BDI
The Voice of German Industry

Global Shift in Power – How is German Industry Faring in the Globalised World?

A study conducted by IW Consult on behalf of the Federation of German Industries.

Selected results from the study

Table of Contents

Background

In autumn 2013, the Federation of German Industries (Bundesverband der deutschen Industrie e.V. (BDI)) commissioned IW Consult (IW Köln Consult GmbH) to conduct the study "Globale Kräfteverschiebung – Wo steht die deutsche Industrie in der Globalisierung?" (Global Shift in Power – How is German Industry Faring in the Globalised World?). In the study, global economic changes were illustrated in detail at both the macro-economic and the company level. To this end, researchers drew on indicators including share in global GDP, in world trade, and in industrial production as well as a variety of other key figures. In the study, Germany was not only compared to its main competitors. The authors of the study also analysed whether increasing foreign production of German companies strengthened or undermined Germany as a business location. To answer this question, the study looks beyond the traditional concept of gross trade flows taking into consideration value added, i.e. the proportions of imports in exports.

Germany is Still One of Globalisation's Winners - for the Time Being

In relative terms, Germany has lost market shares in the global economy over the last 20 years to new competitors from developing and emerging countries. However, Germany remains one of globalisation's clear winners. Indeed, between 1995 and 2012, the proportion it contributed towards global industry's valued added fell from 9.2 to 6.3 percent. In absolute terms, however, based on calculations by IW Consult, Germany was able to raise its level of industrial value added between 1995 and 2013 by 45 percent, from 388.1 billion to 561.3 billion Euros. Regarding exports, Germany was able to maintain its global market share (Figure 1). Germany is benefiting from the dynamic development of markets in developing and emerging countries, from increased production and from growing consumption. Developing and emerging countries, above all China, are important markets for German companies.

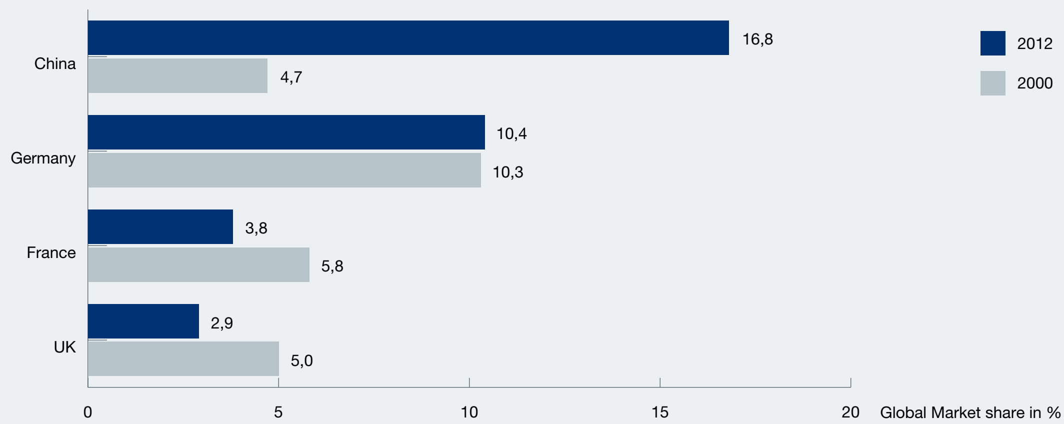
How important exports are to the German economy is underlined by their contribution to value added. In 2000, 17.7 percent of value added was derived from exports; in 2011 the figure was 21.8 percent. This contributed decisively towards keeping jobs in Germany and creating new ones. While there were approximately 6.9 million people employed in manufacturing in 2005, the number rose to almost 7.2 million by 2013 despite the 2009 economic crisis.

Few other established, industrialised nations have been able to turn globalisation to their advantage with comparable success. In the period 1995 to 2012, France managed to increase its industrial value added by only three percent, while Great Britain managed nine percent. In Japan, industrial value added decreased by seven percent. In the early 2000s, Germany carried out wide-ranging reforms to its social security system and job market. This included among others labour market reforms, stimulus for medium-sized businesses, as well as special training incentives for young people.

However, German success cannot be taken for granted. In the most recent "Global Competitiveness Report", which the Wold Economic Forum published in September 2014, Germany slipped from 4th to 5th place. Unless the proper groundwork is laid now, the German economy will find it significantly more difficult to keep up with international competition in the future.

