had an impact on German car exports to the UK. In both 2016 (-6.6% in nominal terms) and 2017 (-8.3%), car exports to the UK declined markedly. The downtrend stopped in the first four months of 2018; in fact, exports were up by almost 1% year-on-year. Nevertheless, the UK business will likely remain a challenge for the German auto industry for months and years to come. This applies both to exports from Germany and investments by German companies in local factories.

The UK business is important for the German auto industry because the country was the second most important foreign market in 2017; its share in the sector's total exports amounted to 10.6%, down from 12.8% in 2015.

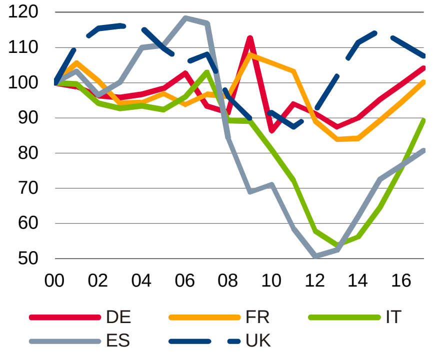
## Cyclical slowdown in important markets

Quite apart from trade-policy-related problems in the two most important export markets, the US and the UK, sentiment in the sector is dampened by the deteriorating economic outlook in important car markets. Light vehicles (passenger car and light trucks) sales in the US already declined by almost 2% in 2017, if from a high level. In the first five months of 2018, sales were up "only" 1.2% yoy. Ultimately, US car sales have reached a level which makes it difficult to achieve further strong growth rates, even though the overall US economy is doing well. We believe that the situation will remain unchanged in 2019. At the same time, US demand is shifting from passenger cars towards light trucks. German carmakers are not as well positioned as their US competitors in this segment. Back in 2012, the share of passenger cars in total US vehicle sales had been more than 50%. It dropped to 35.6% in 2017 and continued to decline at the beginning of 2018.

In Western Europe, too, the scope for further growth has narrowed after relatively strong new registration figures in the last few years. In 2018 new car registrations in the EU-15 were up 1.5% year-on-year (2017 as a whole: +2.6%; 2016: +6%). In 2019, their number will probably increase by less than 1%. This slowdown in Western Europe is particularly important for the auto sector in Germany because a large share of the cars produced in Germany is sold on the European markets.

New passenger car registrations: No clear trend 5

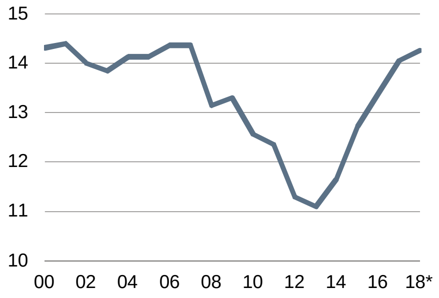
New passenger car registrations, 2000=100




Source: ACEA

Slower growth 6

New passenger car registrations, EU-15, m

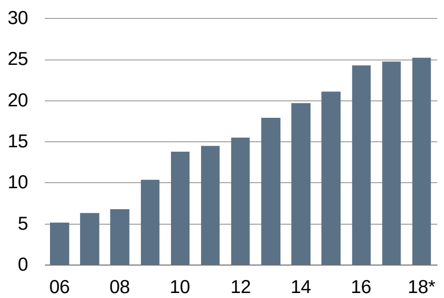



* Forecast

Sources: ACEA, Deutsche Bank Research

Moderate growth on the Chinese market 7

Passenger car sales in China, m




* Forecast

Sources: CAAM, Deutsche Bank Research

In China, too, car sales are no longer growing at two-digit rates. The largest car market world-wide is in for lower momentum, even though sales figures will remain high in absolute terms. Moreover, German carmakers meet local demand to a significant extent from local factories. China is by far the most important foreign production site for German carmakers. During the current year, auto exports to China gave important impulses. During the first four months of the year, they were up by almost 25% year-on-year.

Overall, we do not expect a (significant) decline in car demand in either of the important markets. However, growth will slow down considerably, and this will dampen production in Germany. This fits in with the fact that the expectations of the sector regarding its export business stand in negative territory of late. With the share of exports in total sales coming to 64%, the cyclical risks are evident.

## No end to the diesel scandal

The diesel scandal is still not over. As the auto industry is charged with new offences, the political debate about the advantages and disadvantages of hardware patches for older diesel cars is continuing and further (regional) driving bans are being discussed, the market share of diesel cars has declined considerably. Between January and May 2018, only 32% of all new passenger car registrations in Germany were for diesel engines, down from 48% in 2015. The diesel share in the EU is likely to drop below 40% this year for the first time since 2001.

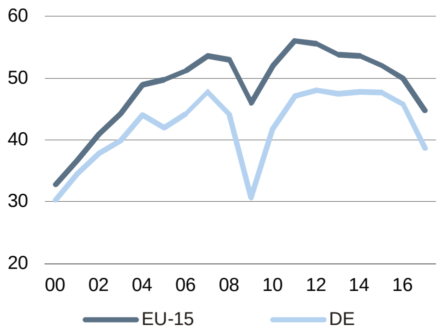
This is a problem for the auto industry because diesel cars tend to the more expensive than their petrol-fuelled counterparts, which is why the shift in consumer preferences will ceteris paribus result in sales losses. And what is more, if the diesel share declines, the car industry will find it more difficult to comply with the carbon emissions limits for cars from 2020/2021. Since diesel engines consume less fuel, their carbon emissions per km are below those of petrol engines. At the same time, alternative fuels (e.g. e-mobility) are still only a niche phenomenon, and many buyers prefer cars with stronger engines. If these trends do not change, compliance with the carbon emissions limits will be at risk and this, in turn, will result in fines. Moreover, environmental regulations for diesel cars may be tightened further due to the experience of the recent past (e.g. higher taxes on diesel fuel). The sector is investing billions of euros in energy-efficient and low-emission engines as well as in e-mobility and other alternative fuels. Ultimately, however, everything comes down to customer preferences. While demand for e-cars looks set to rise considerably in the coming years, profits per car sold will initially decline, not least because there are no sufficient scale effects in e-car production at the moment and batteries are still expensive (even though they are getting cheaper).

