

Erber, Georg; Hagemann, Harald

**Article**

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DIW Economic Bulletin

**Provided in Cooperation with:**

German Institute for Economic Research (DIW Berlin)

*Suggested Citation:* Erber, Georg; Hagemann, Harald (2013) : Growth and investment dynamics in Germany after the global financial crisis, DIW Economic Bulletin, ISSN 2192-7219, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 3, Iss. 2, pp. 15-24

This Version is available at:

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# Growth and Investment Dynamics in Germany After the Global Financial Crisis

by Georg Erber and Harald Hagemann

The German economy recovered more rapidly than the majority of other developed countries from the severe slump that the global economic and financial crisis brought in its wake. Weak demand in the euro area was offset by robust growth in exports to countries outside the region. The German economy's strong competitive position on global markets, particularly on the dynamic emerging and developing markets, played a vital role here. In contrast, over the last decade, the euro area's crisis countries in particular have experienced a decline in their competitiveness on international markets. Due to their dependence on the single European market and failure to focus on innovative products in demand on global markets, they are among the losers in the global competition for foreign direct investment. The reforms that have been introduced will not be able to generate an immediate trend reversal. Even Germany will struggle to maintain its favorable market position as global structural change and competition to attract business to the region are likely to increase in intensity.

In the mid-1980s, Herbert Giersch, then President of the Kiel Institute for the World Economy (IfW), made headlines with his paper on *euroclerosis* in Germany.<sup>1</sup> Giersch rejected the tendency that had already gained favor in Europe of addressing the challenges of a rapidly changing global economy with unilateral national initiatives and protectionist measures as well as sovereign debt and inflation rates. Instead, Giersch advocated far-reaching structural reforms along with further integration to boost the competitive position of Europe's economy in global markets. Up to that point, the US was perceived as Europe's fiercest economic competitor,<sup>2</sup> followed by Japan<sup>3</sup> and the four small Asian tiger economies<sup>4</sup> throughout the 1980s. The collapse of the Soviet Union, the dissolution of Comecon,<sup>5</sup> the transition in Eastern European countries to a free market economy as well as the opening up of China to global trade culminating in full accession to the World Trade Organization (WTO) in 2001 were further radical world economic changes.

The extremely ambitious Lisbon Agenda, which was adopted in 2000 along with the introduction of the euro and shortly before the end of the »new economy« boom, targeted annual economic growth of three percent in the next decade; an objective it failed to achieve.<sup>6</sup>

According to Eurostat data, from 2001 to 2010, average annual economic growth in the EU-27 countries

Georg Erber is a research associate in the Competition and Consumers Department at DIW Berlin | [gerber@diw.de](mailto:gerber@diw.de)  
Harald Hagemann is a Professor at the University of Hohenheim | [hagemann@uni-hohenheim.de](mailto:hagemann@uni-hohenheim.de)

JEL: F14, F15, F43

Keywords: Germany, innovation, growth, investment

First published as "Deutschlands Wachstums- und Investitionsdynamik", in: DIW Wochenbericht Nr. 46.2012

- 1 H. Giersch, »Euroclerosis«, Kieler Diskussionsbeiträge, no. 2 (1985).
- 2 J. J. Servan-Schreiber, *American Challenge* (London: 1968).
- 3 E. Vogel, *Japan as Number One: Lessons for America* (Cambridge, Mass: 1979).
- 4 South Korea, Hong Kong, Singapore, and Taiwan.
- 5 Comecon (Council for Mutual Economic Assistance) was the economic alliance of socialist states under the leadership of the Soviet Union which was dissolved in 1991.
- 6 »The objective of the Lisbon Agenda was to increase the competitiveness of the European Union. The aim was, therefore, to increase productivity and speed of innovation in the EU through a variety of political measures.« See European Council: Presidency Conclusions, March 23 and 24, 2000, Lisbon.

was only around 1.2 percent, and in the euro area, one percent. Italy had the weakest growth of any EU-27 or euro area country with just 0.2 percent, trailing behind Portugal and Denmark both with 0.5 percent, and Germany with 0.6 percent. A comparison with the US where growth was 2.1 percent and Japan (1.7 percent) is also unfavorable. The current crisis could almost be interpreted as a continuation of the developments of the 1980s as, once again, Europe—presently with the exception of Germany and a few other northern and Eastern European countries—is finding it increasingly difficult to maintain its position amid international competition.<sup>7</sup>

### Divergence Within the Euro Area

Unlike the majority of the other EU-27 member states, Germany recovered relatively quickly from the severe economic downturn of 2009 with a 5.1 percent decline in economic output. While the EU-27 as a whole continued to grow at an average annual rate of 1.2 percent between 2010 and 2012, the German economy expanded by approximately 2.6 percent per year i.e. at more than twice that rate. German manufacturing in particular proved to be an engine of growth; the industry's two showcase sectors, vehicle construction and mechanical engineering, managed to remain competitive in the global market.<sup>8</sup> On the whole, the German manufacturing industry's increasing specialization in capital goods and high-value consumer durables, such as automobiles, has proven to be a successful mechanism to avoid intense price competition with the emerging economies.<sup>9</sup> At the same time, however, it is distinctly possible that weaknesses may continue to exist in the advanced technology sector.<sup>10</sup> The question therefore arises as to why the tide within Europe has changed so dramati-

