

THE VIEW

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WANT TO HEAR THE HEARTBEAT OF GLOBAL TRADE? LISTEN TO GERMAN EXPORTERS!

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EXECUTIVE SUMMARY



Katharina Utermöhl
Senior Economist Europe for Allianz SE
katharina.uteromohl@allianz.com



Simon Krause, Economic Research Assistant
Dayeon Kim, Economic Research Assistant

With the collaboration of
Abdul-Rahman Kassab, Economic Research Assistant

- German economic indicators are particularly well-placed as precursors of global trade momentum, thanks to a combination of the economy's key characteristics. Volumes clearly matter: with a share in global exports of 8%, Germany is the world's third-largest exporter. However, proxy power is also a result of the German economy's trade openness, as well as the broad-based nature of its exports – in terms of sectors and trade partners. As a result, German economic indicators arguably contain a high information content on global trade activity.
- To gauge current global trade momentum, we built a proprietary model based on German economic indicators. Our results suggest that after broadly stabilizing in spring 2019, the trade recession continued in Q2 2019 (-0.8% q/q). With key surveys and indicators for the German economy continuing their downward trend – the latest reading of German new manufacturing orders at -8.6% y/y showed the sharpest annual decline in almost a decade – and in spite of clear idiosyncrasies (homegrown car sector troubles etc.), it looks like global trade is unlikely to recover in the next quarter.

8%

GERMANY'S SHARE IN GLOBAL EXPORTS

THE GERMAN ECONOMY IS THE ULTIMATE BELLWETHER FOR GLOBAL TRADE MOMENTUM

Global trade determines to a significant degree the outlook for Germany's export-dependent economy. This was highlighted by the sharp slowdown in German growth momentum in late 2018 when world trade slipped into recession. However, given the German economy's tight integration in the global economic system, there is good reason to believe that the country's economic indicators are also particularly useful precursors of global trade momentum, with proxy power derived from a combination of key characteristics: a large export sector, a high degree of openness and strong export diversification.

Large export sector

This does not come as a surprise: The

more a country exports, the better it should be able to serve as a proxy for global trade dynamics. With a share in global exports of 8%, Germany is the world's third-largest exporter. As recently as the year 2008, Germany held the title "world export champion" for selling more goods abroad than any other country. However, it has since fallen back to third place after being overtaken first by China, in 2009, and then the US in 2010.

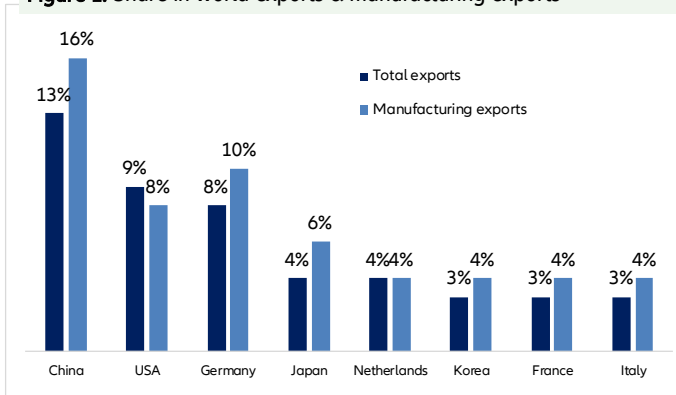
High degree of openness

While size matters - i.e. export volumes - the degree of openness of an economy further boosts its role as a bellwether for global trade since it will prove highly sensitive to changes in trade dynamics. Among the largest export na-

tions, as well as the G7, Germany is clearly in the pole position with a foreign trade ratio – the sum of exports and imports in relation to GDP – of 87% in 2018. In comparison, the foreign trade ratios of the U.S. and China are notably lower at 26% and 38%, respectively.

While Germany's focus on trade is not a recent phenomenon – the country has consistently boasted a trade surplus since 1952 – there is perhaps no other economy that opened up to global trade in the way Germany did over the past 30 years. After all, since 1991, the German economy's foreign trade ratio has almost doubled.