Figure 1: Global market share in terms of manufacturing exports

In percent, 2000 and 2012



Source: WTO, 2014; own calculations IW Consult, 2014

BDI

Germany as Production Location Faces Risk of Becoming Less Attractive

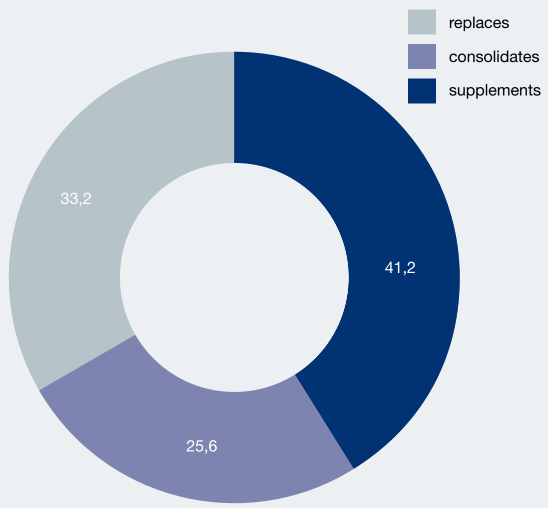
Germany is an attractive location for industry. In particular research and development (R & D) as well as product design activities of German companies tend to be located in Germany rather than abroad. Seen from the standpoint of businesses it is the existing R & D infrastructure which makes Germany a favourable business location.

According to data from the IW Future Panel (based on a representative survey conducted in autumn 2013 by the IW Cologne Research Institute involving 1,900 businesses in industry or services closely aligned to industry), 83 percent of employees involved in the production of German industrial goods still work in Germany. There are, however, considerable differences depending on the size of the business: In companies with 50 to 249 employees, only around 13 percent of employees are involved in production abroad, whereas the figure is 38 percent for businesses with 1,000 or more employees.

German companies produce abroad in order to be closer to markets undergoing dynamic growth, but also to take advantage of lower costs. According to data from the IW Future Panel production abroad for the most part supplements domestic production. This is the case for around 41 percent of companies with production abroad. For almost 26 percent of companies, locating production abroad has a consolidating effect. For a third of companies, production abroad replaces domestic production (Figure 2). In the future, the picture could change. According to the survey, the process of replacing domestic production with production abroad is set to increase further over the next five years: Around 38 percent of the companies expect additional production abroad to replace domestic production in the future (Figure 3).

Figure 2: Current relationship between production abroad and domestic production

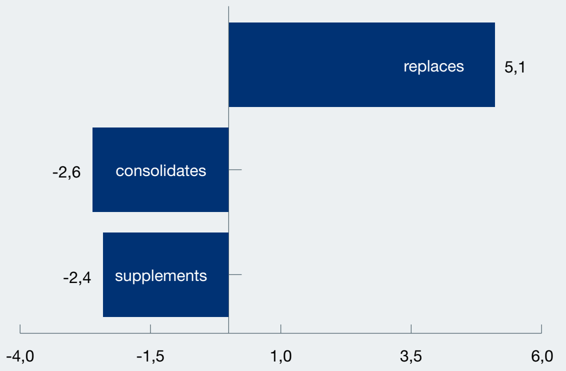
Nature of production abroad relative to domestic production (in percent)



Source: IW Future Panel, 2013

Figure 3: Relationship between production abroad and domestic production: future development

Expected change in the nature of production abroad relative to domestic production (in percentage points)



N=1.900, weighted by turnover

Source: IW Future Panel, 2013

IW Cologne's location quality index measures the levels of attractiveness to industry of 50 important, industrialised and industrialising nations (Group 50) using a set of indicators and an empirically derived weighting system. For Germany as a location for production, problems are prevalent and increasing where costs are concerned (electricity, labour, taxes, fuel and logistics costs): In terms of costs, Germany ranks 44th out of 50 countries on the location quality index. This is a particular shortcoming for Germany even when the high costs are offset against high productivity and the high quality of other locational factors.

An examination of developments in location quality over the past years provides further indication that Germany is becoming a less attractive business location. In terms of cost trends Germany comes in 37th out of the 50 countries examined – labour and energy costs developed particularly unfavourably.