#### Box 1

#### Trade with China Driving Growth in German Economy

In the first half of 2012, China accounted for an 8.8 percent share (72.7 billion euros) of the total export trade of the EU-27 countries (828 billion euros). During this period, German exports to China amounted to 34 billion euros which corresponds to a share of 47 percent of total EU-27 exports to this country. France and the UK took second and third place with eight and six billion euros, respectively (see Figure 1). Germany's share of imports was considerably smaller with 21 percent of the EU-27's total trade with China. Based on the country of reception principle, Germany is the only country in the EU-27 that recorded a foreign trade surplus with China (four billion euros),<sup>1</sup> while all other EU-27 countries registered trade deficits. The Netherlands recorded the highest deficit (22 billion euros) followed by the UK, with 14 billion euros, Italy with eight billion euros, and Spain and France with five billion euros each.<sup>2</sup> Overall, the EU-27 countries registered a total trade deficit with China of approximately 67 billion euros.

Germany's trade with China is, thus, characterized by a unique trait: it can cover its imports from this country with exports of goods and, therefore, in the first half of 2012 was able to achieve a surplus despite China's economic slowdown (see Figure 2).

<sup>7</sup> G. Erber and M. Schrooten, »Germany Profits from Growth in Brazil, Russia, India, China, and South Africa: But for How Much Longer?« DIW Economic Bulletin 10 (2012): 16–22.

<sup>8</sup> M. Gornig and A. Schiersch, »German Manufacturing Withstands the Rise of Emerging Economies,« DIW Economic Bulletin 5 (2012): 10–14.

<sup>9</sup> G. Erber and H. Hagemann, »Wachstums- und Investitionsdynamik in Deutschland,« Discussion Paper series »Globalisation and employment«, no. 36 (Stuttgart-Hohenheim: 2012).

<sup>10</sup> Commission of Experts for Research and Innovation (EFI), Report on Research, Innovation, and Technological Performance in Germany, (Berlin: 2012). However, exports from the advanced technology sector could be partially distorted due to the statistical coverage of the aeronautics and aerospace industry. Eurostat uses the country of shipping principle as opposed to the country of origin principle which is, to a certain extent, to the benefit of France and detriment of Germany and other member states. According to this method, in the case of the Airbus A380, for example, intermediate trade from Germany as the country of origin is recorded as intra-EU trade with France, and the finished A380 is registered as external French trade in the advanced technology sector. The German Federal Statistical Office, on the other hand, uses the country of origin principle which means that Eurostat data can diverge substantially from that of the Federal Statistical Office.

<sup>1</sup> This is based on the Rotterdam Effect. However, applying the country of origin principle used by the German Federal Statistical Office also only reveals a slight deficit. However, as Eurostat statistics for all other countries are based on the country of reception principle, the shares shown here were also calculated using the same method.

<sup>2</sup> Eurostat, »Außenhandelsdefizit der EU-27 mit China sank auf 67 Milliarden Euro in der ersten Jahreshälfte 2012,« press release 135 (September 18, 2012).

However, a marked cooling off of Chinese foreign trade has been observed recently, also with Germany. To what extent this is a temporary development will be revealed over the coming months. The Chinese government has manifestly redoubled its efforts to return the economy to a higher level of growth through public spending programs for infrastructure development, and by relaxing lending rates.<sup>3</sup> However, the effect of these measures is only likely to come to fruition in the coming year when they might also revive the German export economy.<sup>4</sup>

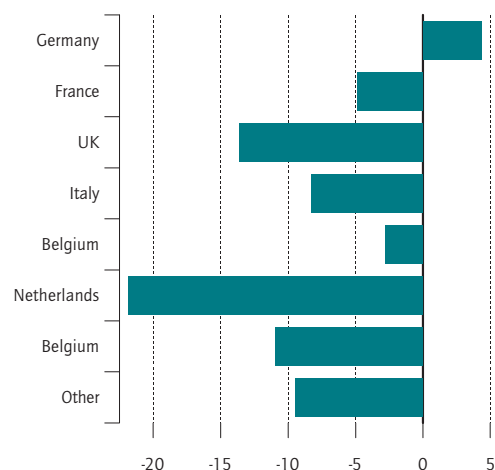
<sup>3</sup> A. Evans-Pritchard, "China launches £94bn infrastructure stimulus package," *The Telegraph*, September 7, 2012

<sup>4</sup> Bloomberg News: China Investment Seen Failing to Secure Growth Rebound This Year. 21 September 2012.

