



# Focus Germany

## Ice bucket challenge and structural investment gap

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### Authors

Bernhard Gräf  
+49 69 910-31738  
bernhard.graef@db.com

Jochen Möbert  
+49 69 910-31727  
jochen.moebert@db.com

Oliver Rakau  
+49 69 910-31875  
oliver.rakau@db.com

Stefan Schneider  
+49 69 910-31790  
stefan-b.schneider@db.com

### Editor

Stefan Schneider

Deutsche Bank AG  
Deutsche Bank Research  
Frankfurt am Main  
Germany  
E-mail: marketing.dbr@db.com  
Fax: +49 69 910-31877

[www.dbresearch.com](http://www.dbresearch.com)

DB Research Management  
Ralf Hoffmann

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German GDP only 1 ½% in 2014, considerable risks for 2015. We have scaled back our GDP forecast for 2014 from 1.8% to 1 ½%, as we now expect weaker growth in H2. This also reduces our forecast for 2015 from 2.0% to 1.8%. The risks that this still constitutes an overly optimistic forecast have increased significantly. The German investment cycle will likely be more subdued than expected due to the ongoing weakness of world trade and increasing geopolitical strains. Even the hitherto still robust private consumption is emitting its first warning signs.

**Is Germany facing an investment gap? Likely only in the public sector!** Germany has an investment gap of up to 3% of GDP that needs to be plugged as quickly as possible in order to increase the country's competitiveness and growth potential as well as give Europe an important growth boost – so goes a very common assertion. In our opinion, this assertion is untenable. We believe that using historical investment ratios or international comparisons as benchmarks makes little economic sense here on account of country-specific factors and over-investment elsewhere. The effects of investment-driven, higher German growth on Europe, and on the peripheral countries of the eurozone in particular, are minor. Moreover, with Germany's competitiveness probably increasing as a result, the medium-term adjustment pressures there would intensify further. While we do not see any significant investment gap in the private sector at present in view of the given economic policy environment, pent-up demand does exist in the public sector. We estimate that the extra investment needed to at least maintain or slightly expand the current infrastructure will run to EUR 4-7 bn per year. This is noticeably less than other analyses claim, but considerably higher than provided for by the government in its financial planning to date. Considering the introduction of the debt brake also at the Länder (federal state) level, however, it is imperative to clarify the funding issue. We believe additional debt financing would not be beneficial.

**Optimal German real estate portfolios.** City data shows that the efficient frontier of multi-asset portfolios improves if real estate investments are taken into account. The increasing prices in the last years made German real estate investments appear even more attractive. We show that secondary cities which are often not in the focus of investors can help to improve the efficient frontier of portfolios. Moreover, an investment mix in apartments, retail and office is regularly more efficient than residential-only or commercial-only investments. If stricter rent controls are implemented and apartment yields decline, the commercial market may be an attractive alternative for German portfolios.



## Focus Germany

### Economic forecasts

	Real GDP (% growth)			Consumer Prices* (% growth)			Current Account (% of GDP)			Fiscal Balance (% of GDP)		
	2013	2014F	2015F	2013	2014F	2015F	2013	2014F	2015F	2013	2014F	2015F
Euroland	-0.4	0.8	1.3	1.3	0.7	1.2	2.4	2.4	2.3	-3.1	-2.5	-2.1
Germany	0.1	1.5	1.8	1.5	1.1	1.6	6.8	7.2	6.8	0.0	0.2	0.0
France	0.4	0.5	1.2	1.0	0.9	1.0	-1.3	-1.1	-1.1	-4.3	-3.9	-3.6
Italy	-1.9	-0.1	1.0	1.3	0.5	1.1	1.0	1.6	2.0	-3.0	-3.0	-2.9
Spain	-1.2	1.3	1.9	1.5	0.2	1.0	0.8	0.5	0.5	-7.1	-5.7	-4.9
Netherlands	-0.8	0.4	1.7	2.6	0.5	1.1	10.4	11.1	10.9	-2.5	-2.9	-2.2
Belgium	0.2	1.2	1.5	1.2	0.8	1.3	-1.6	-1.0	-0.5	-2.6	-2.5	-2.4
Austria	0.3	1.4	1.8	2.1	1.6	1.6	2.7	3.4	3.6	-1.5	-2.7	-1.4
Finland	-1.2	-0.3	0.8	2.2	1.2	1.3	-1.1	-0.8	-0.5	-2.1	-2.5	-1.8
Greece	-3.9	-0.3	2.2	-0.9	-1.0	0.2	0.8	1.0	1.5	-12.7	-1.5	-0.2
Portugal	-1.4	1.0	1.5	0.4	0.0	0.9	0.6	1.0	1.0	-4.9	-4.1	-3.0
Ireland	0.2	1.8	2.3	0.5	0.4	1.1	6.6	6.5	7.0	-7.2	-4.7	-2.6
UK	1.7	3.1	2.5	2.6	1.6	1.8	-4.4	-3.7	-3.0	-5.8	-4.6	-3.4
Denmark	0.4	1.4	1.8	0.8	0.8	1.8	7.1	6.5	6.5	0.0	-1.5	-2.5
Norway	2.0	2.1	2.4	2.1	1.8	2.2	11.1	11.5	11.0	7.6	9.5	9.0
Sweden	1.6	2.4	2.8	0.0	0.1	1.6	6.5	6.3	6.0	-3.6	-1.5	-1.0
Switzerland	2.0	1.8	2.0	-0.2	0.0	0.4	16.0	12.5	12.0	0.2	0.0	0.2
Czech Republic	-0.9	2.3	2.6	1.4	0.6	1.8	-1.4	-1.5	-1.4	-1.4	-2.6	-2.5
Hungary	1.1	2.7	2.5	1.7	0.2	2.6	-0.8	1.8	1.8	-2.4	-2.9	-2.7
Poland	1.6	3.3	3.7	0.9	0.4	1.5	-1.3	-1.8	-2.0	-4.4	4.3	-3.1
United States	2.2	2.2	3.3	1.5	2.0	2.4	-2.4	-2.9	-3.0	-4.0	-2.8	-2.5
Japan	1.5	1.2	1.3	0.4	2.8	1.6	0.7	0.4	1.3	-9.1	-7.0	-5.9
World	3.0	3.4	4.1	3.3	3.5	3.6						

\*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

	2011					2012					2013				2014			
	2011	2012	2013	2014F	2015F	2011	2012	2013	2014F	2015F	Q1	Q2	Q3	Q4	Q1	Q2	Q3F	Q4F
Real GDP	3.6	0.4	0.1	1.5	1.8	-0.4	0.8	0.3	0.4	0.7	-0.2	0.4	0.3	0.4	0.7	-0.2	0.4	0.3
Private consumption	2.3	0.7	0.8	1.0	1.6	0.2	0.6	0.7	-0.8	0.8	0.1	0.5	0.4	0.4	0.8	0.1	0.5	0.4
Gov't expenditure	0.7	1.2	0.7	0.8	0.5	0.0	0.0	0.6	-0.1	0.4	0.1	0.2	0.2	0.2	0.4	0.1	0.2	0.2
Fixed investment	7.2	-0.7	-0.7	3.6	2.8	-2.5	2.2	0.8	1.1	2.9	-2.3	0.7	1.0	2.9	-2.3	0.7	1.0	1.0
Investment in M&E	5.8	-2.9	-2.7	4.4	4.2	-3.7	2.3	-0.5	2.1	2.1	-0.4	0.5	1.5	2.1	-0.4	0.5	1.5	1.5
Construction	8.4	0.6	-0.1	3.6	2.8	-2.8	3.0	1.8	0.7	4.1	-4.2	0.5	1.0	4.1	-4.2	0.5	1.0	1.0
Inventories, pp	0.1	-1.4	0.2	0.3	0.2	0.2	-0.1	0.0	0.2	-0.2	0.4	0.1	0.0	-0.2	0.4	0.1	0.0	0.0
Exports	8.0	2.8	1.6	3.6	6.4	0.7	1.4	0.7	1.7	0.0	0.9	1.1	1.2	0.0	0.9	1.1	1.2	1.2
Imports	7.2	0.0	3.1	4.7	7.2	1.2	1.3	1.7	0.7	0.5	1.6	1.4	1.8	0.5	1.6	1.4	1.8	1.8
Net exports, pp	0.7	1.3	-0.5	-0.2	0.1	-0.2	0.1	-0.4	0.5	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2
Consumer prices*	2.1	2.0	1.5	1.1	1.6	1.5	1.5	1.6	1.3	1.2	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.2
Unemployment rate, %	7.1	6.8	6.9	6.7	6.7	6.9	6.9	6.8	6.9	6.8	6.7	6.7	6.6	6.8	6.7	6.7	6.6	6.6
Industrial production	7.4	-0.4	0.1	2.7	3.0													
Budget balance, % GDP	-0.8	0.1	0.0	0.2	0.0													
Public debt, % GDP	80.0	81.0	78.4	73.5	70.6													
Balance on current account, % GDP	6.1	7.1	6.8	7.2	6.8													
Balance on current account, EUR bn	164	196	192	209	203													