CAI
CAXU 650585
22G1
msc
SHIPPING CO
MEDU 164093
22G1
IPXU 328338
22G1
TAL
TCLU 214348 3
22G1
CAPITAL
CMA CGM
tex

Growing Competition from Abroad

German companies not only continue to increase production abroad, they also increasingly purchase primary and intermediate inputs for domestic production abroad. German companies are successfully utilising global value chains and by so doing have contributed to their international competitiveness. Between 1995 and 2011 the proportion of foreign value added in German manufacturing exports rose from 18.5 to 30.4 percent (Figure 4). With this, German industry was able to raise its competitiveness in the global market place and expand exports. This has positive secondary effects for Germany, as growing exports have led to further increases in value added in Germany.

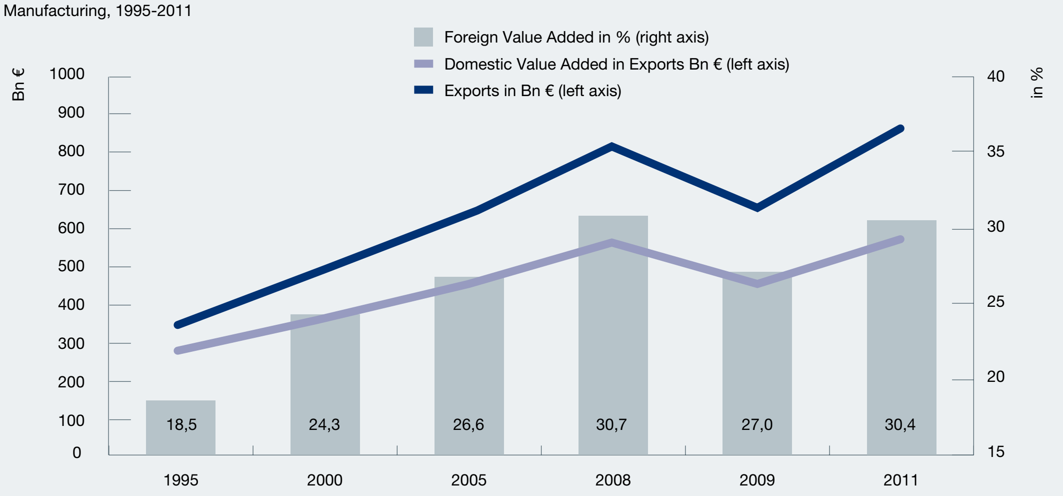
Even though German companies continue to have the bulk of their production located in Germany, they are investing more and more abroad. Between 2000 and 2012 the volume of German direct investment abroad rose from 541.9 billion US Dollars to 1,547.2 billion US Dollars. Businesses largely go abroad for two reasons: To produce more cost-efficiently and to service dynamically growing markets. Both serve to strengthen their international competitiveness.

Europe remains the most important location for production abroad. 67 percent of international production for German companies takes place within Europe, by far the most of which is located in the European Union (EU). Approximately half of production abroad still involves the established West-European industrialised nations.

However, German companies are also increasingly investing in developing and emerging countries. In light of different cost and qualification structures one would expect to see simpler tasks tending to be performed abroad at specific stages of the value chain. Yet, according to the IW survey this is not the case. For the most part (62% for industrial goods' manufacturing) it is equivalent tasks which are off-shored.

Figure 4: Gross exports, exports in terms of value added and imports as a proportion

German Manufacturing, 1995-2011



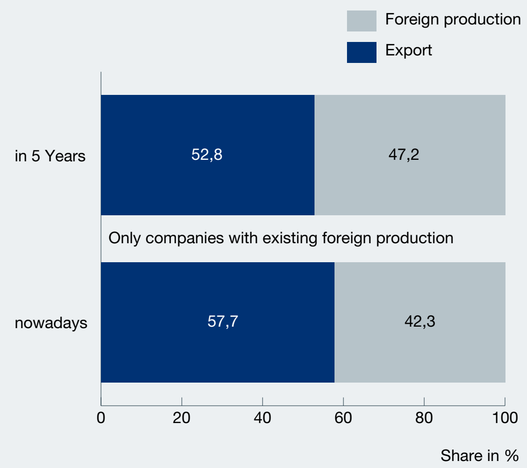
Source: TIVA, 2013; WIOD, 2013; own calculations IW Consult, 2014

Production abroad has seen a marked increase in recent years. Above all, larger industrial companies currently produce a significant amount abroad. This does not directly replace domestic production but it does reduce the prospect of expanding domestic production. In companies with existing production facilities abroad, foreign production already contributes 42 percent towards total foreign turnover. 58 percent of turnover generated through foreign activity is generated through exports. Companies forecast that in five years' time production abroad will contribute 47 percent towards foreign turnover (Figure 5).