Figure 2

### EU Balance of Trade with China in the First Half of 2012

In billion euros

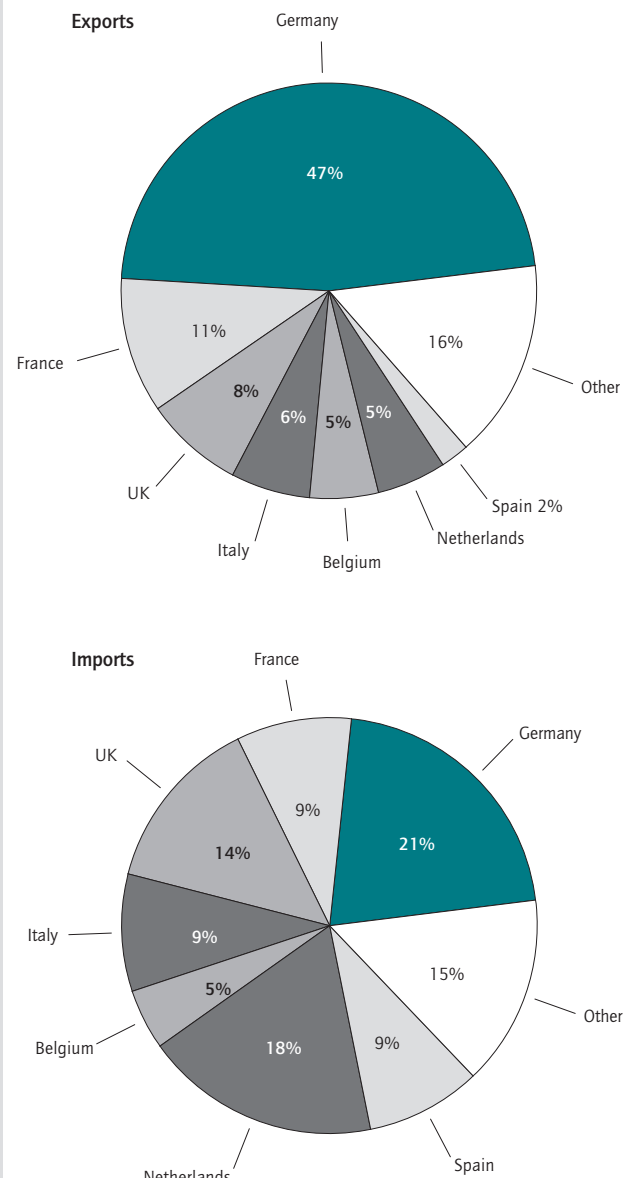


Source: Eurostat.

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Figure 1

### EU Exports and Imports with China in the first half of 2012



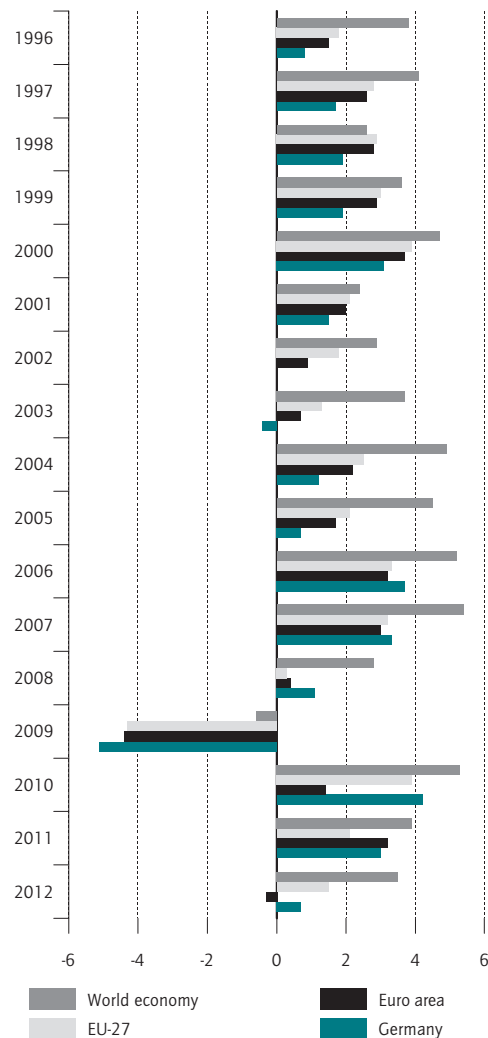
Source: Eurostat.

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Figure 1

**Real Economic Growth**

Change in comparison with the previous year, in percent



Sources: IMF; Eurostat.

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Germany benefitted from the global economic growth that followed the crisis.

cally in Germany's favor, particularly compared to what are referred to as the PIIGS.<sup>11</sup>

Evidently, the capacity of the German economy to stand up to international competition, also from outside the

EU, has played a key role here.<sup>12</sup> This is best elucidated using China as an example (Box 1). Germany was quick to identify the problem of increasing global competition in foreign direct investment during 1990s.<sup>13</sup> Unlike Germany, however, many EU economies have thus far failed to adapt to the new realities of globalization. The process of modernization within the euro area has varied from country to country. This is also apparent when comparing levels of specialization in research-intensive goods (see Table 1).<sup>14</sup> While Germany, France, and also the UK rose to the challenges of competition with the rest of the world, Italy, in particular, revealed significant shortcomings.

What was criticized in the mid-1990s by US economist Paul Krugman<sup>15</sup> as a German obsession, turned out in retrospect to be an appropriate response to the impending weaknesses of developed economies in the global competition for direct foreign investment. Clearly, these economies were, therefore, unable to profit to the same extent as Germany from the economic growth experienced by the rest of the world following the crisis (see Figure 1).

The relocation of production plants or even entire sectors of the economy from developed economies to other regions of the world often results in sustained losses in employment and value added, forcing the countries affected to adjust their income levels. The current downturn in employment recorded in southern European countries cannot be interpreted as a purely cyclical problem. Here, there is a real threat of sustained structural unemployment as a conventional economic upswing is not sufficient to remedy the cutbacks in capacity precipitated by the banking crisis (see Figure 2).<sup>16</sup>

<sup>12</sup> S. Allafi, »Außenhandelsergebnisse nach Wirtschaftszweigen 2010,« in *Wirtschaft und Statistik* (September 2012): 760–771; G. Erber, »Dichtung und Wahrheit: Deutschlands Position bei Lohnstückkosten, Extrahandel und realen Wechselkursen in der Eurozone – was sagt die Statistik?« *Ifo Schnelldienst* 65, no.5 (2012): 20–34; G. Erber, »Irrungen und Wirrungen mit der Leistungsbilanzstatistik,« *Wirtschaftsdienst: Zeitschrift für Wirtschaftspolitik* 92, no.7 (2012): 465–470.