\*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



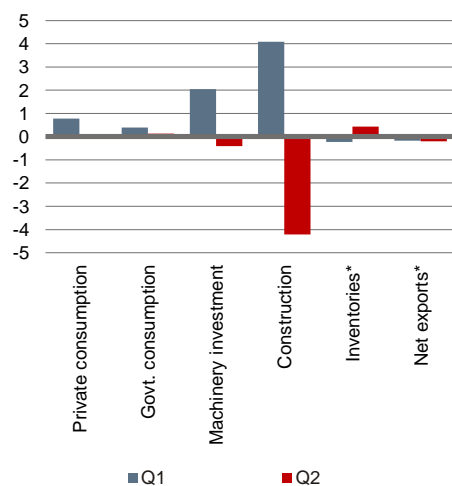
## German GDP only 1 ½% in 2014, considerable risks for 2015

- We have scaled back our GDP forecast for 2014 from 1.8% to 1 ½%, as we now expect weaker growth in H2. This also reduces our forecast for 2015 from 2.0% to 1.8%. The risks that this still constitutes an overly optimistic forecast have increased significantly.
- The German investment cycle will likely be more subdued than expected due to the ongoing weakness of world trade and increasing geopolitical strains. Even the hitherto still robust private consumption is emitting its first warning signs.

Economic growth H1 2014

1

Real GDP by components, % qoq, pp



\*) Growth contribution, pp

Source: Federal Statistical Office

How quickly things can change. A short time ago Germans were celebrating their seemingly “bulletproof” economy and this made it the envy of its European neighbours. The news that GDP had declined by 0.2% in Q2 started a special “ice bucket challenge”, which has taken the form of several cold showers.

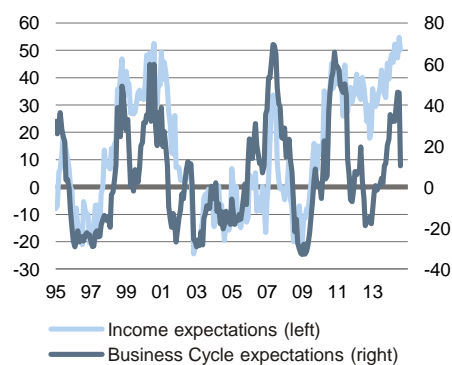
While we had looked for a significant slowdown in GDP growth in Q2 on account of a rebound from the weather-related outperformance in Q1, this effect can only explain 0.3-0.4 of a percentage point (pp) of the Q2 downturn. After rising 4.1% in Q1 construction investment (share of GDP 9.9%) fell by 4.2% in Q2. Weather effects are probably only of minor significance for investment in machinery and equipment. This means that the 0.4% decline in Q2, following increases of 2.1% in both Q4 and Q1, could be the first manifestation of the weakening investment cycle. After posting a strong increase of 0.8% in Q1 a normalisation in private consumption was to be expected. The minimal rise of 0.1% backed up our scepticism of scenarios that see private consumption as the “saviour” of the economy.

### Q3 bounce back from the rebound

True, Q3 GDP is likely to be higher by the stated 0.3-0.4 pp for purely statistical reasons, as the Q2 “rebound” falls out of the picture. It also fits that the composite PMI overcame much of its May/June slump in July, too. It fell again, however, in August and at 55.3 (Jul./Aug.) is now only at its Q2 average level. An even more substantial chill came with the renewed sharp decline in the ifo Index in August – the fourth in a row. In the process the downtrend in expectations has continually picked up pace. This has been driven by export expectations, which fell below their long-term average for the first time in 12 months in August.

GfK: Income & Business Cycle expectations

2



Source: Thomson Reuters

### Consumer confidence no longer immune

Even German consumers are no longer remaining unaffected. Admittedly, the GfK consumer confidence forecast for September has fallen by only 0.3 of a point, while the figure recorded for August was unchanged at 8.9 (its highest level since 2006), but economic expectations and forecasts concerning future labour market developments have cooled dramatically. The decline in economic expectations – the sharpest in the last 20 years – was even more severe than the slump in August 2012, when in the face of the escalating European debt crisis ECB president Mario Draghi felt compelled to issue his promise to do “whatever it takes” to save the euro.

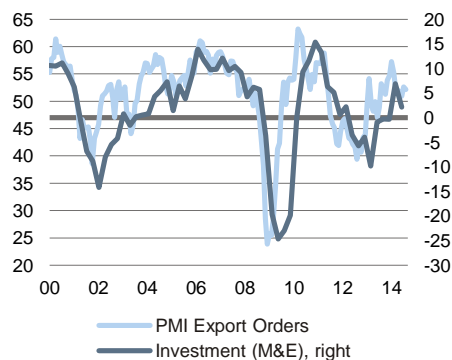


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Investment and export demand

3

Index (left), % yoy (right)



Source: Thomson Reuters

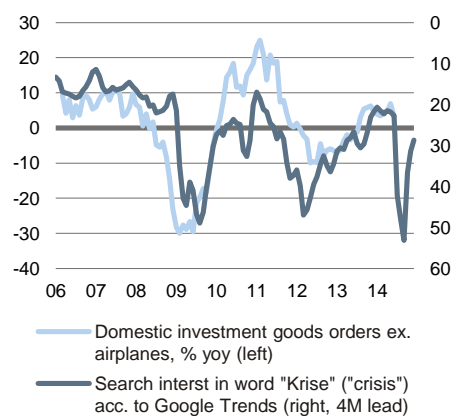
No rapid end to the Ukraine crisis

We note the slowdown in the economy is therefore not a result of weather-related yo-yo effects linked to seasonal adjustments. What plays a bigger role is that world trade, a key driver of the German economy, has persistently moved sideways so far in 2014. The difficulties are compounded by the Ukraine crisis. Even though Russia's share of German exports is now down to nearly 3%, shipments there had already fallen by 15% yoy by May. Given the prospect of a further round of sanctions following the steps taken in early August the declines will probably become even more pronounced in the coming months, so the full year could ultimately see a slump of 20-25% which, even following the deduction of fewer imported intermediates, is likely to hurt net exports and thus GDP to the tune of 0.25 pp. Moreover, the tensions and the undoubtedly increasing uncertainties over the next few months in view of potential retaliatory measures by Russia are set to cloud the investment climate in Germany. Game theory suggests that it would come as a great surprise if President Putin were to alter his strategy, if developments increase his potential to issue credible threats.

Crisis (fears) and investment goods

4

Germany, 3M moving averages



Sources: Federal Statistical Office, Deutsche Bank Research, Google

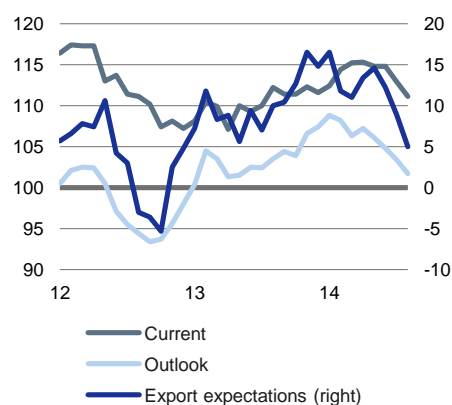
Capital spending reflects poorer investment climate

The 4.6% drop in domestic capital goods orders (May/June versus March/April) points in this direction – even though one-off effects may have overstated the impact. At any rate, the significant decline in the expectations component of the ifo business climate allows little hope of a near-term recovery. The fact that political crises leave their mark on companies' investment activity is impressively documented by the correlation between capital goods orders and Google searches containing the term "crisis". Companies' current reluctance to invest is not about to change much just because the economy minister is now focusing on that issue. Our models do not show any gap in corporate investment activity in Germany. Rather, they reflect the development of the key parameters of the investment environment (see "Is Germany facing an investment gap? Likely only in the public sector" article in this issue). So we find it a little ironic that politicians who for years have been damping companies' profit expectations by chipping away at investment conditions (initially via energy policy and then labour market policy) are now scratching their heads in bewilderment when profit-oriented companies say they are reconsidering their investment plans. Of course, the geopolitical uncertainties and still sluggish world trade do not help either.

ifo: Weakness across the board

5

Index



Source: ifo

2014 GDP call down to 1 ½%

True, we continue to expect the global economy to stage a recovery – not least because the data coming out of the US have finally improved. However, the factors discussed here are poised to curb Germany's growth dynamics in H2. We have therefore reduced our GDP growth forecast for both Q3 and Q4 by 0.1 of a percentage point, to 0.4% and 0.3% respectively. These rates are in fact slightly lower than those that can be derived from the ifo Index and PMI levels, albeit these correlations had painted an overly optimistic picture of late. All in all, we now expect GDP to grow at an annual average rate of 1 ½% in 2014, which is 0.3 pp less than one month ago.