Companies expect foreign-based production to develop more dynamically than domestic production in the future. Within the next five years companies with both foreign and domestic activities are planning to raise manpower levels at foreign sites with greater frequency than at domestic sites (Figure 6). Solely in the fields of research/development/product design are companies planning to hire more staff at both their foreign and domestic sites.

Figure 5: Export or foreign production?

Share of total foreign turnover today and in five years (in percent)



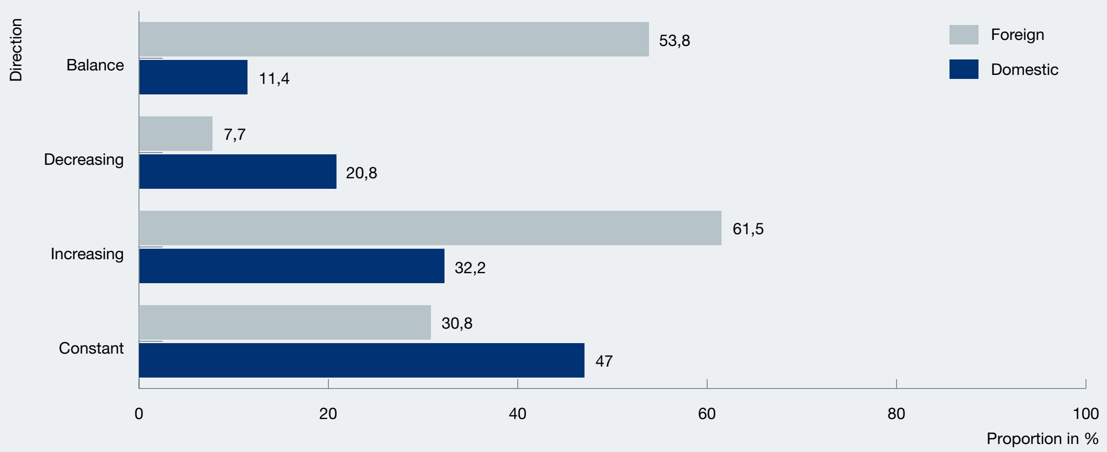
Weighted by turnover.

Source: IW Future Panel (2013)

A look at foreign investment supports this view. The overall volume of investment in expansion and upgrades is indeed still lower abroad than domestically. However, companies with foreign investments are increasingly focusing on expansion at their foreign sites rather than at domestic ones. In Germany, it is more a case of investing to maintain current levels rather than to expand.

Figure 6: Staff development in industrial goods production over the next five years

Companies with domestic and foreign production – proportions in percent



N=1.900; weighted by turnover

Source: IW Future Panel, 2013

German Industry's Focus on Europe Is Strength but Also Risk

At 70 percent, EU member states demonstrate the highest volume of intraregional trade when compared internationally (Figure 7). In Western Europe it is the close-knit production networks in particular which dominate – representing 60 percent of the total volume of intra-regional trade. Germany sits at the centre of the industrial production hub of Europe: It accounts for over a fifth of all inner-European imports of intermediate goods. Consequently, Germany is the EU member state not only with the highest export but also the highest import levels and therefore simultaneously the anchor and motor for other EU states' export activities. In 2009, 60 percent of the share of foreign value added in German exports came from the EU, roughly half of which from the EU-15.

Cross-border trade is a significant driver for economic integration in the EU. However, these highly-developed intraregional ties lead to mutual dependencies which have now become a challenge for the whole of Europe at a time of persistent economic stagnation and the resistance of some states to implement required structural reforms. While Eurostat figures show that Germany's gross domestic product grew at an annual average of 0.67 percent from the onset of the economic and financial crisis in 2009 to 2013, the Eurozone as a whole experienced an annual average decline of 0.2 percent during the same time period. An equally dramatic trend is observed in economic strength: between 2000 and 2012 the EU's share in global industrial value added fell from 25.7 percent to 20.8 percent.