<sup>13</sup> H. Siebert, »Zum Paradigma des Standortwettbewerbs,« *Walter Eucken Institut, Beiträge zur Ordnungstheorie und Ordnungspolitik* 165 (2000); Act to Improve the Conditions of Taxation to Ensure Germany's Position as a Site for Economic Activity in the European Single Market (Investment Promotion Act), *Federal Law Gazette (BGBl.) I*, 1569, September 13, 1993.

<sup>14</sup> B. Gehrke and O. Krawczyk, »Außenhandel mit forschungsintensiven Waren im internationalen Vergleich,« *Studien zum deutschen Innovationssystem*, no. 11, *Niedersächsisches Institut für Wirtschaftsforschung* (Hannover: February 2012).

<sup>15</sup> P. Krugman, »Competitiveness: A Dangerous Obsession,« *Foreign Affairs*, 73, no.2 (March/April 1994).

<sup>16</sup> E. Phelps and G. Zoega, »Structural booms,« *Economic Policy*, vol. 16, no. 32 (April 2001): 83–126. E. Phelps, *Structural Slumps: The Modern Equilibrium Theory of Unemployment, Interest, and Assets*, (Cambridge, Mass.: 1984).

<sup>11</sup> PIIGS: Portugal, Ireland, Italy, Greece, and Spain.

Table 1

**Export Specialization in Research-Intensive Goods**RXA<sup>1</sup> values

	Germany	France	UK	Italy	EU-14 <sup>2</sup>	US	Japan	South Korea	China
<b>R&amp;D-intensive goods</b>									
1995	13	-3	12	-32	-11	24	37	2	-85
2000	12	2	17	-37	-7	21	33	8	-54
2005	11	0	10	-40	-6	18	28	18	-19
2010 <sup>3</sup>	14	9	11	-34	-5	10	27	-	-13
<b>High-quality technology</b>									
1995	32	0	2	-10	-3	4	43	-15	-88
2000	33	6	7	-8	1	2	47	-19	-73
2005	30	8	9	-13	5	5	42	-5	-73
2010 <sup>3</sup>	34	5	25	-5	10	16	47	-	-53
<b>Advanced technology</b>									
1995	-46	-9	24	-97	-27	55	27	28	-78
2000	-35	-10	25	-113	-20	39	1	34	-30
2005	-36	-15	13	-122	-38	37	-3	49	36
2010 <sup>3</sup>	-38	15	-22	-130	-38	-3	-24	-	34

1 A positive RXA value means that this product group's share of the global market supply is higher than that of the manufacturing industry in total.

2 Old EU countries (excluding Germany).

3 Estimated global exports.

Sources: OECD; ITCS - International Trade by Commodity Statistics; Comtrade database, Rev.3, calculations and estimates by DIW.

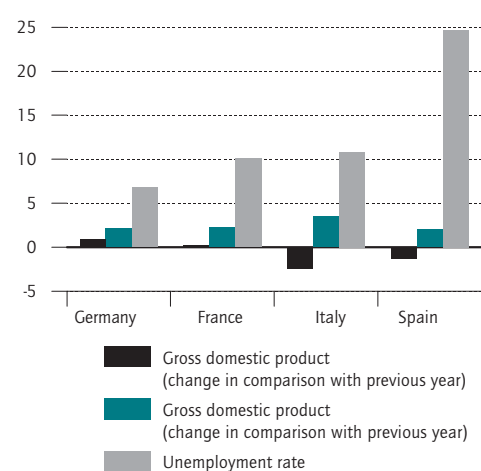
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Italy is particularly weak in the advanced technology field, while Germany and Japan are especially successful in the high-quality technology sector.

Figure 2

**Real Gross Domestic Product, Inflation Rate, and Unemployment Rate in 2012**

In percent



Source: DIW Autumn Guidelines, 2012.

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The Spanish unemployment rate is three times that of Germany.

Germany had a similar negative experience with the integration of East Germany where, despite radical labor market reforms, including Agenda 2010, unemployment was still almost double (2011: 11.3 percent) that of West Germany (2011: 6.0 percent). Despite significantly lower wages and massive state subsidy programs over more than 20 years, to this day there has been no convergence of investments and therefore of employment and income.<sup>17</sup>

**Weak Investment Results in Declining Competitiveness**

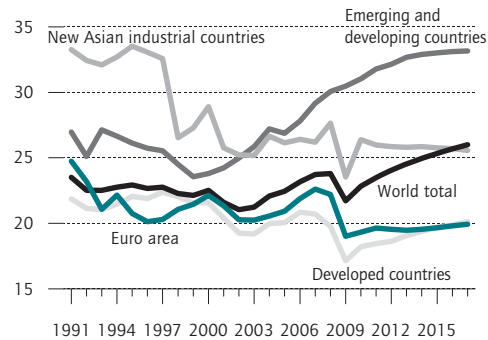
A major contributing factor to the weak economic growth in Europe and other leading industrial countries, such as the US and Japan, has been the concurrently weak in-

<sup>17</sup> Annual Report of the Federal Government on the Status of German Unity 2012. Federal Ministry of the Interior, Berlin. The economic convergence of eastern and western Germany has been stagnant for a number of years. In the previous year, due to the crisis, a slight divergence was even observed. According to the report, per capita GDP in eastern Germany is «currently 71 percent of the west German level.» In the two previous years, this figure was as high as 73 percent. The main reason for the widening gap is that «GDP growth in eastern Germany is 2.5 percent which is lower than the national average of three percent.» P. Heimann, «Westrente nicht in Sicht,» Sächsische Zeitung, September 27, 2012.