## New WLTP examination procedure: Production of certain models will be interrupted

Another regulatory challenge will lead to higher expenses in the car sector in the coming months and might even result in (temporary) production interruptions. From September 2018, all new cars will need to be certified under the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) before being admitted to registration. Since this applies also to different versions of a model (e.g. different engines or features) and the time until the introduction of the WLTP was relatively short, all test centres are running at full capacity and there are certification delays. Several carmakers have therefore announced that they will (temporarily) stop selling certain models. This is less important if models are

Share of diesel engines is declining 8

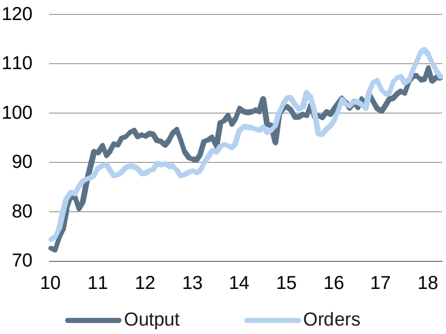
Share of diesel engines in all new passenger car registrations, %




Source: ACEA

German auto industry: 2018 lower growth than 2017 9

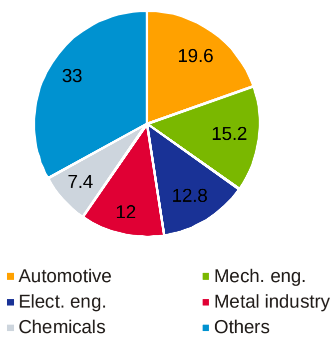
Automotive industry in Germany, 2015=100, sa, moving average lag 3




Source: Federal Statistical Office

Automotive industry biggest industrial in Germany 10

Share of industrial sectors in gross value added of total manufacturing industry, 2015, %




Source: Federal Statistical Office

near the end of their lifecycle anyway; however, it may be a major problem in the case of younger models, which have not been certified for capacity reasons.

Customers might simply buy their car later if they have set their heart on a model which cannot be delivered right now and if they are not under time pressure. This might temporarily reduce capacity utilisation at the carmakers. However, domestic production might suffer if customers with low brand loyalty turn to cars by foreign makers if the certification procedure for these models is already complete. The impact on German car production would be relatively small if buyers simply chose a similar model by the same maker instead of waiting for later delivery. All in all, the WLTP certification will probably be more of a burden on producers' expenses than on domestic car production. A major German producer recently put out a profit warning amongst others due to certification problems.

## Not a “perfect storm”, but dark clouds on the horizon

Each of the trade policy, cyclical and regulatory problems mentioned above is serious, and the German auto industry will have to deal with them all. But with the economic framework conditions favourable (we expect global demand for cars to rise slightly, by c. 2%, in 2018), the problems are probably not serious enough to generate the “perfect storm”. However, dark clouds are certainly gathering in the sky. An output increase of more than 1% this year is unlikely (as measured by the production index, which also includes qualitative improvements). The number of cars produced will probably decline in 2018. If individual problems, such as the trade conflict, escalated, the negative impact on domestic car production would, of course, become even more serious. Negative effects on other sectors are inevitable

With a share of roughly 20% in gross manufacturing value added, the German car industry is the most important industrial sector and an important customer of other industrial and services sectors. A look at the input-output calculation for Germany explains this importance. Mechanical engineering, electrical equipment producers, the metals sector, the rubber and plastics industry, glass and glass-related products manufacturers and the textile industry are only some of the sectors which deliver a large share of their products to the auto industry. Wholesale trade, advertising, technical and economic consulting, transport and logistics and the temp agency sector are services sectors which are highly dependent on the auto industry. In addition, the auto industry commissions large external research projects.

This list shows that a slowdown in the auto industry will necessarily have a negative impact on other sectors. This might result in lower GDP growth, as the auto industry is closely linked, both directly and indirectly, to other sectors. The years 2008/2009 are still present in the memories of many managers in the sectors mentioned above. Back then, automotive production index declined by an aggregate 25% and caused a major crisis in other sectors. That is why developments in the auto industry are particularly relevant for economists right now.

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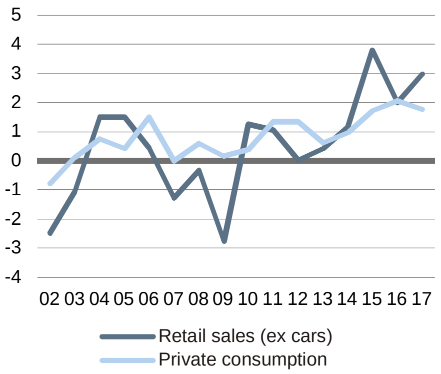
# Retail trade to remain stable, despite several challenges

Private consumption and retail sales 1

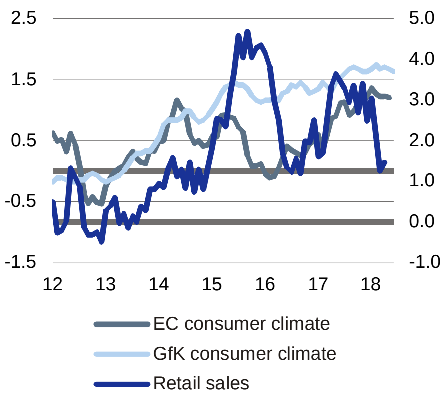
Real, % yoy, sa




Sources: Federal Statistical Office, Deutsche Bank Research

Retail sales and consumer sentiment 2

Consumer climate, normalized (left); % yoy, 3M ma, sa (right)




Sources: Destatis, European Commission, GfK, Deutsche Bank Research

— The retail sales remain resilient despite the economic slowdown. Digitalisation and new business models create pressure on traditional retail traders.