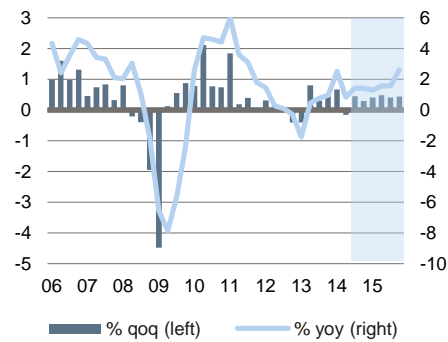
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Economic growth

6

Risks for 2015 up sharply

Real GDP



Sources: Federal Statistical Office, DB Research

The weaker growth in H2 2014 also reduces our GDP growth forecast for 2015 by 0.2 pp, to 1.8%. This results from the prospect of a lower growth overhang. Note, though, that the underlying – pretty robust – average quarterly growth rates of 0.4% are predicated not only on a resurgence in world trade, but also on a de-escalation of the Ukraine conflict. If these factors fail to materialise, the downturn in sentiment would not only have a more sustained impact on capital spending, but also result in consumers adjusting their spending habits.

Stefan Schneider (+49 69 910-31790, stefan-b.schneider@db.com)



## Is Germany facing an investment gap? Likely only in the public sector!

- Germany has an investment gap of up to 3% of GDP that needs to be plugged as quickly as possible in order to increase the country's competitiveness and growth potential as well as give Europe an important growth boost – so goes a very common assertion. In our opinion, this assertion is untenable.
- We believe that using historical investment ratios or international comparisons as benchmarks makes little economic sense here on account of country-specific factors and over-investment elsewhere.
- The effects of investment-driven, higher German growth on Europe, and on the peripheral countries of the eurozone in particular, are minor. Moreover, with Germany's competitiveness probably increasing as a result, the medium-term adjustment pressures there would intensify further.
- While we do not see any significant investment gap in the private sector at present in view of the given economic policy environment, pent-up demand does exist in the public sector.
- We estimate that the extra investment needed to at least maintain or slightly expand the current infrastructure will run to EUR 4-7 bn per year. This is noticeably less than other analyses claim, but considerably higher than provided for by the government in its financial planning to date.
- Considering the introduction of the debt brake also at the Länder (federal state) level, however, it is imperative to clarify the funding issue. We believe debt financing would not be beneficial.

Germany does not invest enough – so goes a very common assertion. Germany's investment ratio trended downward for a relatively long time and is low by international standards. This has allegedly caused an investment gap of up to 3% of gross domestic product (GDP), so there have been calls for it to be plugged as quickly as possible and thus increase Germany's competitiveness and growth potential. It is claimed that this would also give the European economy a boost.<sup>1</sup>

Certainly, there is room for improvement. In our estimation, however, the above assertion is untenable. True, total gross fixed capital formation is lower in relation to GDP in Germany than in comparable developed economies, which at first glance does suggest an investment gap in Germany. Nevertheless, this does not apply to several subgroups of fixed capital formation, such as private investment in machinery and equipment, which are of key importance to economic growth. These lie at roughly the same level in relation to GDP as in the United States, and are in fact slightly higher than the average in the rest of the eurozone. Furthermore, when comparing investment in construction it must be noted that many countries saw a great deal of over-investment especially in the residential building segment in recent years. This was not the case in Germany. By international standards, Germany is a laggard only in the area of public investment. However, this gap would decline markedly with the inclusion

<sup>1</sup> See Bach, S. et al. (2013). More Growth through Higher Investment. DIW Economic Bulletin 8 / 2013. Baldi, G. et al. (2014). Weak Investment Dampens Europe's Growth. DIW Economic Bulletin 7 / 2014. The IMF followed a similar line of argumentation in its recent Germany report, in which it called for additional debt financing of public investment to the tune of EUR 14 bn per year. See IMF (2014). Germany. Staff Report for the 2014 Article IV Consultation. The DIHK (Association of German Chambers of Commerce and Industry) also speaks of sluggish investment in Germany. See DIHK (2014). Investitionsschwäche in Deutschland. DIHK-Schlaglicht Wirtschaftspolitik. Summer 2014.



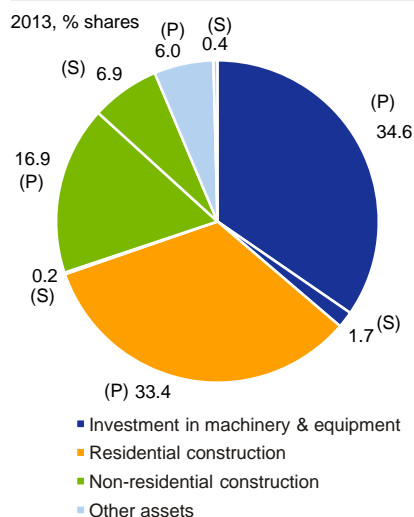
of expenditure on research and development (R&D) in capital formation as part of the major revision of the national accounts in September.

All in all, we believe it makes little sense to apply the method of ranking investment performance of recent years via historical or international comparisons and, on this basis, seeking to derive an "optimal" investment ratio. For one thing, there is no theoretical foundation for an optimal investment level. For another, investment activity has developed along very different lines internationally. This is attributable to country-specific responses to external shocks, such as the oil price crises in the 1970s, and to country-specific shocks, including German reunification at the start of the 1990s, differences in economic structure and resources as well as contrasting demographic developments.

In our estimation, the argumentation that investment-driven, higher German growth would give the eurozone an important boost also goes too far. According to our calculations, the demand effects of higher investment in Germany on the other eurozone countries, and on the peripheral countries in particular, are minor. In our opinion, these minor effects do not suffice to warrant additional investment especially in the private sector. Investment projects ought to make economic sense, and the need for them should be derived from the prevailing economic environment in Germany and from global demand. Moreover, with Germany's competitiveness increasing on higher investment, the adjustment pressures in the peripheral countries would intensify further.

Against this backdrop we think there is little sense in pursuing a general expansion of private-sector investment. Higher investment would only be useful and appropriate in the public sector. We see a need not only for investment in infrastructure to at least maintain existing facilities but also, in view of the demographic challenges, especially in the area of research and development. We estimate that the required extra funds would run to EUR 4-7 bn per year, and thus be noticeably less than other analyses claim, but considerably higher than provided for by the government.

Germany: Gross fixed capital formation 1



(P) = Private investment  
(S) = State investment

Source: Federal Statistical Office

### The current situation

In 2013, gross fixed capital formation in Germany totalled EUR 471.5 bn, equivalent to 17.2% of GDP<sup>2</sup>. Of this total, 91% was attributable to the private sector and roughly 9% to the public sector.

Gross fixed capital formation comprises:

- Investment in machinery and equipment (over 36%),
- Investment in construction (about 57.5%), and
- Other assets (roughly 6.5%).