Figure 3

**Gross Fixed Capital Formation**

Share of gross domestic product, in percent



Source: IMF database.

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Investment rates in the emerging economies continue to rise.

vestment (see Figure 3). Investment rates in developed economies have been on a downward trend since the mid-1990s and the International Monetary Fund (IMF) has only forecast a slight recovery in the medium term.<sup>18</sup> With an investment rate increase of approximately 33 percent, however, the developing and emerging markets have a commanding lead although it is also worth noting that investment rates in the Asian developing countries, just as in developed economies, are on the decline. Nevertheless, in Asia, the investment rate is still well over 25 percent.

So what was diagnosed at the beginning of the 1980s as sustained weak investment in Europe has now also taken hold in Japan and the US.

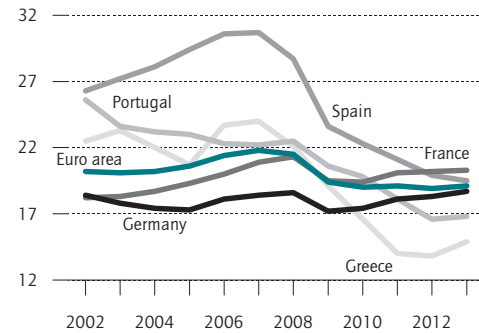
South Korea followed by China, in particular, have, for some time, been pursuing a strategic offensive with a view to becoming world centers of innovation. Correspondingly, in the last decade, these two countries recorded the highest growth in expenditure on Research and Development (R&D) as a share of GDP. R&D intensity in South Korea is currently already on a par with that of Sweden and Finland. After reunification, Germany slid from a leading to a mid-table position among OECD countries but, during the course of the last decade, an increase in R&D intensity was observed and Germany is presently neck and neck with the US, lagging behind Japan, but doing considerably better than the UK and

<sup>18</sup> International Monetary Fund, „The Good, the Bad, and the Ugly: 100 Years of Dealing with Public Debt Overhangs,“ chap. 3 in *World Economic Outlook*, (Washington D.C.: 2012).

Figure 4

**Gross Fixed Capital Formation in Euro Area**

Share of gross domestic product, in percent



Source: Eurostat, including forecasts for 2012 and 2013.

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In the crisis countries, investments are down significantly more than in Germany or France.

France.<sup>19</sup> In the southern European countries, mainly due to more limited private investment, R&D intensity is less than half of that of the Scandinavian countries. This is the main reason for the weak competitive capacity of these countries.

When relocating investments, which is part of global competition for direct foreign investment, multinational companies look for investment locations that promise the highest returns.<sup>20</sup> Here the growth prospects of the respective markets play a vital role. Only by concentrating more on the parts of the value chain which correspond to prevailing regional conditions can developed economies maintain or further develop their positions. The losers in the global competition for direct foreign investment, however, must be prepared for significant losses in growth and employment. Thus, a certain proportion of the high unemployment in these countries is structural.<sup>21</sup>

<sup>19</sup> See EFI, Report on Research (2012): 129; and, on China, Japan, and South Korea's innovation systems: H. Hagemann, J. P. Christ, R. Rukwid, and G. Erber, *Die Bedeutung von Innovationsclustern, sektoralen und regionalen Innovationssystemen zur Stärkung der globalen Wettbewerbsfähigkeit der baden-württembergischen Wirtschaft*, Centre for Research on Innovation and Services (FZID) (Stuttgart-Hohenheim: 2011), particularly chap. 5.

<sup>20</sup> H. Belitz, „Internationalization of Business Research: New Locations Gaining Ground,“ *DIW Economic Bulletin* 8 (2012): 13–19; D. Winkler, *Services Offshoring and its Impact on the Labour Market: Theoretical Insights, Empirical Evidence, and Economic Policy, Recommendations for Germany* (Berlin and Heidelberg: 2011).

<sup>21</sup> Eurostat, „Euro area unemployment rate at 11.4%, EU-27 at 10.5%,“ Euro-indicators, no. 138 (October 1, 2012); „Arbeitslosigkeit steigt auf Negativ-Rekord, 18,2 Millionen Menschen in der Eurozone ohne Job,“ *Money Online* (October 1, 2012).