— Size matters if a company wants to keep up with digitalisation. Franchise shops and smaller retailers in the country will have to deal with numerous challenges. Cash registers may become a thing of the past.

As the domestic economy is still humming along, German retail trade will continue to benefit from favourable framework conditions both this year and next. Rising employment and unexpectedly high wage agreements reflect the good labour market situation. And higher incomes support private consumption. Overall, German retail sales (excluding vehicles) will probably rise again by 2.5% in each of the years 2018 and 2019. This will be the ninth and tenth increases in a row. In price-adjusted terms, however, this is equivalent to an annual increase of only 1%. The rise in retail sales may be impressive in real terms, but since households spend ever larger shares of their income on travelling and services which are not included in the typical retail sales basket, retail sales are actually growing more slowly than household consumption as a whole.

Domestic policy, economic and geopolitical tensions may be a risk to our forecast. These developments have already caused consumer sentiment to deteriorate slightly by mid-2018, despite strong wage growth. However, the German Retail Federation (Handelsverband Deutschland, HDE) does not believe that a turnaround is imminent.[2] While the GfK income expectations were recently down considerably in year-on-year terms, they have stabilised at a healthy level in the last few months.

Several retail segments will probably do quite well over the forecast horizon. Bike shops, for example, should benefit from consumers' growing interest in high-performance e-bikes. The football World Cup should boost sports gear and food sales less than was anticipated before Germany was out of tournament. And as incomes rise, people tend to make more expensive purchases, for example of consumer electronics or electronic household appliances. Despite the recent monthly decline in the propensity to buy, the index remains at a high level in a rolling 3-month comparison. It remains to be seen whether furniture sellers will benefit from the uptrend in construction in the future; numerous home builders focus on financing their house or flat first and buy furniture later (apart from the kitchen). Moreover, the ageing of the population will lead to lower furniture sales overall. Distance and online retailing should continue to do well. Sales of books, shoes and clocks, however, look set to underperform.

Retail trade is one of the most adaptable sectors of the economy. Retailers regularly have to deal with challenges such as short lifecycles of certain consumer goods or fashions, jewellery or sports gear or disruptive innovations such as new entertainment or mobile gadgets. Nevertheless, digitalisation and all its aspects are a bigger challenge to retail traders than any other megatrend before. Let us look at two examples:

[2] See HDE/HB. Konsumbarometer. June 2018. P. 11-13.

— First, digitalisation will extend to shops' payment procedures, which will probably be thoroughly revolutionised.

— Second, digitalisation will not necessarily make traditional retailers obsolete; rather, updated marketing and business models should allow retailers to prosper and develop dynamically in the new, digitalised world.

## IoT shelves will put an end to queuing in the supermarket, accelerate information flows and collect valuable user and consumer data

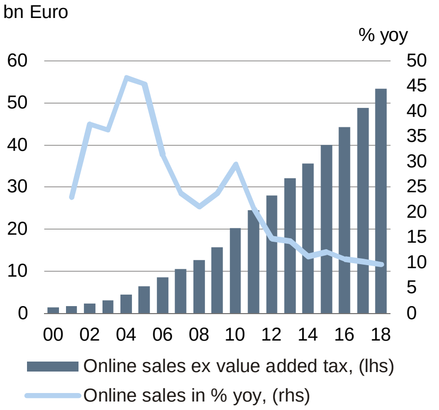
German consumers still have to pay in the traditional way, i.e. at the cash register. Cash and card payments take a similar amount of time, and queuing in the supermarket is a source of stress. However, innovative technologies such as contactless cards or mobile phone apps will enable retailers to fulfil customers' changing needs and demands. The new technologies have advantages for both sides. Retailers can process a larger number of payments, not least because they no longer need to take the time to count and register payments of small sums, and as customer satisfaction increases, customer numbers should rise over time. For customers, contactless and simple cash-free payment solutions are more comfortable, take less time and are more hygienic.[3]

Check-out and payment procedures might become even simpler in the future as retailers furnish their shops with Internet-of-things (IoT) shelves. From the retailers' vantage point, these shelves have several advantages. They can identify potential customers, register which goods they take or put back, and automatically determine the value of customers' shopping carts. Retailers can monitor their inventories in real time and quickly order additional goods. The number of traditional cash registers will decline, as only a few of them will remain to cater for more conservative customers who are less willing to accept innovation.

In Germany and Europe, the General Data Protection Regulation, which entered into force by the end of May 2018, will probably slow down the introduction of such innovations. However, a look at past complex and fundamental challenges shows that, in all probability, a solution for the protection of personal data will be found. Customers would certainly benefit from face-recognising or biometrics-based technologies for shopping; they would be able to do completely without cash, cards or smartphones. Modern IoT shelves only need to analyse a face's vector structure to identify the customer and process the data.

In view of the particular sensitivities of German/European customers and courts, there is a risk that domestic IT companies may develop the new technologies and make them marketable, only to see them used in regions/countries where personal data protection concerns are less of an issue. This applies in particular to Asian countries, where people are much more open to IT solutions. Densely populated China, which already has a modern e-commerce network, may adopt such innovations, too, particularly since the country hopes to be a technology leader in many other economic areas by 2025. While the GDPR may slow down adoption of these technologies in the short term, its security standards may become the norm in the medium to longer term. Then, Europe might be at an advantage.