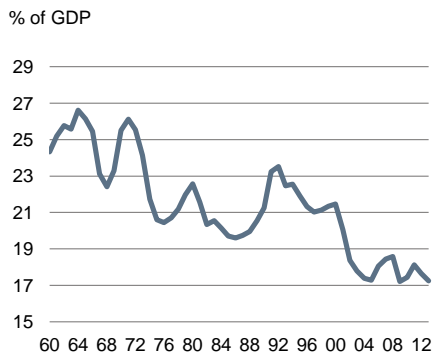
Investment in machinery & equipment (totalling EUR 171 bn) includes machinery and equipment (70%) as well as vehicles (30%); the private sector accounts for 95% of the total. The biggest component of capital formation – investment in construction – breaks down into residential (nearly 60%) and non-residential (roughly 40%) construction. While the public sector accounts for merely 0.5% of investment in residential construction, it is responsible for close to 30% of non-residential construction (building construction and civil engineering). Investment in other assets includes expenditures on livestock and crops as well as intangible assets such as investment in research, development and education,

<sup>2</sup> The current analysis is still based on the European System of Accounts (ESA) 1995, which is being replaced by the updated ESA 2010 when the general revision occurs in September 2014. The most important quantitative change is the new treatment of expenditure on the military and research and development as capital formation, which were previously regarded as "intermediate consumption"; this results in higher investment ratios in all countries.



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Germany: Gross fixed capital formation 2



Source: Federal Statistical Office

Long-term decline in investment ratio stopped around 2000

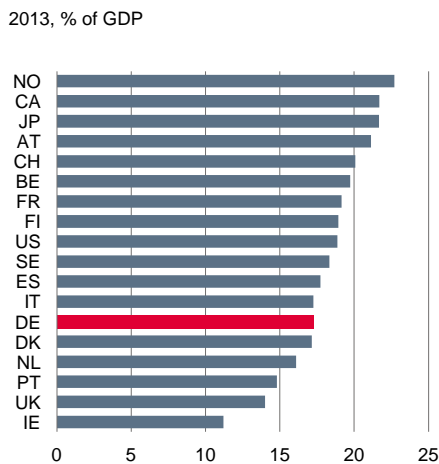
As a percentage of GDP, gross fixed capital formation had been trending down since the 1960s; however, this trend appears to have stopped around 2000. At the beginning of the 1960s the investment ratio had still exceeded 25%, and had fallen to around 20% by the mid-1980s. During German reunification it temporarily resumed its climb to over 23% before returning to a downtrend until the start of the 2000s. Since 2000 it has hovered at just over 17%, fluctuating slightly.

Given the extremely high investment demand of the post-war period, the investment ratio at the time was correspondingly high, so the decline observed from the 1960s until the mid-1980s comes as no surprise. Rather, it marked a return to normal, especially since at the same time the growth dynamics of demand had eased appreciably. While real private consumption still expanded by an average of 5 ½% in the early 1960s, the increase was down to only around 1 ¾% p.a. by the mid-1980s. The higher ratio towards the end of the 1980s can be explained by the effects of German reunification, and the renewed decline since the mid-1990s is largely due to the correction of the construction boom following reunification.

The investment ratio declined in other industrial countries too, although the extent varied considerably and in some cases there were pronounced fluctuations. Currently, Germany's ratio of 17.2% roughly matches the level in Spain and Italy, and lags the ratios in the US and France by 1 ½ percentage points (pp) and 2 pp of GDP, respectively. So does this mean there really is a noticeable investment gap in Germany, which according to some research institutes and trade associations runs to as much as 3% of GDP?

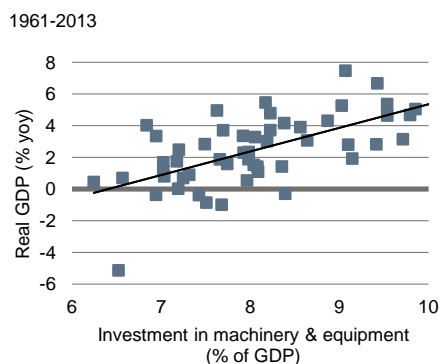
While these numbers suggest this to be true for gross fixed capital formation as a whole, this is a different kettle of fish for individual subgroups, such as private investment in machinery and equipment and in construction. Also, investment ratios should be considered in connection with their effects. For this reason, we shall discuss our assessment of the alleged investment gap in the following on the basis of eight assertions.

Gross fixed capital formation 3



Source: European Commission (AMECO)

Germany: Investment & GDP growth 4



Source: European Commission (AMECO)

Assertion 1: Investments boost growth (potential)

Yes. Investments do increase economic growth. As an expenditure component of GDP, they initially have a direct demand effect. Furthermore, in the medium term they also generate positive supply effects since investments are the sole GDP component that secures future production potential (via replacement investments) and/or can raise it in the medium to long term (via positive net investments). At first glance, a clear, positive correlation emerges between total investment and GDP growth as well as between growth per capita and per employee. The correlation coefficient between investment in machinery and equipment (as a share of GDP) and the growth of real GDP comes to 0.63 for the period from 1961 to 2013, and for the correlation between investment in machinery and equipment and growth of real GDP per employee to 0.57.

While empirical studies confirm this correlation, they do call into question the assumed causal link for public investment in particular. Whether public investment actually fosters growth is not clear. While investment in public infrastructure often represents intermediate inputs for private investment activity, analyses do not rule out a reverse causal link, i.e. that economic growth may





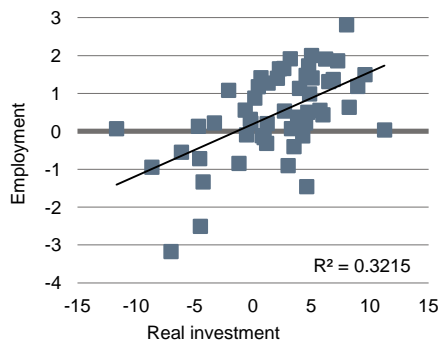
shape the development of public investment.<sup>3</sup> If there is robust GDP growth, the public coffers are filled abundantly, which makes additional investment possible.

### Growth potential not driven by investment alone

Germany: Investment & employment

5

1960-2013, % yoy



Source: EU Commission (AMECO)

Investment is only one of several factors which determine a country's growth potential. An economy's potential output is understood to mean the production level that can be achieved with the available production factors of labour and capital under normal capacity utilisation and given technological progress. Usually, an expansion of the capital stock goes hand in hand with an increase in employment. Accordingly, with higher investment there must also be labour available. Besides this complementary relationship between production factors it is also possible to have a substitution of labour for capital or capital for labour. In the first half of the 2000s, Germany saw the introduction of a series of labour market reforms (commonly named after the head of the respective expert commission, Peter Hartz) which resulted in a tangibly higher labour supply. Combined with a measured wage policy geared to shoring up employment, these led to moderate wage cost increases and thus to a substitution of labour for capital. In comparison with other countries in which wages had climbed much more steeply, this certainly helped to create differing investment patterns and resulted in correspondingly differing investment ratios.

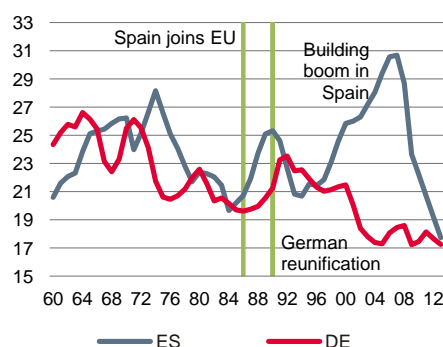
From a strictly statistical standpoint, investments that exceed write-downs for depreciation lead to the growth of the capital stock. This boosts growth potential. In Germany, on the basis of the Solow growth accounting model, a 1% increase in the capital stock would ultimately increase growth by 0.2 of a percentage point. Of course, this correlation is based on historical developments. Not least because investments are known to obey the law of diminishing marginal utility – i.e. each additional unit of capital contributes slightly less additional utility than the preceding one – it is not possible to simply extrapolate this historical correlation.

### The higher – the better? Or how high actually is the optimal investment ratio?

Gross fixed capital formation

6

% of GDP



Source: European Commission (AMECO)

If the conclusion is affirmed that higher investment implies higher growth potential, this raises the issue of efficiency and thus of the optimal size of the investment ratio in a national economy. However, the prevailing growth theories hardly provide any indication of this.