The relative stagnation of inner-European trade in the period 2000 to 2012 together with increased intra-regional ties within Asia should be taken as a clear warning sign that competition is intensifying. Other regions of the world, particularly the East-Asian countries China, Japan, South Korea, Taiwan as well as the ASEAN countries, are increasingly involved in exerting their competitive advantage over the EU, for instance through closer economic cooperation. For this reason, German industry has high hopes for the new EU Commission which has put a comprehensive competition strategy and support for the internal European market at the centre of its agenda.

Figure 7: Intra- and interregional trade distribution

2012 and 2000, Share in percent of overall volume

2012

	Europe	America	Asia	Others	Total
Europe	70	8	18	4	100
America	16	52	29	3	100
Asia	17	15	62	6	100
Others	30	13	46	12	100

2000

	Europe	America	Asia	Others	Total
Europe	73	11	13	3	100
America	18	56	24	2	100
Asia	20	22	54	4	100
Others	39	18	32	11	100

Source: IMF, 2014

Industrial Suppliers' Diminishing Importance

Hub industries ("Drehscheibenindustrien" in German) play a crucial role in the German economy. These are branches of industry which purchase above average amounts of inputs for intermediate use and produce finished products for the global market, thereby finding themselves at the centre of global value chains. Amongst these are: the automobile industry, mechanical engineering and the chemical industry. The hub industries' pivotal economic function is highlighted by their high share in intermediate sourcing from other sectors. This share of joint production amounts to 11.3 percent of the total economy's gross value added.

While the hub industries continue to grow in importance, German industrial suppliers are losing in importance in relative terms. As before, they continue to provide around a quarter of the input materials for the hub industries and are therefore indispensable particularly for this part of the value chain. However, their proportion in overall economic value added and in production value is on the decline (Figure 8). Moreover, hub industries are buying more abroad. The distinct decline in share in value added must be interpreted as a warning sign, since there can be no effective value chains without industrial suppliers in Germany, often small or medium-sized enterprises (SMEs).

Figure 8: Changing shares in functions along the value chain

Industrial suppliers' and hub industries' share of gross value added (GVA), production value (PV) (i.e. value added as a result of the production/manufacturing process), and imports of intermediate inputs, in percent, Germany.

Source: WIOD, 2013; own calculations IW Consult, 2014

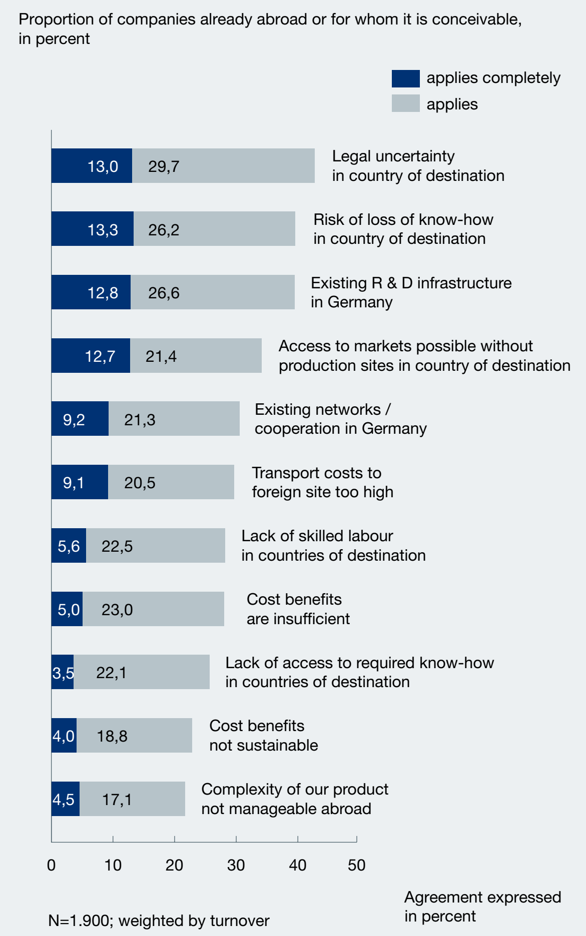
Small and Medium-Sized Companies Are Reluctant to Go Abroad

With an export quota of 40 percent, the German economy demonstrates a higher than average rate of internationalisation by global comparison, with a continuing upward trend. According to figures from the Federal Statistical Office (Statistisches Bundesamt), the export quota for the entire economy was only 18.9 percent in 1993. Manufacturing has been the main driver for exports, first and foremost pharmaceuticals (67.3 percent) and the automobile industry (64.9 percent), mechanical engineering (62 percent) as well as the chemical industry (59.4 percent). Foreign trade supports one in four jobs in Germany and accounts for half of German gross domestic product.