Table 2

**Nominal<sup>1</sup> Gross Fixed Capital Formation**

Euro area = 100

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 <sup>2</sup>	2013 <sup>2</sup>
Belgium	3.5	3.4	3.6	3.7	3.6	3.7	3.9	4.1	4.1	4.2	4.4	4.4
Germany	26.4	25.2	24.1	22.9	22.8	22.8	23.1	23.6	25.0	26.1	26.9	27.4
Ireland	1.9	2.1	2.3	2.6	2.6	2.5	2.0	1.5	1.1	0.9	0.9	0.8
Greece	2.4	2.7	2.6	2.4	2.7	2.7	2.6	2.6	2.2	1.7	1.6	1.6
Spain	12.9	14.1	14.9	15.9	16.5	16.4	15.7	14.3	13.4	12.4	11.6	11.0
France	19.0	19.2	19.5	19.8	19.7	20.1	20.7	21.3	21.6	22.3	22.8	22.8
Italy	18.5	18.2	18.2	17.9	17.4	17.0	16.6	17.0	17.5	17.1	16.9	16.9
Netherlands	6.3	6.1	5.8	5.8	5.8	5.8	6.1	6.3	5.9	5.9	5.7	5.6
Austria	3.3	3.4	3.3	3.2	3.0	3.0	3.1	3.3	3.4	3.6	3.7	3.7
Poland	2.7	2.3	2.3	2.7	2.9	3.4	4.1	3.8	4.0	4.1	4.3	4.2
Portugal	2.4	2.2	2.2	2.1	2.0	1.9	1.9	2.0	2.0	1.7	1.5	1.5
Romania	0.7	0.7	0.8	1.1	1.4	1.9	2.2	1.7	1.7	1.9	2.0	2.1
Finland	1.8	1.8	1.9	1.9	1.8	2.0	2.0	2.0	1.9	2.1	2.1	2.1
Sweden	3.1	3.1	3.1	3.2	3.3	3.4	3.4	3.0	3.6	4.0	4.1	4.1
UK	19.4	17.8	18.6	18.3	18.2	18.6	15.3	13.5	14.6	13.8	14.9	15.3
Norway	2.5	2.3	2.4	2.8	2.9	3.3	3.3	3.4	3.6	3.9	4.3	4.4
US	141.2	120.7	115.3	120.3	117.2	101.1	89.8	91.7	94.6	91.6	106.3	111.5
Japan	65.3	56.5	52.4	49.0	43.0	36.5	37.1	43.5	47.8	48.4	54.4	54.0

<sup>1</sup> Calculations based on current exchange rates.<sup>2</sup> Forecasts by Eurostat.

Source: Eurostat, calculations by DIW Berlin.

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Investment in the US and Japan shows weaker growth than in the euro area.

Since the onset of the crisis, there has been a dramatic decline in the investment rates of the euro area countries, particularly those which had previously experienced rapid growth, such as Spain, Portugal, and Greece (see Figure 4). Conversely, in Germany, a slight increase can be determined from a low point of 17.3 percent in 2005 to a forecast 18.3 percent in 2012. The large euro area member states are presently neck to neck with approximately 20 percent. If economic growth in the southern European countries continues to lag much further behind Germany, investment here has, evidently, to a great extent, been unsuccessful (keyword: »malinvestment«).<sup>22</sup> If shifts in gross fixed capital formation within the EU and also compared to the US and Japan are considered instead, then investment volumes in the US and Japan appear to decline significantly.

<sup>22</sup> Malinvestment is a concept taken from the Austrian Business Cycle Theory by Mises and Hayek and refers to business investments. Malinvestments are made by companies due to artificially low interest rates and an unsustainable increase in money supply. Such investments ultimately result in losses and premature depreciation as they abruptly become unprofitable due to changed circumstances. Even a leading Keynesian economist like Axel Leijonhufvud identified the Federal Reserve's monetary policy, which was, at times, inordinately expansive as one of the fundamental causes of the global financial and economic crisis as, due to excessively low interest rates, this led to inflation of asset prices. See A. Leijonhufvud, »Out of the corridor: Keynes and the crisis,« Cambridge Journal of Economics, 33 (2009): 741-757.

Table 3

**Global Competitiveness Index Rankings 2011-2012**

Switzerland	1	South Korea	24
Singapore	2	China	26
Sweden	3	Ireland	29
Finland	4	Estonia	33
US	5	Spain	36
Germany	6	Poland	41
Netherlands	7	Italy	43
Japan	9	Portugal	45
UK	10	Cyprus	47
Belgium	15	Malta	51
France	18	Slovenia	57
Austria	19	Slovakia	69
Luxembourg	23	Greece	90

Source: WEF Global Competitiveness Report.

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Competitiveness varies greatly within the EU.

Thus, the USA/euro area quotient shows a drop for the US from 141.2 percent in 2002 to just 106.3 percent in 2012 (see Table 2). Japan experienced a similar downturn; the quotient fell from 65.3 in 2002 to just 36.5 percent in 2007 but since then has increased again to



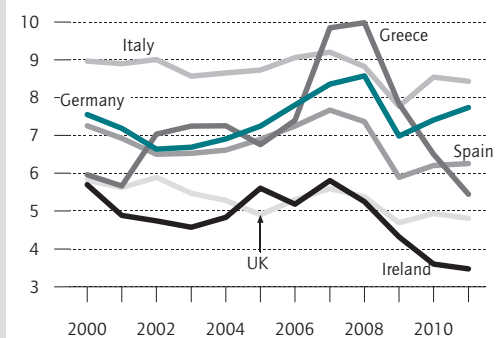
## Box 2

**Investment Rates by Types of Investment**

The global investment rate only provides a rough picture of the underlying structural changes in investment development. In particular, the major differences in construction investment among developed economies recently have played a significant role. Therefore, in the following, gross fixed capital formation is broken down into buildings and equipment, and residential buildings are listed separately. In addition to the large member states of the euro area, Germany, France, Italy, and Spain, the three smaller crisis countries, Greece, Portugal, and Ireland, were also included in the analysis. The UK and the US are used as additional reference countries. The time period for the data extends from 2000 to 2011.