Online sales in Germany expand further 3



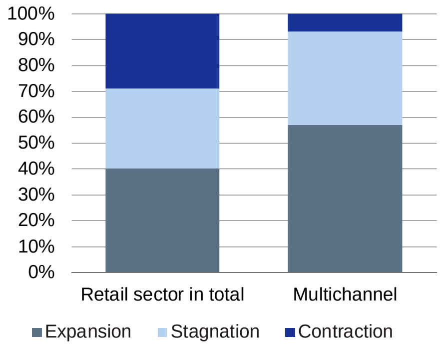

Sources: Federal Statistical Office, HDE

[3] For details see HDE/girocard. Kontaktlose Zahlungen akzeptieren. Eine Anleitung für Händler. 29.12.2017.

## Multichannel retailers have a good chance to prosper, despite the rise of e-commerce, digital challenges and competition by "big techs"

Multichannel more optimistic than retail sector in total 4

Share of companies




Sources: HDE, Konjunkturumfrage 2018, Spring

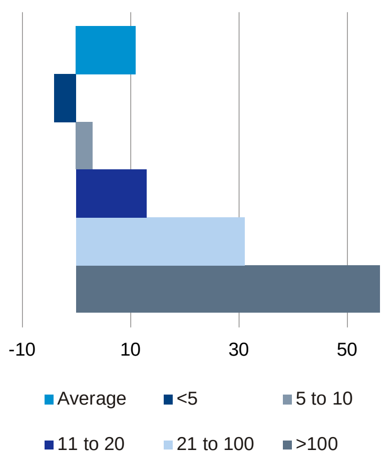
For years now, online retail sales have been expanding at a considerably higher rate than their traditional counterparts. In 2018, too, online sales look set to rise by 10%, i.e. much more strongly than stationary sales. E-commerce obviously makes a major contribution to overall nominal retail sales growth. Digitalisation opens up numerous new supply, availability and selling opportunities, which simply did not exist in the early years of long-distance retailing.

Rapid and persistent e-commerce growth attracts not only traditional retailers. New, innovative entrepreneurs have become interested in online retailing, too. Amazon would not have been able to become a global retail giant if its management had not pursued its vision. And more intense competition from Amazon (a development which is becoming evident in Germany, too) was only the beginning. Other major internet companies have identified e-commerce as a growth market as well in the last few years, and they are trying to get a foothold in the new retail space and expand in this area.

While not all large internet companies are trying to enter the German e-commerce market at once, one should not have any illusions about their plans. Google, for example, has bought shares in JD.com in order to get a foothold in China and signed a partnership agreement with Carrefour, a large French supermarket chain, in order to expand its business in France. This is indicative of a general trend in retailing, which will probably result in new and increased online competition in Germany as well. As internet giants enter into targeted partnerships with local companies, they get access to their user data on the local markets. And these may form the basis for a future expansion strategy. After all, the data can help to optimise delivery chains, round off the range of products or align marketing initiatives with customer preferences.

Sales expectations increase with company size 5

Balance %-pp of "Increase" and "Decrease"




Sources: HDE, Konjunkturumfrage 2018, Spring

The HDE survey[4] finds that larger companies are better at gauging developments in retail trade than small retailers. Moreover, a majority of multichannel retailers (57%), which have focused on expanding their online business in addition to their stationary business in the last few years, expect their business to grow in 2018. Both trends, the one towards bigger companies and the one towards multichannel retailing, are likely to continue.

## Size matters in the digital world

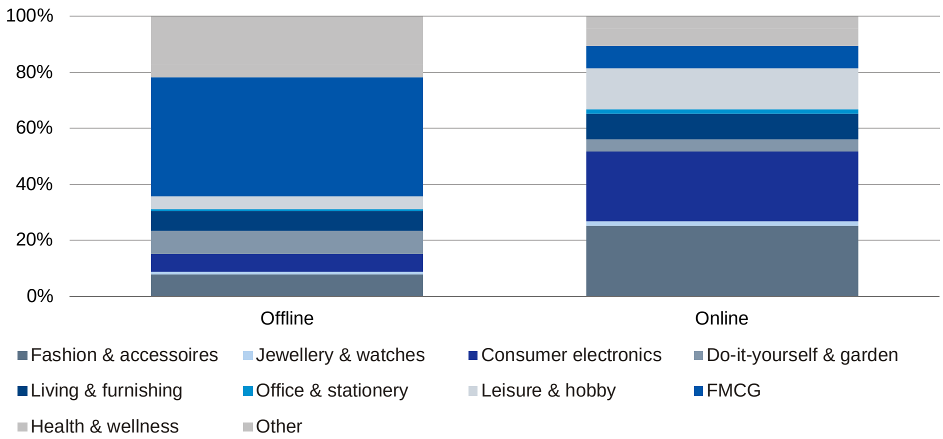
In important industrial sectors, such as mechanical engineering, smaller companies have good survival and growth chances thanks to their adaptability and flexibility. In retail trade, however, the trend has been going in the opposite direction for decades now. While cost and efficiency aspects were the main drivers of structural adjustments in the past, digitalisation has taken over that role now. Companies can only exploit the new digital opportunities if they are sufficiently large and have the necessary cash for investments. Smaller retailers, particularly in less densely populated areas, have been struggling for years and will be hard pressed to deal with the challenge of digitalisation. New online retailers, who commission public or private service providers to have their goods delivered to rural areas, turn up as competitors.

Digitalisation may also become an investment trap for smaller franchise companies in larger shopping centres near agglomerations if consumers no longer visit these shopping centres because digital alternatives appear more attractive. Moreover, franchise shops need to deal with the sector-specific risk

[4] See HDE. Lage und Perspektiven im Einzelhandel. April 2018. S. 2/3.

Offline short lived consumer goods dominate, online fashion and consumer electronics are in demand 6

2017, share of product categories




Source: HDE, Online Monitor 2018

that the ununderlying consumption/product trend may turn out to be a hype and quickly become obsolete. At the same time, digitalisation may generate new product ideas and franchise systems and thus lead to new investments.