Using the investment ratios of other countries or else EU or OECD averages as benchmarks is just as little help, since the question of whether these are at their optimum cannot be answered. Such comparisons may be misleading because of country-specific developments, such as the overshooting in Spain's residential construction segment. Moreover, substantial structural differences exist even among the major developed economies in terms of product range and production structure, which in turn are shaped by, inter alia, the demographic development and qualifications of the labour force. Ultimately, differing investment ratios emerge as a result. Furthermore, the political environment and/or the changes in the same (such as the "Energiewende", or Germany's transition to renewable sources of energy) also play a key role. Moreover, the differing starting levels, in Germany and the US after the Second World War for instance, were pivotal for investment growth and thus for the size of the investment ratio. The same holds for catch-up processes, such as those witnessed in Spain and Portugal, for example, following their accession to the European Union in the mid-1980s.

<sup>3</sup> See German Council of Economic Experts (2013). Against a backward-looking economic policy. Annual Economic Report 2013/14.

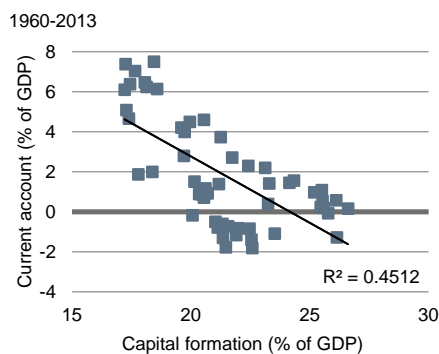


Using a country's own historical performance or historical averages as benchmarks is also potentially seriously misleading on account of extraordinary developments, such as Germany's reunification and Energiewende, and therefore provides little substance for assessing the more recent past.

Just as important as the issue of optimal investment level is the issue of investment efficiency. Therefore, the motto should not simply be "the higher the ratio, the better". True, this argument applies to all investments. But especially with public investments there is a host of misguided investments that can be cited.<sup>4</sup> One prominent example is the new airport in Berlin. According to official estimates, it will probably cost close to EUR 5.5 bn and thus EUR 3.7 bn more than budgeted back in 2004, though with a higher capacity than originally envisioned. Nonetheless, botched investments are often not just a case of a misconceived project per se, but rather a matter of poor execution that drives up the costs.

Germany: Investment & current account

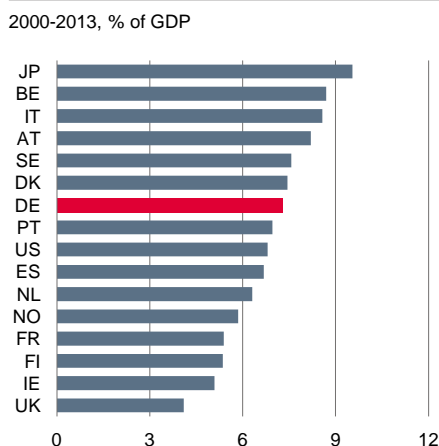
7



For investments in general, the degree of their efficiency could be assessed not only by looking at the GDP growth achieved – Germany scores well on this count by international standards, which we will discuss further in the following – but also by looking at a country's competitiveness. Germany's investment ratio, which is criticised as being too low, goes hand in hand with high competitiveness, which is reflected in a current account surplus at last reading of 6.8% of GDP. This indicates that investments in Germany are very efficient indeed. But here, too, there could be a reverse causal link. The high current account surpluses entail correspondingly high capital exports. Equivalent volumes of domestic savings flow abroad, so there are less funds available for investment at home.

Investment in machinery & equipment

8



### Assertion 2: Higher growth also benefits the countries on the periphery

Barely. Stronger German growth has minor effects on the peripheral countries of the eurozone in particular.<sup>5</sup> Our calculations show that one additional percentage point of German GDP growth would – by inducing higher German imports and travel expenditures – improve the current accounts of the GIPS countries (Greece, Italy, Portugal and Spain) by EUR 3 bn at best, or 0.1% of their GDP. The growth stimuli generated in the region would be correspondingly small.<sup>6</sup> Therefore, temporarily higher exports to Germany cannot take the place of necessary fundamental reforms in the peripheral countries. The most these exports can do is minimally cushion the reforms' short-term negative impact. These minor effects do not suffice, in our opinion, to warrant additional investments in the private sector in particular, which in any case cannot be forced on companies.

Moreover, with Germany's competitiveness increasing on higher investment, the adjustment pressures in the peripheral countries would probably intensify further. Indeed, when Germany went from being the "sick man of Europe" to an economic role model back in the 2000s, many commentators made out

<sup>4</sup> See Bund der Steuerzahler Deutschlands e.V. (2013). Die öffentliche Verschwendung 2013. 41. Schwarzbuch des Bundes der Steuerzahler.

<sup>5</sup> See Gräf, B., Peters, H. (2013). Germany: Strong enough to rescue Europe? Deutsche Bank Research. Focus Germany. February 18, 2013.

<sup>6</sup> Analyses performed by the Bundesbank and the European Commission also only find effects of this magnitude. See European Commission (2012). Current Account Surpluses in the EU. European Economy 9/2012 and Deutsche Bundesbank (2011). Germany's external position against the background of increasing economic policy surveillance. Monthly Report, October 2011. While the IMF comes to higher readings in its simulations (up to 0.4% at the peak), these are mainly thanks to (obscure) monetary effects. Without these effects, the IMF findings also come in at around 0.1%. See IMF (2014). Germany. Staff Report for the 2014 Article IV Consultation and IMF (2012). Germany. Staff Report for the 2012 Article IV Consultation.



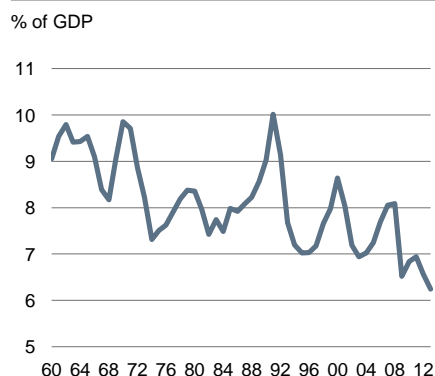
Germany's higher competitiveness to be the real cause of the peripheral countries' economic problems.

### Assertion 3: Companies do not invest enough

No. In its analysis based on a comparison of investment ratios, the DIHK (Association of German Chambers of Commerce and Industry) – like the DIW (German Institute for Economic Research) – determines an investment gap totalling EUR 80 bn, or 3% of GDP, with about EUR 60 bn of this attributable to the private sector. This equals 14% of private-sector investment. We believe that such a calculation of Germany's investment gap is way over the top. In our estimation, there is no significant pent-up demand for investment in the private sector – in the given economic policy environment.

Germany: Investment in machinery & equipment

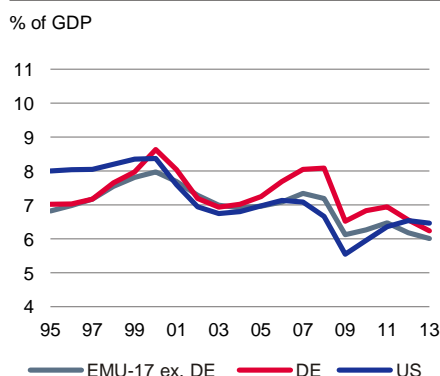
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Source: Federal Statistical Office

Investment in machinery & equipment in international comparison

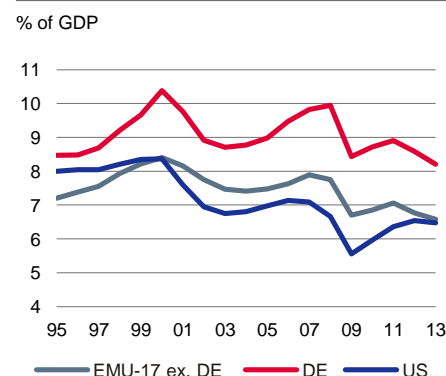
10



Source: European Commission (AMECO)

Investment in machinery & equipment incl. R&D expenditure

11



Sources: European Commission (AMECO), OECD

As discussed above, we do not consider a comparison of investment ratios to be the right approach. However, even if one accepts this argument, it emerges that Germany does not invest too little in machinery and equipment. Over the past few decades, Germany's gross share of investment in machinery and equipment in GDP has fallen more or less in tandem with the gross investment ratio, but currently, at 6.2%, it roughly matches the level in the US (6.5%). Moreover, it is considerably higher than the ratios in France and Portugal (roughly 5%) and in the United Kingdom (3%). Among the major industrial countries, noticeably higher investment ratios are only to be found in Japan and Italy. However, write-downs on capital stock are disproportionately high in both of these countries, so since 2000 the net investment ratios have been significantly lower in Japan and only slightly higher in Italy than in Germany. A somewhat longer-term analysis does not reveal any underinvestment in the private sector either. The average for the 2000 to 2013 period shows the same picture as at present. Including corporate R&D expenditures, which with the upcoming revision will no longer be considered intermediate consumption but rather capital formation and which in Germany are higher than in the rest of the eurozone, the ratio is in fact a good 1 ¼ pp higher than the ratios in the eurozone and the US.