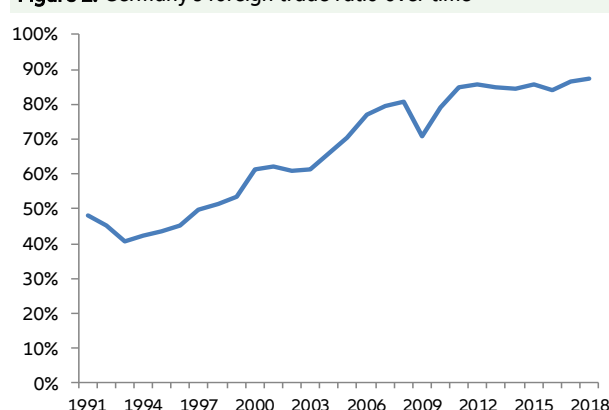
Figure 1: Share in world exports & manufacturing exports



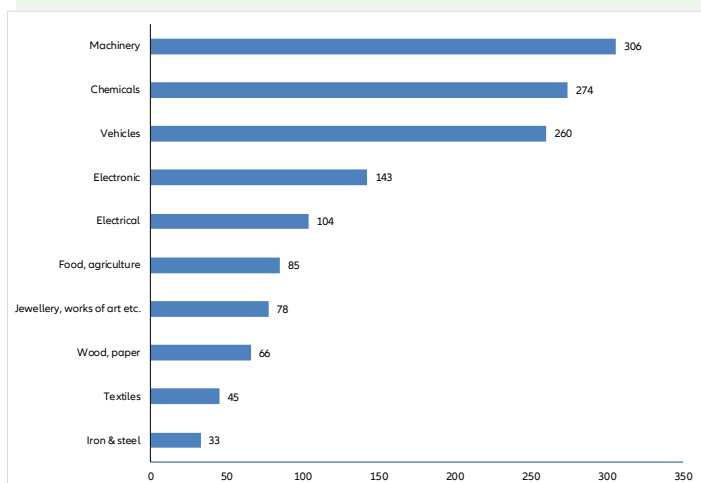
Sources: World Bank, WTO, Allianz Research

Note: Data refers to 2017.

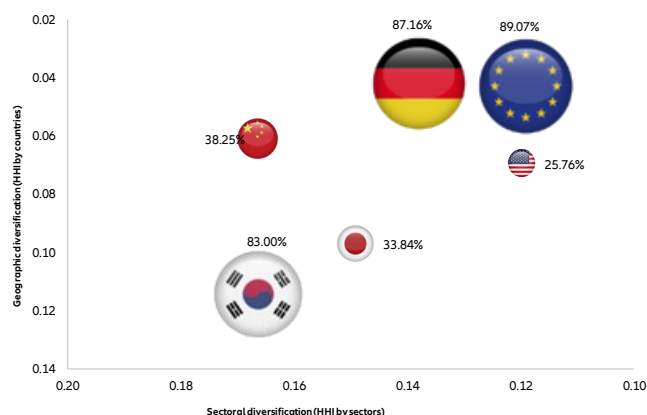
Figure 2: Germany's foreign trade ratio over time



Sources: Destatis, Allianz Research

Figure 3 German top 10 export sectors in \$bn (2017)


Sources: Chelem, Allianz Research

Figure 4 Export diversification by sectors and countries & economic openness (bubble size)


Sources: Thomson Reuters Datastream, Eurostat, Allianz Research

This rapid integration in global value chains was driven by several factors, of which we want to highlight three:

- **EU membership:** German exports have flourished thanks to the economy's EU membership. For one, intra-EU exports more than doubled in value over the past 20 years, as a result of the establishment of the EU Single Market. In addition, Germany's extra-EU exports have benefited from the EU's strong commitment to fostering free trade and reducing barriers. In this respect, the world's largest trade bloc has pursued an offensive approach to globalization that relies on bilateral trade agreement negotiations with main partners. The relatively low average applied tariff for goods imported into the EU – with more than 70% of imports entering the EU at zero or reduced tariffs – mirrors to a large extent the preferential access EU firms enjoy to foreign markets.
- **Adoption of the Euro:** Germany's external competitiveness has further received a tailwind from the adoption of the Euro in 1999. For one, fixing exchange rates among member countries has curtailed foreign exchange risk, which in turn has helped fuel overall intra-

Eurozone trade. In addition, German exports arguably profited disproportionately more with respect to extra-Eurozone trade, with recent IMF estimates seeing the Euro undervalued by 10-20% from a German perspective¹. Certainly, Germany's export strength is also due to the quality of its products, and contained unit labor costs growth has also contributed to a competitive pricing of German products in global market. But ceteris paribus, thanks to the Euro, German exporters have been able to offer their products at notably lower prices than would have been possible if the Deutschmark still existed.

- **The rise of China and other large emerging markets:** German exports have also benefited from close ties with fast-growing emerging markets – in particular China – thanks to their appetite for “made in Germany” products. Germany's strong industrial basis has seen its export product palette geared towards capital goods, which are in high demand in emerging markets. With Germany's most important export sectors being machinery, chemicals, vehicles and electronics, it is not surprising that, measured by its share in global manufacturing ex-

ports, Germany even ranks second ahead of the U.S.

- **Strong export diversification.** In addition to large export volumes and a high degree of economic openness, Germany's ability to act as a bellwether for global trade stems from the diversification of its exports – in terms of sectors as well as destinations. In fact, among key export nations, Germany ranks first when it comes to the geographic diversification of its exports, which means that German exports are spread across the highest number of trading partners.

Meanwhile, the sectoral diversification of German exports is also very high, suggesting that Germany's export palette covers a high number of sectors. Among the major export nations, only the U.S. fares slightly better on this indicator. Thanks to this broad-based nature of its exports, German economic indicators arguably carry much information on markets and sectors across the globe and could hence prove very useful as a proxy for global trade momentum. Meanwhile, the EU still scores somewhat better than its largest member state on both dimensions, which is not surprising since it encompasses 28 rather open economies.

¹ IMF External Sector Report 2018, <https://www.imf.org/en/Publications/ESR/Issues/2018/07/19/2018-external-sector-report>

HOW GOOD ARE GERMAN ECONOMIC INDICATORS AT NOWCASTING GLOBAL TRADE GROWTH?

To form an idea on the ability of German economic variables to serve as nowcasting proxies, we look at their correlations with global trade momentum. To provide some context, we compare the results with those for a wide range of direct indicators that are related to the current state, as well as expectations for global activity, with a particular focus on the manufacturing and export sectors. For comparison purposes, we also include some indirect indicators that reflect global trade activity, such as the Baltic Exchange

Dry Index, which is a commonly used measure of shipping costs.

Our results show that several German indicators are highly correlated with global trade dynamics. In particular, German manufacturing orders, the ifo manufacturing export expectation sub-index and the German manufacturing PMI boast correlations with global trade that are at least equal to or even higher than those of global PMI indices. Moreover, when comparing the forecasting ability of economic

indicators for other major export nations, Germany clearly comes out top ahead of its peers. For instance, indicators tracking export prospects for the U.S., China and South Korea display notably lower correlations with global trade.

In addition to their proxy power, several German economic indicators also offer a publication advantage by being released before the end of the reporting month.

Figure 5 Correlation with world trade growth vs. publication times of selected variables



Sources: Refinitiv, Allianz Research

*Annual growth rates are used for these indicators.

Note: Depending on their publication date, indicators have been classified as leading (before the end of the reporting month), nowcasting (end of reporting month or one week after) or lagging (more than one week after the end of the reporting month). The correlations with world trade growth are indicated in parentheses.

Note: The sample period is June 2006-2019.