Both Ireland and the UK have particularly low rates of investment in equipment (see Figure 1). In Ireland, they fluctuated between 5.8 and 4.6 percent of gross domestic product until the start of the crisis in 2009. Since then, they have fallen to 3.5 percent in 2011. Rates in the UK fluctuated between 4.9 and 5.9 percent from 2000 to 2008 and since then have remained relatively stable at 4.8 percent. But since the UK's current economic performance is declining due to a prolonged recession, investment in equipment has fallen, in absolute terms, to the base price from 2005. Italy is the front-runner in equipment investment, based on investment rates. Here, the rate has varied between 9.2 and 7.8 percent and in 2011, it had a mean value of 8.4 percent. Consequently, the economic and financial crisis has not yet affected Italian equipment investment in relation to economic performance. However, Italy's economy is headed toward recession, which means that investment in equipment will also decline in absolute terms. The picture is very different in Germany. Up to 2006, the German economy experienced a phase of slow growth which manifested itself in a low rate of investment in equipment. The nadir was reached in 2003 at 6.3 percent. In 2011, Germany was ranked second behind Italy with 7.7 percent. It is worth noting

Figure 1

**Investment in Equipment**Share of gross domestic product,<sup>1</sup> in percent<sup>1</sup> At 2005 prices.

Source: Ameco, calculations by DIW Berlin.

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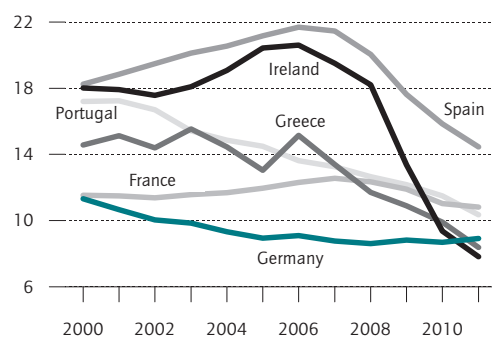
that, in the years before the economic crisis, Greece experienced a short-term investment boom. From 6.8 percent in 2005, investment in equipment shot up to ten percent by 2008. After that, it decreased again to a still substantial 5.8 percent. However, the problem remained that, in absolute terms, investments in equipment declined significantly due to the severe recession. In terms of their equipment investment rates, Portugal and Spain are mid-table. Consequently, despite the crisis, Portugal and Spain were also recently ranked mid-table with 6.1 and 6.3 percent, respectively.

A look at construction investment rates shows a very different picture (see Figure 2). The current four crisis countries, Spain, Ireland, Portugal, and Greece, reported particularly high construction investment rates up until the outbreak of the crisis in 2008. The construction boom in Spain and Ireland that led to their property

54.4 percent. In 2012, Germany is expected to record a 26.9 percent share of investments in the euro area. This would be the highest since 2002 after having reached its nadir in 2007 and 2008 with 22.8 percent. According to estimates by the EU Commission, 2013 will see this development continue. The losers in this situation, on

the other hand, are the southern European crisis countries. The Eastern European EU member states which are not part of the euro area, however, have experienced significant gains compared to the euro area as a whole.

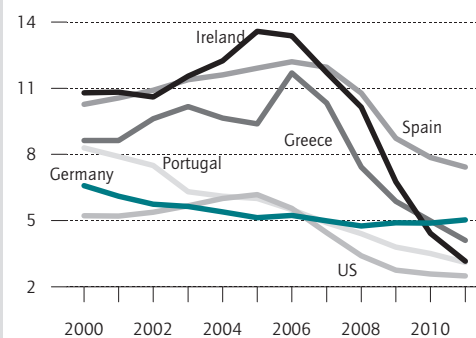
Figure 2

**Investment in Construction**Share of gross domestic product,<sup>1</sup> in percent<sup>1</sup> At 2005 prices.

Source: Ameco, calculations by DIW Berlin.

© DIW Berlin 2013

Figure 3

**Investment in Residential Properties**Share of gross domestic product,<sup>1</sup> in percent<sup>1</sup> At 2005 prices.

Source: Ameco, calculations by DIW Berlin.

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bubbles was particularly significant. Portugal reached a peak of 17.2 percent in 2000, which then receded gradually to 10.3 percent. In Greece, too, construction investments were higher than average before the crisis with values of around 15 percent. Since then, their construction investment rate has almost halved. A significantly more moderate increase in construction investment was observed in France. In Germany, construction investment was weak but has increased since the start of the crisis. It is worth noting that there was no discernible boom in total construction investment before the housing crisis in the US. Certainly, investment in construction fell significantly when the sub-prime crisis broke out. In 2011, it was only 6.4 percent, which is ranked near the bottom of all countries being considered in the present paper.