Given the higher share of industry in Germany it initially comes as a surprise that the investment ratio in Germany is not higher than in the US or other countries. Industry's share (excluding construction) in Germany was over 25% in 2013 and thus clearly exceeded the share in the US (over 16%) and the eurozone average (over 19%). France and the UK only report shares of not quite 13% and just over 14%, while Spain and Italy report 17.5% and 18%, respectively.

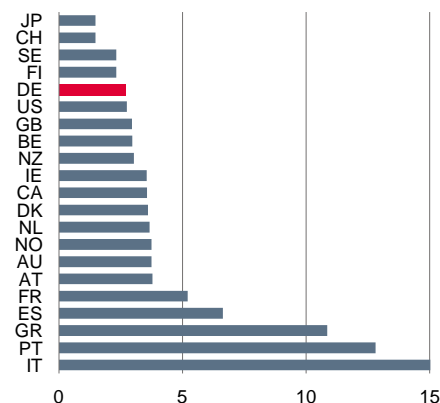


## Focus Germany

### Investment efficiency

12

Average net investment ratio divided by average GDP growth, 2000-2013 (ICOR Index\*)



\*The lower the index, the more efficient the investment

Sources: European Commission (AMECO), Deutsche Bank Research

### High efficiency of German investment

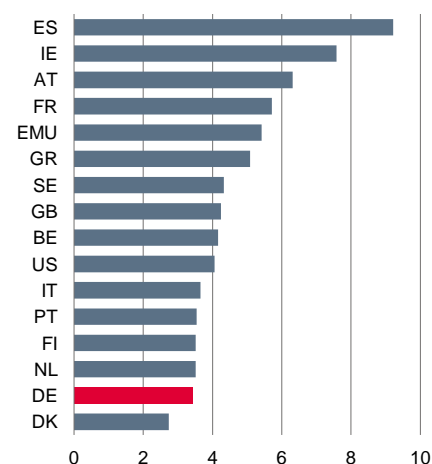
This can be explained by the fact that industry even in Germany only accounts for around 25% of total investment in machinery and equipment. In other countries, though, other sectors boast larger shares. For example, at 2.8%, France's share of agriculture in gross value added is over three-and-a-half times as high as Germany's, and it reports higher investment in the agricultural sector accordingly. And as regards the efficiency of investment, Germany ranks near the top of the international table for the 2000 to 2013 period as measured by the ICOR Index. The ICOR Index (Incremental Capital-Output Ratio) sets investment activity, in this case net investment exceeding replacement investment in relation to GDP, against the economic growth achieved. The lower this index reading is, the more efficient the investment. This comparison shows that by international standards Germany has achieved high GDP growth with its investments. In this context, the quality of the labour supply probably plays an important role as well.

From 2000 to 2013, Germany had one of the lowest net investment ratios in the private sector internationally at an average 3.4% of GDP, being significantly outstripped only by the US (4.1%) and France in particular (5.7%). The high efficiency of German investment compensated for this difference, though, so the GDP growth achieved in Germany during this period is roughly on a par with that in the US and noticeably higher than in France.

### Net fixed capital formation

13

Private sector, 2000-2013, % of GDP



Source: European Commission (AMECO)

### Investment performance of the past decade in keeping with the general environment

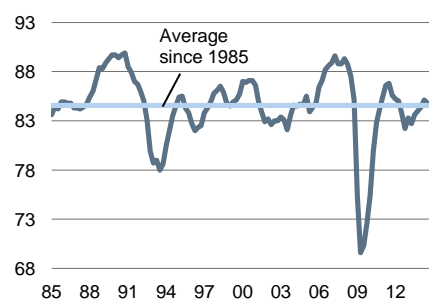
Companies make investment decisions on the basis of their assessment of future demand and – taking account of the economic policy setting – of the possibility of generating profits on this demand. Currently, Germany's production capacities are large enough to meet demand. In industry, capacity utilisation is minimally higher than its long-term average at present and still almost 5 pp shy of its past highs.

We believe that companies – in the face of all uncertainty – are best able to assess their future demand. We have developed a model to simulate the investment function that is based on GDP growth, profit growth, capacity utilisation and real interest rates, and from 2000 to 2013 the model does not show any major deviation from the actual investment trend.<sup>7</sup> Against this background, the notion of pronounced sluggishness of investment activity and/or company restraint can be rejected. The growth of investment in machinery and equipment matches the development expected on account of the fundamental factors. Consequently, it reflects the economic environment and, in particular, the economic-policy framework which – considering the longer-term challenges especially in respect of the demographic shift – ought to be improved.

### Germany: Capacity utilisation

14

Manufacturing, %



Source: ifo

According to the findings of a DIHK survey, German companies mainly cite taxes and levies, the flexibility of the labour and collective bargaining laws as well as energy costs as the primary potential obstacles to investment.<sup>8</sup> In view of the nationwide minimum wage and very high energy costs by international standards – partly resulting from Germany's Energiewende – the two latter obstacles are understandable. The DIHK survey found that 80% of the companies said they would invest more if taxes and levies were lower. However, there are grounds for doubting whether the suggested importance of taxes and

<sup>7</sup> See Gräf, B. (2012). Investment in machinery and equipment: Cyclical decline. Deutsche Bank Research. Focus Germany. December 3, 2012.

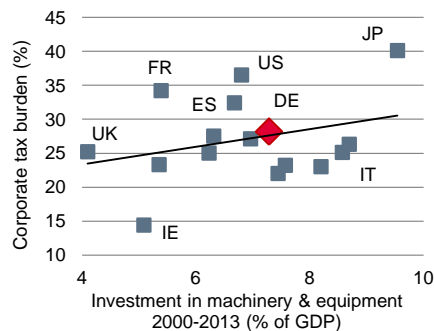
<sup>8</sup> See DIHK (2014). Investitionsschwäche in Deutschland. DIHK-Schlaglicht Wirtschaftspolitik. Summer 2014.



## Focus Germany

### Corporate tax burden and Investment in machinery & equipment

15

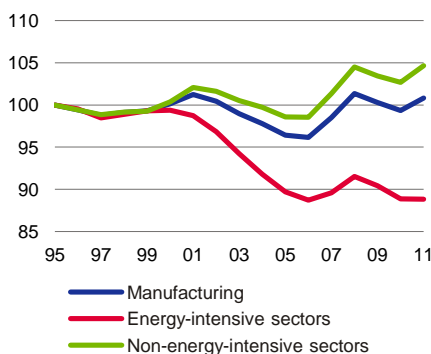


Sources: European Commission (AMECO), BDI

### Germany: Net fixed assets

16

Net fixed assets, 1995=100



Source: Federal Statistical Office

levies is actually valid. While Germany occupies an upper midtable ranking by international standards with regard to the corporate tax burden, countries with a lower burden<sup>9</sup>, such as the United Kingdom, Ireland, the Netherlands, Finland, Denmark and Sweden, reported investment ratios similar to or even considerably lower than those in Germany over the past 15 years on average. This indicates that when investment decisions are being made the tax burden is probably not the most important factor.

### The Energiewende curbs investment activity

As discussed earlier, investments are decisively influenced by the fundamental conditions in an economy. And Germany's politicians have had a negative impact on business conditions not least with the (implementation of the) Energiewende – the Renewable Energy Sources Act itself came into force in April 2000.<sup>10</sup> To illustrate: the price of electricity for industrial users in Germany now exceeds the EU level by over 25%. Germany's cost disadvantage vis-à-vis the US is even substantially worse. In keeping with the government (mis-)incentives, the weak and/or declining investment trend among energy-intensive manufacturing companies does not come as a surprise. Companies from energy-intensive sectors have been holding back on investments in Germany for several years now. They only invested more in their facilities than they wrote off on them in a mere two years of the last 17. As a result, the energy-intensive industrial sectors reported an over 11% decrease in net fixed assets between 1995 and 2011, especially in the years after 2000. By contrast, in the other sectors there was a nearly 5% increase. The energy-intensive sectors accounted for 16% of gross value added in manufacturing in 2011.