A GERMAN MODEL TO GAUGE GLOBAL TRADE MOMENTUM

Table 1: Errors of selected world trade models²

	Root mean squared errors			
	2006-2019	2008-2012	2013-2016	2017 – 2019
German new manufacturing orders*	0.029	0.035	0.023	0.023
Germany ifo export expectations in 3 months	0.032	0.046	0.018	0.021
Autoregressive benchmark model	0.025	0.036	0.012	0.017
<i>German Global Trade Momentum (GGTM) model</i>	0.020	0.027	0.013	0.016

Sources: Refinitiv, Allianz Research

*Annual growth rates are used for this indicators.

Note: The root mean squared errors compare the nowcasts generated from each model to the actual world trade outcomes for the period Jan 2006 – April 2019.

The AR model is of the form³:

$$\text{Global Trade Growth}_t = \beta_0 + \beta_1 \text{Global Trade Growth}_{t-2} + \beta_2 \text{Recession Dummy} + \beta_3 \text{Recovery Dummy} + e_t$$

The individual indicator models are of the form:

$$\text{Global Trade Growth}_t = \beta_0 + \beta_1 \text{German Manufacturing Orders}_{t-1} + \beta_2 \text{Recession Dummy} + \beta_3 \text{Recovery Dummy} + e_t$$

$$\text{Global Trade Growth}_t = \beta_0 + \beta_1 \text{German ifo Expectations 3 Months}_t + \beta_2 \text{Recession Dummy} + \beta_3 \text{Recovery Dummy} + e_t$$

The German Global Trade Momentum (GGTM) model is of the form:

$$\text{Global Trade Growth}_t = \beta_0 + \beta_1 \text{Global Trade Growth}_{t-2} + \beta_2 \text{German Manufacturing Orders}_{t-1} + \beta_3 \text{German ifo Expectations 3 Months}_t + \beta_4 \text{Recession Dummy} + \beta_5 \text{Recovery Dummy} + e_t$$

To build a model to gauge global trade dynamics using German economic indicators, we first pick two individual German indicators that are highly correlated with global trade growth, namely *Germany ifo export expectations in the next 3 months* and *German new manufacturing orders*. To examine how much information the individual indicators contain, a benchmark model of world trade dynamics is needed, against which models incorporating only the individual indicators can be compared. We used a simple autoregressive (AR) model that forecasts world trade based on past growth rates. AR models are often quite hard to beat for individual indicator

models, particularly in the short-run. Indeed, judging by the root mean squared errors (Table 1), the simple AR model consistently outperformed the individual indicator models, with the only exception being the volatile 2008-2012 period. Here the *German new manufacturing orders* individual indicator performed slightly better than the AR model, with past growth rates clearly not a good basis to forecast the sharp moves in global trade volumes.

With nowcasting accuracy usually improving when several indicators are combined, we build a *German Global Trade Momentum (GGTM)* model that

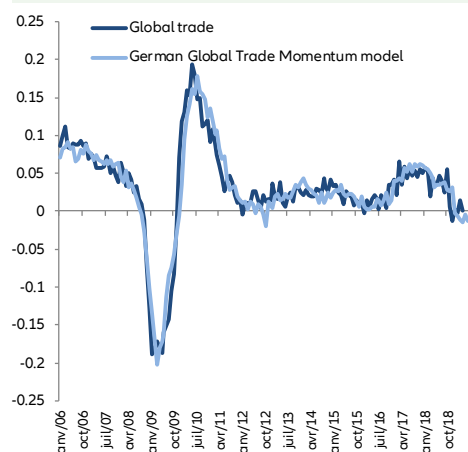
uses the simple AR model for global trade as an anchor but then adds the two individual German indicators to the equation. Our results in Table 1 show that the GGTM model displays a better fit compared to the individual indicator, as well as the simple AR models. Only during the years 2013-2016 does the simple AR model perform slightly better, judging by the smaller error. An explanation could be the relative stability of global trade dynamics following the highly volatile 2008-12 period, which was characterized by large swings in global trade. For the latter time period, our GGTM model works notably better.