## Multichannel retailing as an intelligent answer to digital risks

While the trend towards larger retail companies has been in place for decades, the trend towards multichannel retailing is relatively recent and closely linked to the increasing digitalisation of all economic and trade sectors. It is a response to the fact that competition from global internet giants such as Amazon is likely to intensify. A company such as Zalando, which needed only a decade to transform from a normal internet shoe retailer into a multi-model supplier with platform access for brand producers, shows just what has become possible.

Traditional retailers must recognise that digitalisation is not only a source of risks, but also of opportunities. It offers ways to better meet changing customer desires. The success of multichannel supermarkets, which offer their customers new shopping experiences, flexibility and a larger range of varieties, shows that updated traditional retail concepts offer good chances of survival.

In the future, traditional retailers will use customer data more actively. Smart shops will use a range of techniques in order to determine customers' needs and create incentives to buy. In the near future, intelligent cameras will observe customers in the shop and provide customised adverts at the shelves. Moreover, intelligent product labels which can communicate will allow for dynamic price changes: in the morning, they will attract bargain hunters, and near closing time, they will try and sell fresh produce.

Digitalisation and online trade will play a more important role in the future and be useful for many customer groups, even beyond purely material considerations. For example, senior citizens can comfortably shop online and thus save effort, time and life energy. Meal suppliers can extend their range by also offering retail goods. And people who suffer from diabetes or allergies can benefit from additional information on foodstuffs, such as the sugar or gluten content.

## Conclusion: Retail trade is in for a challenge, but should be able to manage

Demographic developments will certainly dampen German retail trade in the medium term. In addition, digitalisation-related challenges are increasing. But if retail traders rely on their ability to adapt and exploit the benefits of digitalisation, they should be able to manage, despite intensified competition from internet giants such as Amazon.

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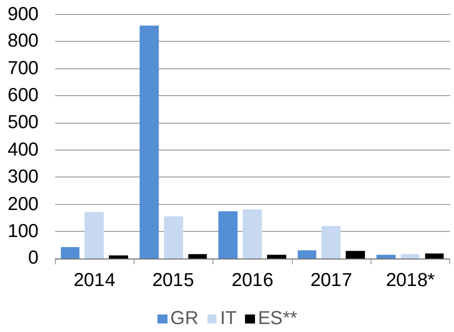
# The view from Berlin

## Merkel unlikely to topple over EU Council benign outcome

Refugees and migrants arriving by sea to major mediterranean countries 1

in '000




* January 1 to June 27;
** Spain incl. those who arrive by land

Source: UNHCR

Asylum policy and, as a result, the German government crisis has topped the June 28-29 EU Council's agenda. Despite declining numbers of asylum seekers, the German CSU demands a much more restrictive EU's policy stance incl. a stop on EU-internal migration of asylum applicants. Otherwise, CSU Home Secretary Seehofer would close the German border for those applicants who were already registered in another member state. This would have been a blow to Chancellor Merkel's promise and ambitions to forge a European solution.

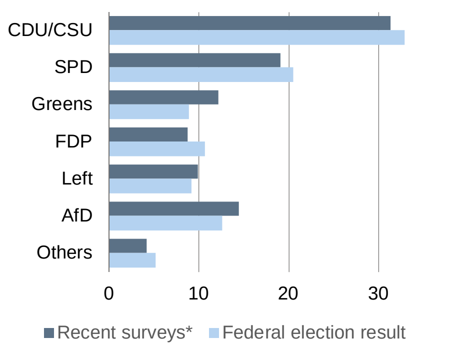
The EU Council conclusions, however, addressed the major elements incl. the secondary movements of asylum seekers: "Member states should take all necessary internal legislative and administrative measures to counter such movements and to closely cooperate amongst each other to that end". The crucial language Merkel secured should help to water down the conflict with the CSU. Given the EU-wide rather restrictive tone towards migration, Merkel was willing to accommodate the concerns to a broad extent only stopping short before turning the EU into a "fortress Europe". The SPD is backing Merkel's preference for a European response to this international issue in principle.

Over the weekend, CDU and CSU grandees – in separate meetings – assessed the outcome in the light of their positioning. While the CDU backed Merkel's view of the achievements in Brussels, the CSU criticised the compromise as being not sufficient and insisted on the demand of unilateral measures. On late Sunday night Seehofer offered his resignation over his clash with Merkel but then announced further talks and meetings for today. Thus, the situation is still fluid with a lot of political noise and uncertainty.

Austria has announced that it will focus on migration policy during its EU presidency in H2/2018. A report on the progress on the outstanding issues (i.e. overhaul of the Dublin regulation) will be presented to the EU Council in October, thus keeping the political pressure up. As these questions are usually dealt with by the EU's interior ministers, Home Secretary Seehofer could be prominently involved in further talks, providing him a stage to position himself in Brussels, Berlin and Munich should he decide to stay.

Major political parties' popularity & result of the past federal election 2

%




* Average of major recent surveys (Allensbach, Emnid, Forsa, Forschungsgruppe Wahlen, Infratest dimap, INSA)
Source: Wahlrecht.de

The German public's attitude is somewhat ambiguous. While 62% support Seehofer's call to close the German border for registered asylum applicants, 69% would welcome a compromise among the two sister parties, according to a recent survey (Infratest dimap). The lasting impact of the CDU-CSU confrontation on Merkel's power and standing remains to be seen. As of today, two-thirds of Germans think that Merkel's authority has suffered as a result of the bickering with Mr. Seehofer (Infratest dimap).

The alternative scenario, if the fundamental dissent between the CDU and the CSU over the summit's outcome prevails, could aggravate the government crisis. It is an open question how the CSU would react should Seehofer resign. If the CSU were to split from the CDU and walk out of the federal government it would deprive the CSU of a major channel to influence German federal politics from which the party and Bavaria have benefited a lot. Even in this option, we consider snap elections less likely. At present, neither of the relevant parties would be interested in such an event, which would primarily benefit the AfD thus shaking up the political landscape in Germany.