### Investment ratio & demographic challenge: No clear connection

At first glance, it looks as if the investment ratio is likely to increase in the medium to longer term as a consequence of the increasing scarcity of labour due to demographic trends and the resulting shift in the relative prices of labour and capital. As the baby boom generation is going to start staging its exit from the labour market as of 2020, the number of working-age persons is set to decline more than twice as fast up to 2060 as the population as a whole, which will shrink by around 20% once the currently extremely strong immigration flows return to normal. The decline in the potential labour force will lead to an increase in capital intensity, i.e. capital input in relation to labour input. The demographic shift will probably also induce a sectoral shift towards sectors geared to domestic demand. This primarily applies to the service sectors of health and long-term care, where it is difficult to substitute capital for labour or else only possible at a high cost.

From a demographic standpoint, it is probably realistic to expect higher investments in general. Whether these will be made at home or abroad, though, is up for debate. Multinational companies, in particular, will probably increasingly roll out new production facilities in the countries where local demand and the potential labour force are growing and/or wage and energy costs are lower. Small and medium-sized enterprises may conceivably also seek to internationalise their production chains, and in many cases have already made great strides. Nonetheless, as discussed in Assertion 4, this does not necessarily have to be at the expense of domestic growth.

<sup>9</sup> See BDI (2013). Die Steuerbelastung der Unternehmen in Deutschland. Fakten für die politische Diskussion 2013.

<sup>10</sup> See Heymann, Eric (2014). Carbon leakage: A barely perceptible process. Deutsche Bank Research. Current Issues. January 23, 2014.

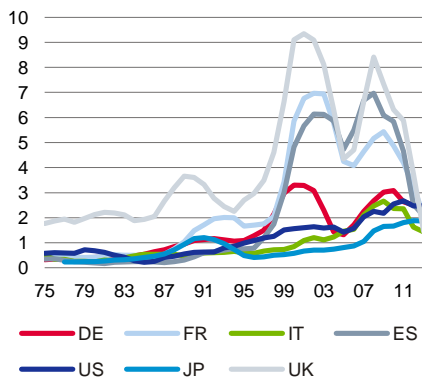


Focus Germany

Foreign direct investment

17

Annual FDI, moving 5Y average, % of GDP

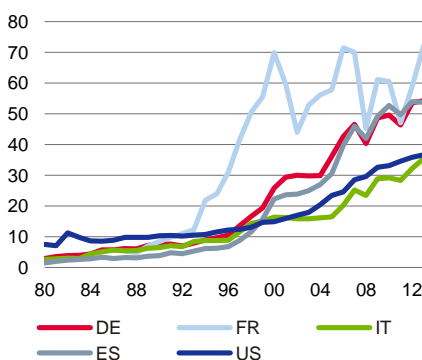


Source: IMF

Foreign direct investment stock

18

% of GDP

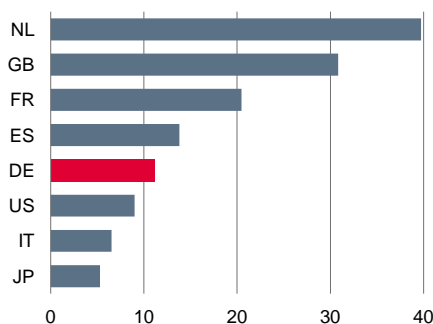


Source: IMF

Direct investment

19

As % of private investment, 1985-2013



Sources: European Commission, IMF, Global Insight

Assertion 4: German industry is ramping up investment abroad instead of at home

No. The assertion that the investment sluggishness in Germany was caused by German companies intensifying their investment activity abroad instead of at home is not true, in our opinion. Foreign direct investment (FDI) has fluctuated substantially over time. From 1995 to 2013, German FDI increased in relation to GDP at a pace of 2.5% p.a. While this was a slightly faster rate than seen in the US (1.9%), it was still much slower than in the UK (5.8%), Spain (4.4%) or France (4.2%). Among the major industrial economies, Italy (1.5%) and Japan (1.2%) reported noticeably slower FDI growth than Germany.

True, the annual FDI flows might distort the picture owing to differing starting levels. However, the trend and above all the level of FDI stocks do not lead to any other assessment for Germany.

The assertion that German FDI is a substitute for domestic investment is virtually untenable. On the contrary: FDI provided the basis for the success story of the German economy, which went particularly far in internationalising its value added chain.<sup>11</sup> So FDI has also helped to shore up investment in the domestic economy. This can partly be seen by the fact that the share of investment in machinery and equipment in relation to GDP in Germany compares with international peer levels. The DIHK surveys, too, show that companies which invest abroad also want to plough more money into investments at home and increase their staff levels.

The picture of direct investment as a percentage of total private-sector investment in Germany does not indicate that FDI is a substitute for domestic investment either. From 1985 to 2013, as in the US, this share averaged roughly 10%, and was thus considerably lower than in France (about 20%) and the UK (30% or so).

German companies have held their own in international competition and have scarcely lost any market shares in world trade despite the aspirations of the emerging economies – China in particular. The fact that German companies have increasingly internationalised their value chains has played a major role in this context. Whereas the foreign value added share of German exports (19%) was just below the global average in the mid-1990s, the share was slightly higher than the average in 2009 at 27%.

By transferring parts of the production chain – mostly simple and standardised procedures – to countries with lower wage levels, German firms boosted their productivity and reduced their average wage costs. By contrast, Germany remained the location for company head offices, research and development, and activities that require highly qualified, highly specialised and well paid staff. A shining example of this is provided by the big automakers with their modular manufacturing. Integration in global production chains is often the only way for Germany's SMEs with their highly specialised niche products to generate economies of scale.

Assertion 5: We need an investment agenda for Europe

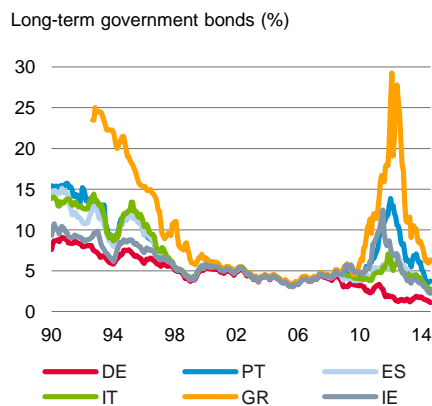
No. We do not consider it necessary for Europe to set out an agenda aimed at boosting private investment – as called for recently by the DIW. In our opinion, there is no pent-up demand for private investment in Germany anyway, and if an EU investment fund is launched to provide financial support for private investment in other European countries, this harbours substantial risks of

<sup>11</sup> See Peters, H. (2013). Global value chains secure competitive advantages for German companies. Deutsche Bank Research. Focus Germany. July 1, 2013.



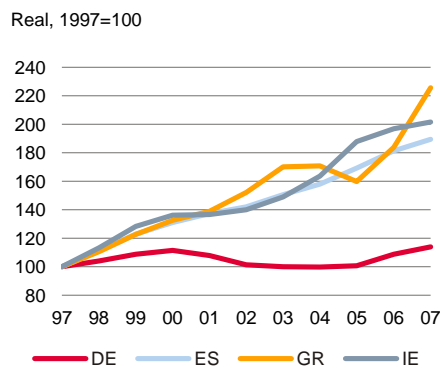
Focus Germany

Yield performance 20



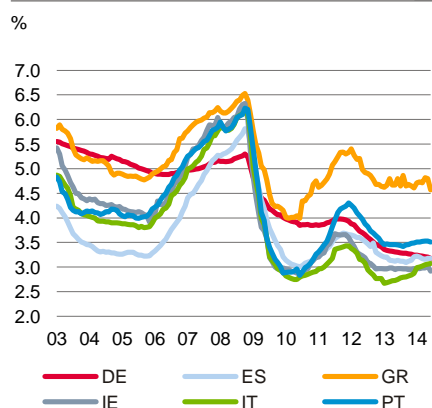
Sources: IMF, Global Insight

Gross fixed capital formation (1997-2007) 21



Source: European Commission (AMECO)

Corporate lending rates 22



Source: ECB

generating false incentives. The DIW says the investment fund should be able to secure favourable refinancing terms with the help of guarantees from the EU member states. Such guarantees would mean reduced loan interest rates for companies in the crisis countries, thus resulting not only in better loan offers there but also increased demand for loans.<sup>12</sup>

Certainly, higher investment can temporarily increase economic growth, but whether the growth potential of an economy is also boosted is highly dependent on the quality and efficiency of the investments. Recent history in particular has shown that inordinately low interest rates helped to bring about the massive negative developments in these countries. Long-term rates in the eurozone periphery had plunged in the run-up to EMU and nearly drew abreast of the levels in Germany between 1998 and 2007. At the same time, investment growth in these countries noticeably outstripped the pace in Germany. While German investment in machinery and equipment expanded by an average of 5.8% p.a. in real terms in the 10 years before the financial crisis, the same metric was higher by roughly 1 pp in Spain, by over 3 pp in Ireland and by almost 8 pp, in fact, in Greece. Including construction investment the spread to Germany was even greater still, reaching over 5 pp per year in Spain and 6 pp in Ireland. Therefore, it is no wonder that the countries on the eurozone's southern periphery averaged the lowest scores on investment efficiency over the past few decades by international standards.