Nevertheless, the IW Future Panel established a distinct unwillingness amongst SMEs to offshore production. In light of the global shift in power and the increasing significance of distant markets, SMEs run the risk losing touch with companies operating internationally and no longer being considered as viable suppliers.

While the high-quality research infrastructure coupled with existing networks and cooperation with other companies are arguments against expanding production abroad for the majority of SMEs, companies with a workforce of 250 or more are already producing abroad. Medium-sized enterprises produce only a third of their products internationally, while small enterprises produce only 20 percent abroad. According to the IW Future Panel, specific arguments against international production are legal uncertainties in the country of destination and the possibility of losing intellectual property (Figure 9).

Figure 9: Arguments against producing abroad



Source: IW Future Panel, 2013

The question of how to offer relevant support to those SMEs which are still reticent to offshore is one which needs to be asked of politicians, associations, and established companies operating on an international basis and that are typically the SMEs' customers. In order to retain a large share of professional training, industrial employment and rural structures in Germany, a dual strategy for supporting small and medium-sized enterprises is indispensable.

On the one hand, we need to provide companies with security in regard to regulatory and investment planning at home. On the other hand, SMEs need to meet conditions internationally which allow them to enter new markets. The most important prerequisite for this is unrestricted access to foreign markets. Trade liberalisation such as that offered in the Transatlantic Trade and Investment Partnership (TTIP) between the U.S. and the EU would be of great benefit to small and medium-sized companies looking to expand their business abroad. The removal of tariffs and greater trade facilitation will lessen the obstacles which SMEs face when doing business abroad. In international markets broader legal conditions also need to be set to protect SMEs particularly with regard to intellectual property. Otherwise, established industrial suppliers in Germany run the risk of their partner organisations replacing them with foreign producers.

China: A Serious Competitor for German Industry

China now occupies third place in terms of Germany's most important trading partners behind the traditionally important markets of France and the United States. While just around 1.6 percent of all German manufacturing exports went to China in 2000, that number rose to 6.2 percent of all exports by 2011.

China also represents one of the most important destinations for German direct investment abroad. Almost half of the companies surveyed by IW Cologne with existing sites in China stated that production in China would increase or increase sharply in the next five years. In comparison, just a little over a third of companies expect similar increases in the new EU Member States, the second most important location for German investment after China.

In comparison to other countries, China has experienced a stronger than average increase in foreign direct investment (FDI). The volume of FDI in China rose from 193 billion US Dollars in 2000 to 716 billion US Dollars in 2012. Global competition is not solely limited to market share in exports and production. According to UNCTAD, Germany ranks amongst the top 20 most attractive countries for international investors in terms of annual FDI inflow. However, at 26.7 billion Dollars in 2013, Germany was ranked at place 15, way behind the United States (1st place: 187.5 billion US Dollars) and China (2nd place: 124 billion Dollars).

China's economic development is impressive. Within the G50 in the period from 2000 to 2012 a good two fifths of the increase in GDP of the emerging, industrialising nations can be attributed to China alone. In manufacturing, more than half of the share of the increase in gross value added from emerging, industrialising nations falls to China. As far as exports of these nations are concerned, China's contribution represents around 60 percent. In terms of global gross domestic product, China alone accounts for roughly half of the share of the increase produced by these nations, the other half going to Russia, Brazil, India and Indonesia together. According to the World Bank, China's share in global GDP was 3.7 percent in 2000, and by 2012 it had already risen to 11.5 percent.

China's development into a global, economic heavyweight on the world economic stage has intensified competition as far as German companies are concerned. While in 2000 China still occupied the top position as primary exporter to eleven countries, this figure was already 42 by 2012. Over the same time-frame China overtook Germany in 73 countries in the export rankings. According to IW Consult as early as 2000 China held a leading market position in 64 countries. Regionally, exports from China increased in particular to the established, industrialised nations of Europe and the emerging, industrialising nations of the Americas. Overall, China has climbed from 9th (2000) to 1st place (2012) in terms of share in global trade and in so doing has replaced the United States as world export champion. Germany occupies third place. As far as manufacturing is concerned the global shift in power is even more noticeable than in the general economy. According to IW Consult's calculations, China's share in global exports in manufacturing rose from 4.7 percent (2000) to 16.8 percent (2012).