When investments in residential buildings are separated from construction investment as a whole, it becomes even more apparent in the three crisis countries, Spain, Ireland, and Greece, that the boom was in residential property (see Figure 3), which ended in the real estate bubble bursting between 2006 and 2008. It is therefore not plausible that these developments are solely due to the housing bubble bursting in the US. However, the financial crisis has led to the financing options for real estate in the US and in Europe deteriorating significantly. Consequently, the contagion effect of a crisis of confidence in the value of property encumbered with mortgages has been felt in Europe. Overall, German investment, particularly in residential properties, ran counter-cyclical to the remaining countries

## Financial Crisis Brings Abrupt End to Economic Boom

The southern European members of the euro area drove each other into recession due to falling import demand. After a time delay, this contagion effect means

that it has now reached the other euro countries, including Germany. In particular, the southern European countries are suffering from a double crisis. First, in the decade from 2000 to 2010, their competitive position deteriorated compared to northern and Eastern European countries and the rest of the world economy.

Second, the global economic and financial crisis led to a debt crisis because the end of the housing boom caused these countries' growth model to lose its financial footing. The World Competitiveness Index<sup>23</sup> published by the World Economic Forum illustrates the competitive differences between the member states of the European Union (see Table 3).

While the southern European countries initially appeared to benefit from the introduction of a common currency due to unprecedentedly low interest rates, this development eventually led to huge malinvestments, especially in real estate, as was the case in Spain and Ireland, and to consumption on credit (see Box 2). Also, investments were not sustainable (for example, in the textile industry in Portugal) due to competition with emerging economies to attract foreign investment.

These developments necessitated extensive rescue efforts by the governments of Ireland and Spain to prevent the financial markets collapsing. As a result, there were dramatic increases in government debt. Due to the loss of confidence in public finances, there was massive capital flight from the crisis countries despite many economic rescue efforts by euro area member states.

As in eastern Germany in the 1990s, the main problem here was the rapid increase in wages without a simultaneous increase in productivity. Assuming that a convergence of income and living conditions would occur on entering the euro area, wages and social benefits were increased disproportionately when compared to the EU average. However, the material conditions for a corresponding increase in productivity were not in place.<sup>24</sup>

The credit-financed boom in domestic demand triggered a price-wage spiral which led to a divergence with other member states, in particular with Germany.

This divergence became apparent in 2006, i.e., even before the crisis hit. It lasted until 2011 because member countries of the euro area were able to keep pace with Germany's economic expansion thanks to short-term economic stimulus packages. Once the stimulus packages had expired, the pace of growth slowed again. The combination of weak endogenous growth due to lack of international competitiveness and consolidation constraints

resulting from a balance-sheet recession<sup>25</sup> in the crisis countries has led to dramatic unemployment and an economic downturn unparalleled since the end of World War II. Although these countries are currently reducing their current account deficits,<sup>26</sup> this is not due to increased competitiveness and an economic recovery with rising growth, but the result of widespread capital flight and a credit crunch that is driving the domestic economies further into recession.

## Conclusion

Germany's success in overcoming the crisis is largely due to structural reasons which are difficult for other euro area member states to imitate. Germany's economy has traditionally focused strongly on international trade which is tightly linked to the entire global economy. As a consequence of this specific focus on exports, it is considerably easier for Germany not only to open itself up to western Europe and the US, but also to share in the above-average growth of global trade compared to global production. Consequently, Germany has benefited from its specialization model, particularly in the capital goods and automotive industries.

Germany responded to the challenge from developing economies, initially mainly in Asia and now increasingly in other parts of the world such as Latin America and Africa, by specializing in high-quality, knowledge-intensive products in order to meet the needs of these countries. By relocating production and exports<sup>27</sup> to countries with large growth markets and cheap production costs for less knowledge-intensive stages in the global value chain, companies in Germany have been able to secure those parts of added value that are compatible with Germany's high wage costs due to mixed calculations and global sourcing. Other countries that have not taken this route, or which have done so only hesitantly, are now losing entire economic sectors due to malinvestments. The resulting mass unemployment and falling incomes are exacerbated by the acute banking and sovereign debt crises. To date, there are no convincing ideas in the crisis countries, nor in the European Union as a whole, as to how to solve these problems.

<sup>23</sup> World Economic Forum, The Global Competitiveness Report 2011-2012 (Geneva: 2011).

<sup>24</sup> B. van Ark, M. O'Mahony and M.P. Timmer, »The Productivity Gap between Europe and the United States: Trends and Causes,« Journal of Economic Perspectives, vol. 22, no. 1 (2008): p. 25-44.

<sup>25</sup> A *balance sheet recession* is a recession without the usual fluctuating capacity utilization in the economy, but with a simultaneous banking crisis. R. Koo, »The world in balance sheet recession: causes, cure, and politics,« Real-World Economics Review, no. 58, (December 12, 2011): p.19-37.

<sup>26</sup> G. Dettmann, J. Möbert and C. Weistroffer, »Bilateral Current Account Rebalancing in the EMU – The Link between Germany and the Eurozone Peripheral Countries,« Intereconomics (2011): 257-264.

<sup>27</sup> H. Belitz, M. Gornig and A. Schiersch, »German R&D-Intensive Industries: Value Added and Productivity Have Recovered Considerably after the Crisis,« DIW Economic Bulletin 2 (2011): 6–10.

DIW Berlin—Deutsches Institut  
für Wirtschaftsforschung e.V.  
Mohrenstraße 58, 10117 Berlin  
T +49 30 897 89 -0  
F +49 30 897 89 -200

**Volume 3, No 2**  
1 February, 2013  
ISSN 2192-7219

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