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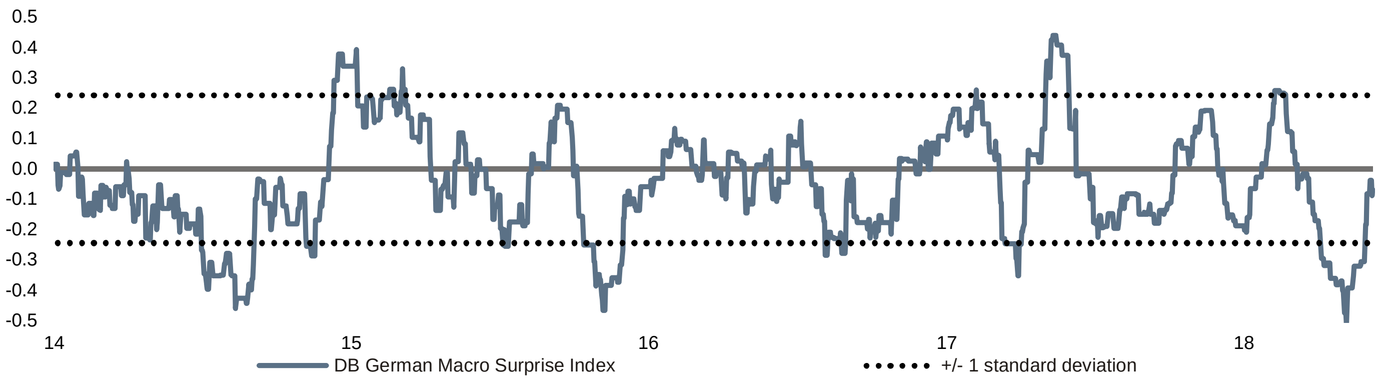
## DB German Macro Surprise Index

The DB German Macro Surprise Index compares published economic data with market forecasts and thus provides clues as to the direction of future forecast revisions.

DB German Macro Surprise Index

Average of last 20 z-scores of data surprises




Values above (below) 0 indicate the data came in better (worse) than expected

Sources: Bloomberg Finance LP, Deutsche Bank Research

Last 20 published economic data for Germany

| Bloomberg Tickers | Indicator | Reporting month | Publication date | Current value | Bloomberg consensus | Surprise | Standardised surprise | Quantile rank |
|---|---|---|---|---|---|---|---|---|
| GRFRIAMM Index | Retail Sales (% mom) | 3 2018 | 30/04/2018 | -0.4 | 0.8 | -1.2 | -0.7 | 0.2 |
| MPMIDEMA Index | Markit Manufacturing PMI | 4 2018 | 02/05/2018 | 58.1 | 58.1 | 0.0 | 0.0 | 0.4 |
| MPMIDESA Index | Markit Services PMI | 4 2018 | 04/05/2018 | 53.0 | 54.1 | -1.1 | -1.2 | 0.1 |
| GRIORTMM Index | Factory Orders (% mom) | 3 2018 | 07/05/2018 | -1.1 | 0.5 | -1.6 | -0.8 | 0.2 |
| GRIPIMOM Index | Industrial production (% mom) | 3 2018 | 08/05/2018 | 1.7 | 0.8 | 0.9 | 0.8 | 0.8 |
| GRCAEU Index | Current Account Balance (EUR bn) | 3 2018 | 08/05/2018 | 29.6 | 27.0 | 2.6 | 0.4 | 0.7 |
| GRZEWI Index | ZEW Survey Expectations | 5 2018 | 15/05/2018 | -8.2 | -8.2 | 0.0 | 0.0 | 0.6 |
| GRZECURR Index | ZEW Survey Current Situation | 5 2018 | 15/05/2018 | 87.4 | 85.5 | 1.9 | 0.2 | 0.6 |
| GRCP20YY Index | CPI (% yoy) | 4 2018 | 16/05/2018 | 1.6 | 1.6 | 0.0 | 0.2 | 0.3 |
| GRGDPPGQ Index | GDP (% qoq) | 3 2018 | 24/05/2018 | 0.3 | 0.3 | 0.0 | -0.2 | 0.3 |
| GRIFPBUS Index | IFO Business Climate | 5 2018 | 25/05/2018 | 92.9 | 102.0 | -9.1 | -0.6 | 0.3 |
| GRIMP95Y Index | Import Price Index (% yoy) | 4 2018 | 30/05/2018 | 0.6 | 0.8 | -0.2 | 0.2 | 0.5 |
| GRUECHNG Index | Unemployment Change (000's mom) | 5 2018 | 30/05/2018 | -12.0 | -10.0 | 2.0 | -0.1 | 0.4 |
| GRCP20YY Index | CPI (% yoy) | 5 2018 | 30/05/2018 | 2.2 | 2.2 | 0.0 | 0.2 | 0.3 |
| GRFRIAMM Index | Retail Sales (% mom) | 4 2018 | 30/05/2018 | 2.3 | 0.5 | 1.8 | 1.7 | 0.9 |
| MPMIDEMA Index | Markit Manufacturing PMI | 5 2018 | 01/06/2018 | 56.9 | 56.8 | 0.1 | 0.1 | 0.5 |
| MPMIDESA Index | Markit Services PMI | 5 2018 | 05/06/2018 | 52.1 | 52.1 | 0.0 | 0.0 | 0.5 |
| GRIORTMM Index | Factory Orders (% mom) | 4 2018 | 07/06/2018 | -2.5 | 0.8 | -3.3 | -1.6 | 0.0 |
| GRCAEU Index | Current Account Balance (EUR bn) | 4 2018 | 08/06/2018 | 22.7 | 20.0 | 2.7 | 0.5 | 0.7 |
| GRIPIMOM Index | Industrial production (% mom) | 4 2018 | 08/06/2018 | -1.0 | 0.3 | -1.3 | -1.0 | 0.1 |

*Sources: Bloomberg Finance LP, Deutsche Bank Research*

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Updated by Sebastian Becker, Marc Schattenberg and Jochen Möbert (+49 69 910-31727, jochen.moebert@db.com)
Source: Heiko Peters (2014). DB German Macro Surprise Index. Focus Germany, 4 August 2014.