The fact that China's industry is in the midst of a catching-up process applies across all technology classes (low, medium-low, medium-high and high-tech). In 2000, China was still a net importer in the high-tech segments, however in 2011 the country achieved export surpluses in all technology groups. It is not just the gap between China and Germany which has been reduced, but product complexity has also increased at a rapid pace. While China was still producing predominantly simple products at the beginning of the 2000s, it has now clearly overtaken other emerging, industrialising nations in the production of complex products and drawn level with the group of European emerging, industrialising nations.

Direct comparison between Germany and China as to the proportion of technology in exports confirms how intense the competition with China has already become. Germany's export strength lies first and foremost in medium-high-tech products. The high proportion of this segment in German exports has remained constant over past years with 15.4 percent in 2000 and 15.7 percent in 2011. For the same period China was able to achieve a clear increase in the proportion of medium-high-tech products in exports from 2.7 to 10.6 percent.

The extent to which competition vis-a-vis China has changed can be seen clearly when examining the proportion of exports in the high-tech domain. According to calculations by IW Consult, China was able to increase its market share in this segment five-fold from 4.3 percent (2000) to 21.4 percent (2011). The proportion of high-tech in German exports represents less than half of that achieved by the Chinese and only saw a slight increase from 8.2 percent (2000) to 9.4 percent (2011). Even if we were to take into account the fact that a considerable proportion of high-tech goods originating in China are produced by Western companies, the findings remain alarming.

China is developing into a serious competitor for German industry. According to data obtained in the IW Future Panel, 80 percent of German industrial companies still see themselves as having the technological edge over their Chinese competitors. However, the lead tends to be rather temporary in nature. 50 percent of companies with competition in China assume that their Chinese competitors will close the existing gap in the next five years. For a fifth of the companies with competition in China, their Chinese competitors are now in fact already on an equal technological footing.

Definition of Terms

Established, industrialised nations

For this study the 26 established, industrialised nations included the member states of the OECD except for Turkey and the OECD states of Central and Eastern Europe. We differentiate between Europe and other regions.

Emerging, industrialising nations

Included in the 24 emerging, industrialising nations are the G50 countries minus the established, industrialised nations. These are subdivided regionally into the emerging, industrialising nations of Europe, South-East Asia including China and other regions.

Group 50 (G50)

For this study the G50 group is a combination of the 50 leading industrialised nations plus the leading developing and emerging nations. The G50, or rather G49 (excluding Germany), are Germany's main industrial competitors. The criteria used are the size of their economy and how high a proportion industry represents. For the most part we exclude the oil-producing countries (e.g. the OPEC countries) plus locations such as Singapore and Hong Kong which act primarily as trade hubs. We differentiate between industrialised countries in terms of established and emerging. The former consists of the OECD members excluding Central and East-European states. Differentiating along established and emerging lines allows us to take a view of the dynamics in terms of classic and new competitors.

Hub Industries

These industries buy intermediate inputs on a large scale from industrial suppliers and branches outside of their industry and integrate them into their own products, e.g. the automobile and mechanical engineering industries.

Joint-Production

Value added which the given industry generates with other branches by purchasing inputs for intermediate consumption.


震旦
citi

Imprint

Publisher
BDI – Federation of German Industries
Breite Straße 29
10178 Berlin
T: +49 30 2028-0
www.bdi.eu

Editorial Staff
Dr. Stormy-Annika Mildner, Abteilungsleiterin
Abteilung Außenwirtschaftspolitik

Richard Bartel, Referent
Abteilung Außenwirtschaftspolitik

Design and Implementation
Sarah Pöhlmann
Abteilung Marketing, Online und Veranstaltungen

Print
Das Druckteam Berlin
www.druckteam-berlin.de

Picture Credits
Cover: © chungking / Fotolia.com
Page 7: 441990 / pixabay.com
Page 13: 214033 / pixabay.com
Page 17: 557497 / pixabay.com

Publishing Company
Industrie-Förderung GmbH, Berlin

Layout
Michel Arencibia
www.man-design.net

Stand
February 2015
BDI-Publikations-Nr.: 0022