² We have added a recession dummy for the period Q1 2008 – Q2 2009 and a recovery dummy for the period Q3 2009 – Q4 2010.

³ For more information see also Stratford, Kate (2013) 'Nowcasting world GDP and trade using global indicators', Bank of England Quarterly Bulletin, Q3 2013

PUTTING OUR MODEL TO THE TEST: CHECKING THE HEARTBEAT OF GLOBAL TRADE

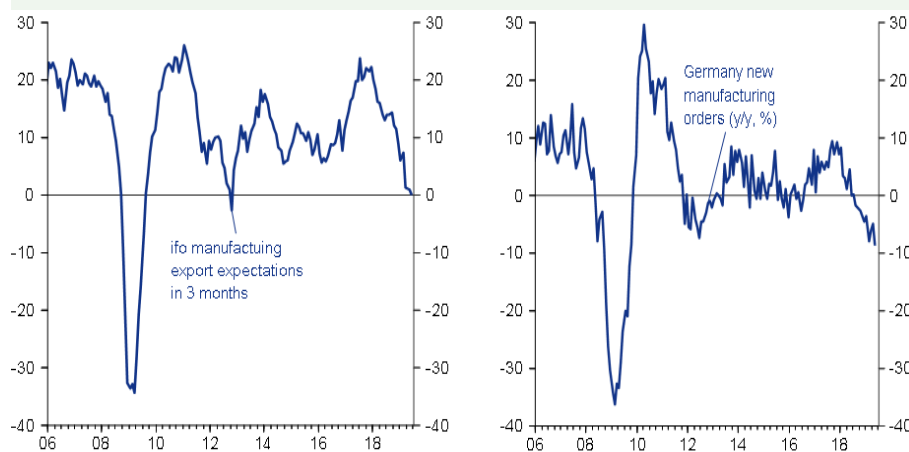
Figure 6: German Global Trade Momentum model



Sources: Refinitiv, Allianz Research

Note: The equations are estimated between January 2006 and June 2019 using ordinary least squares

Figure 7: German ifo manufacturing export expectations in 3 months & new manufacturing orders (y/y, %)



Sources: Refinitiv, Allianz Research

Our GGTM model suggests that trade dynamics broadly stabilized in spring 2019, following a sharp slowdown in late 2018, but that momentum remains very weak.

In fact, the trade recession likely continued in Q2 2019, with nowcasts for annual global trade growth in May and June stuck in negative territory. The annual growth overhang at the end of H1 stands at about -1%, suggesting that global trade is on course to register an annual contraction in 2019 unless we see a pick-up in activity soon. A swift and sustainable uptick, however, is not in the cards, at least when looking at German leading indicators, which continue their downward trend rather than

display any clear evidence of stabilization or even improvement.

The ongoing deterioration in the ifo export expectations sub-index to the lowest level since late 2012, as well as in German new manufacturing orders – at -8.6% y/y the May reading showed the sharpest annual decline in almost a decade – reflects weak global growth dynamics. After all, the stimulus in China is not yet showing the desired impact and elevated global uncertainty due to the lingering U.S.-China trade dispute is also weighing on sentiment and economic activity.

However, it is important to highlight that our GGTM model may exaggerate

the current weakness in global trade as a result of Germany-specific developments. For example, weak German economic growth momentum is not to a small extent also a result of German car sector troubles. Subdued demand from abroad – and in particular China – clearly also plays a role here, but so have German car makers' difficulties in complying with new emissions standards and the announcements of city bans for cars with older diesel engines. German idiosyncratic factors may hence explain why the estimate of our GGTM model is more downbeat on trade dynamics in Q2 2019 compared to a global forecasting approach.

Director of Publications: Ludovic Subran, Chief Economist
Euler Hermes Allianz Economic Research
1, place des Saisons | 92048 Paris-La-Défense Cedex | France
Phone +33 1 84 11 35 64 |
A company of Allianz

<http://www.eulerhermes.com/economic-research>
research@eulerhermes.com



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