# On a bumpy road into summer break

Germany: Data calendar

| Date | Time | Data | Reporting period | DB forecast | Last value |
|---|---|---|---|---|---|
| 5 Jul 2018 | 8:00 | New orders manufacturing (% mom, sa) | May | 1.1 | -2.5 |
| 6 Jul 2018 | 8:00 | Industrial production (% mom, sa) | May | 1.0 | -1.7 |
| 9 Jul 2018 | 8:00 | Trade balance (EUR bn, sa) | May | 17.8 | 19.0 |
| 9 Jul 2018 | 8:00 | Merchandise exports (% mom, sa) | May | -0.1 | -0.3 |
| 9 Jul 2018 | 8:00 | Merchandise imports (% mom, sa) | May | 0.6 | 2.6 |
| 24 Jul 2018 | 9:30 | Manufacturing PMI (Flash) | July | 56.0 | 55.9 |
| 24 Jul 2018 | 9:30 | Services PMI (Flash) | July | 54.4 | 53.9 |
| 25 Jul 2018 | 10:00 | ifo business climate (Index, sa) | July | 102.0 | 101.8 |
| 30 Jul 2018 | 14:00 | Consumer prices preliminary (% yoy, nsa) | July | 2.0 | 2.1 |
| 31 Jul 2018 | 8:00 | Retail sales (% mom, sa)* | June | 1.0 | -2.1 |
| 31 Jul 2018 | 9:55 | Unemployment rate (%, sa) | July | 5.2 | 5.2 |

* An earlier data release may be possible due to the Federal Statistical Office.

Sources: Deutsche Bank Research, Federal Statistical Office, Federal Employment Agency, ifo, Markit

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Financial Forecasts

| | US | JP | EMU | GB | CH | SE | DK | NO | PL | HU | CZ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Key interest rate, %** | | | | | | | | | | | |
| Current | 1.875 | -0.10 | 0.00 | 0.50 | -0.75 | -0.50 | 0.05 | 0.50 | 1.50 | 0.26 | 1.00 |
| Jun 18 | 1.875 | -0.10 | 0.00 | 0.50 | -0.75 | -0.50 | 0.05 | 0.50 | 1.50 | 0.26 | 1.00 |
| Sep 18 | 2.125 | -0.10 | 0.00 | 0.75 | -0.75 | -0.50 | 0.05 | 0.75 | 1.50 | 0.15 | 1.25 |
| Dec 18 | 2.375 | -0.10 | 0.00 | 0.75 | -0.75 | -0.25 | 0.05 | 0.75 | 1.50 | 0.15 | 1.50 |
| **3M interest rates, %** | | | | | | | | | | | |
| Current | 2.34 | 0.08 | -0.33 | 0.68 | | | | | | | |
| Jun 18 | 2.34 | 0.08 | -0.33 | 0.67 | | | | | | | |
| Sep 18 | 2.48 | 0.05 | -0.30 | 0.55 | | | | | | | |
| Dec 18 | 2.73 | 0.05 | -0.30 | 0.75 | | | | | | | |
| **10Y government bonds yields, %** | | | | | | | | | | | |
| Current | 2.86 | 0.03 | 0.30 | 1.34 | | | | | | | |
| Jun 18 | 2.84 | 0.04 | 0.30 | 1.36 | | | | | | | |
| Sep 18 | 3.25 | 0.00 | 0.55 | 1.50 | | | | | | | |
| Dec 18 | 3.50 | 0.00 | 0.90 | 1.80 | | | | | | | |

Exchange rates

| | EUR/USD | USD/JPY | EUR/GBP | GBP/USD | EUR/CHF | EUR/SEK | EUR/DKK | EUR/NOK | EUR/PLN | EUR/HUF | EUR/CZK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Current | 1.16 | 111.00 | 0.89 | 1.32 | 1.16 | 10.46 | 7.45 | 9.50 | 4.39 | 329.81 | 26.01 |
| Jun 18 | 1.17 | 110.45 | 0.89 | 1.31 | 1.16 | 10.45 | | 9.51 | 4.36 | 329.77 | 26.02 |
| Sep 18 | 1.17 | 105.00 | 0.86 | 1.36 | 1.18 | 9.50 | | 9.10 | 4.35 | 318.50 | 25.05 |
| Dec 18 | 1.20 | 102.00 | 0.85 | 1.41 | 1.20 | 9.20 | 7.46 | 9.00 | 4.30 | 320.00 | 25.00 |

Sources: Bloomberg Finance LP, Deutsche Bank Research

# On a bumpy road into summer break

German data monitor

| | Q2 2017 | Q3 2017 | Q4 2017 | Q1 2018 | Q2 2018 | Jan 2018 | Feb 2018 | Mar 2018 | Apr 2018 | May 2018 | Jun 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Business surveys and output** | | | | | | | | | | | |
| Aggregate | | | | | | | | | | | |
| Ifo business climate | 102.3 | 104.3 | 105.0 | 104.1 | 102.1 | 104.8 | 104.2 | 103.4 | 102.2 | 102.3 | 101.8 |
| Ifo business expectations | 100.8 | 102.1 | 103.0 | 100.6 | 98.6 | 101.4 | 100.3 | 100.1 | 98.7 | 98.6 | 98.6 |
| Industry | | | | | | | | | | | |
| Ifo manufacturing | 105.9 | 108.0 | 108.9 | 107.8 | 104.8 | 109.4 | 107.8 | 106.3 | 104.9 | 104.8 | 104.7 |
| Headline IP (% pop) | 1.5 | 1.6 | 1.0 | 0.3 | | 0.0 | -1.7 | 1.6 | -1.7 | | |
| Orders (% pop) | 1.2 | 2.3 | 3.5 | -2.2 | | -3.5 | -0.2 | -1.1 | -2.5 | | |
| Capacity Utilisation | 86.1 | 86.9 | 87.7 | 88.2 | 87.8 | | | | | | |
| Construction | | | | | | | | | | | |
| Output (% pop) | 5.4 | -0.4 | -1.0 | | | 5.9 | -7.2 | | | | |
| Orders (% pop) | -2.0 | -1.7 | 10.2 | -1.7 | | -12.8 | 9.9 | -15.1 | 2.6 | | |
| Ifo construction | 108.1 | 109.9 | 110.7 | 110.1 | 111.5 | 110.2 | 109.3 | 110.8 | 111.4 | 111.8 | 111.3 |
| **Consumer demand** | | | | | | | | | | | |
| EC consumer survey | 3.6 | 4.1 | 5.5 | 6.7 | 5.5 | 7.4 | 6.5 | 6.1 | 6.1 | 5.9 | 4.6 |
| Retail sales (% pop) | 0.5 | 0.5 | 0.8 | -0.6 | | -0.6 | -0.1 | 0.2 | 1.6 | -2.1 | |
| New car reg. (% yoy) | 0.0 | 0.3 | 4.2 | 4.0 | | 11.6 | 7.4 | -3.4 | 8.0 | -5.8 | |
| **Foreign sector** | | | | | | | | | | | |
| Foreign orders (% pop) | 1.5 | 3.5 | 4.9 | | | -4.6 | | | | | |
| Exports (% pop) | 1.6 | 0.7 | 2.9 | -0.6 | | -0.4 | -3.1 | 1.8 | -0.3 | | |
| Imports (% pop) | 1.4 | 0.2 | 2.8 | -0.1 | | -0.2 | -1.5 | -0.2 | 2.6 | | |
| Net trade (sa EUR bn) | 60.5 | 62.0 | 64.3 | 62.6 | | 21.5 | 19.4 | 21.6 | 19.0 | | |
| **Labour market** | | | | | | | | | | | |
| Unemployment rate (%) | 5.7 | 5.7 | 5.5 | 5.4 | 5.2 | 5.4 | 5.4 | 5.3 | 5.3 | 5.2 | 5.2 |
| Change in unemployment (k) | -45.3 | -24.7 | -54.7 | -70.0 | -40.0 | -24.0 | -21.0 | -18.0 | -8.0 | -12.0 | -15.0 |
| Employment (% yoy) | 1.4 | 1.5 | 1.4 | 1.4 | | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | |
| Ifo employment barometer | 102.6 | 103.3 | 104.0 | 104.8 | 103.8 | 105.5 | 105.0 | 103.9 | 103.3 | 104.1 | 104.0 |
| **Prices, wages and costs** | | | | | | | | | | | |
| Prices | | | | | | | | | | | |
| Harmonised CPI (% yoy) | 1.6 | 1.7 | 1.6 | 1.4 | 1.9 | 1.4 | 1.2 | 1.5 | 1.4 | 2.2 | 2.1 |
| Core HICP (% yoy) | 1.4 | 1.5 | 1.3 | 1.3 | 1.2 | 1.3 | 1.4 | 1.3 | 1.0 | 1.5 | 1.2 |
| Harmonised PPI (% yoy) | 2.8 | 2.7 | 2.5 | 2.0 | | 2.1 | 1.8 | 1.9 | 2.0 | 2.7 | |
| Commodities, ex. Energy (% yoy) | 8.9 | 4.2 | -5.6 | -12.4 | | -11.1 | -13.5 | -12.6 | -6.3 | 5.9 | |
| Crude oil, Brent (USD/bbl) | 50.8 | 52.2 | 61.5 | 66.9 | | 69.1 | 65.3 | 66.0 | 72.0 | 76.9 | 74.5 |
| Inflation expectations | | | | | | | | | | | |
| EC household survey | 17.6 | 16.3 | 16.0 | 16.4 | 17.3 | 16.6 | 18.3 | 14.4 | 15.1 | 16.8 | 19.9 |
| EC industrial survey | 11.4 | 10.2 | 14.2 | 15.0 | 13.8 | 16.3 | 14.5 | 14.2 | 14.6 | 12.1 | 14.6 |
| Unit labour cost (% yoy) | | | | | | | | | | | |
| Unit labour cost | 2.4 | 1.8 | 1.0 | 2.2 | | | | | | | |
| Compensation | 2.6 | 2.6 | 2.4 | 2.8 | | | | | | | |
| Hourly labour costs | 3.9 | 2.6 | 2.6 | 3.7 | | | | | | | |
| **Money (% yoy)** | | | | | | | | | | | |
| M3 | 5.6 | 4.7 | 4.3 | 3.3 | | 3.6 | 3.2 | 3.3 | 3.5 | 4.2 | |
| M3 trend (3m cma) | | | | | | 4.1 | 3.7 | 3.4 | 3.3 | | |
| Credit - private | 3.8 | 3.9 | 4.2 | 4.3 | | 4.3 | 4.3 | 4.3 | 4.3 | | |
| Credit - public | 4.1 | 5.5 | -2.9 | -20.0 | | -5.4 | -12.9 | -20.0 | -8.7 | | |

% pop = % change this period over previous period.
Sources: Deutsche Bundesbank, European Commission, Eurostat, Federal Employment Agency, German Federal Statistical Office, HWWI, ifo, IHS Markit

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