The fact that this "over-investment" had, or still has, to be reduced is probably undisputed. True, gross investment in machinery and equipment did shrink during the deep recession following the financial and sovereign debt crises – in a range from 20% (Spain) to 55% (Greece). However, whether a new equilibrium has already been reached on which a single European investment fund can be developed is to be doubted in view of the capital stock, which is considerably larger in these countries in relation to GDP than it is in Germany. This is particularly true in Spain in respect of the housing market. The suggestion, too, that such an investment fund would lead to lower interest rates and thus to higher demand for loans in the crisis countries is not convincing either considering recent history and the current level of corporate loan rates. In the eurozone, lending rates have already plunged by 2-3 pp since peaking in October 2008 and are now in fact lower than before the start of the financial crisis. This also applies to Greece, where corporate lending rates, at just over 4 ½% at present, are 1 ¼ pp below their level of January 2003. Certainly, corporate lending rates in Greece and Portugal are higher than those in Germany, where they are now just over 3%. By contrast, in Spain and Italy they match the German level, and in Ireland they are in fact a tad lower. However, given the much higher (credit) risks in view of the economic performance in Greece, for instance, the claim that interest rates are too high goes over the top, in our opinion.

Admittedly, the restrictive lending conditions presumably also weigh on sensible investment projects being pursued by companies in the peripheral countries. But whether a new source of financing in the shape of a European fund is the right solution is questionable, especially as regards the fund's vague lending arrangements. A soundly implemented European Banking Union and Single Supervisory Mechanism as well as successful completion of the Asset Quality Review probably constitute the better and more direct solution, since this approach is designed to put bank-based credit financing back on a proper, permanent footing.

<sup>12</sup> See Fichtner, F., Fratzscher, M., Gornig, M. (2014). An Investment Agenda for Europe. DIW Economic Bulletin 7 / 2014.



All in all, though, the guiding principle needs to be further consolidation, and not a renewed build-up of debt. After all, huge debt accumulation also in the corporate sector when real interest rates were too low was the cause of today's plight in the southern periphery. In relation to economic output, corporate debt increased by nearly 25 pp of GDP in Greece and Italy between 1995 and 2007, and no less than doubled in Portugal and Spain.<sup>13</sup> Since then, company debt has climbed further in the southern peripheral countries (except in Spain) on account of the deep recession. At present it is equivalent to nearly 80% of GDP in Greece, 93% in Italy, 127% in Spain and in fact nearly 160% in Portugal. In Germany, by contrast, corporate debt increased by merely 12 pp of GDP from 1995 to 2007 and now stands at just under 73%.

Investments must be gauged by their efficiency. However, it is doubtful that government policymakers can assess this aspect better than business leaders can. Accordingly, there are high risks of false incentives and correspondingly negative developments.

Liabilities of non-financial corporations\*

23

EUR bn	1995	2007	2012	2013	Change, EUR bn	
					1995-2007	2007-2012/13
Euro area (17 countries)	3,837	8,424	9,490		4,586	1,067
Belgium	152	253	364	374	101	121
Denmark	105	251	275	259	146	8
Germany	1,223	1,892	1,930	1,999	668	108
Ireland**	156	260	408		105	147
Greece	36	144	147	141	107	-3
Spain	269	1,347	1,304		1,078	-43
France	921	1,700	2,158		779	457
Italy	553	1,352	1,458		799	106
Netherlands	358	684	654		326	-30
Austria	116	236	310		121	74
Portugal	65	218	261	261	153	43
Finland	70	153	201		83	48
Sweden	191	480	627	611	288	131
United Kingdom	579	1,790	1,887	1,838	1,211	49
Iceland***	23	83	34		60	-49
% of GDP					Change, pp	
Euro area (17 countries)	68.9	93.3	100.1		24.4	6.8
Belgium	70.1	75.5	96.8	97.9	5.4	22.4
Denmark	75.6	110.4	112.2	104.1	34.8	-6.3
Germany	66.2	77.9	72.4	73.0	11.7	-4.9
Ireland**	132.3	137.3	248.5		5.0	111.2
Greece	40.5	64.4	75.8	77.3	23.9	12.9
Spain	59.0	127.9	126.8		68.9	-1.1
France	76.6	90.2	106.2		13.6	16.0
Italy	63.9	87.0	93.1		23.1	6.1
Netherlands	111.5	119.6	109.1		8.1	-10.5
Austria	63.5	86.2	101.0		22.7	14.8
Portugal	71.9	128.7	157.9	157.3	56.8	28.6
Finland	70.2	85.1	104.4		14.9	19.3
Sweden	98.8	142.0	153.6	145.2	43.2	3.2
United Kingdom	64.2	85.8	98.2	96.7	21.6	10.9
Iceland***	235.7	555.1	320.2		319.4	-234.9

\* excluding equity

\*\* Starting in 2001

\*\*\* Starting in 2003

Sources: Eurostat, Bundesbank

<sup>13</sup> However, this may be partly due to a structural change in corporate funding, since companies used to have only limited access to debt finance.

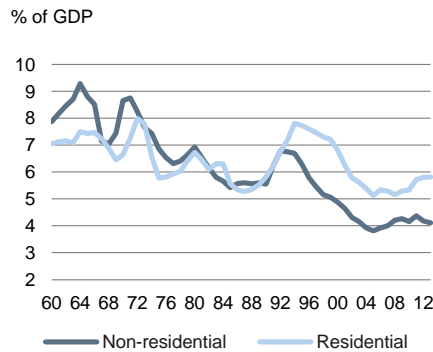




Focus Germany

Germany: Investment in construction

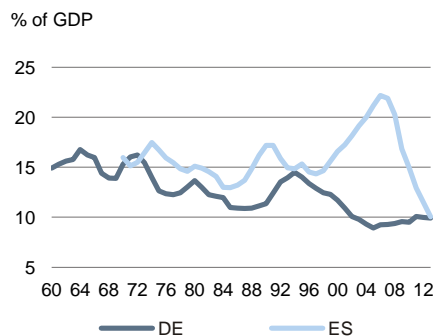
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Source: European Commission (AMECO)

Investment in construction

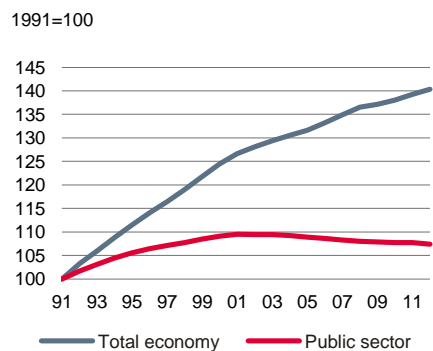
25



Source: European Commission (AMECO)

Germany: Real net capital stock

26



Source: Federal Statistical Office

Assertion 6: Germany invests too little in construction

No. While rising real estate prices in many conurbations certainly show a demand overhang for housing, this does not apply across Germany as a whole.

Furthermore, the share of German construction investment in GDP is trending down, and the trend is much steeper in the non-residential segment (public and commercial construction) than in the residential segment. Unlike in several other eurozone countries there have been no more negative developments or overshooting in the construction sector in Germany since the correction of the reunification-induced building boom (especially for housing), so the construction investment ratio has remained more or less unchanged at 10% since about 2000. This contrasts with the trend in Spain in particular, where the ratio had climbed by nearly 8 pp to over 22% from the late 1990s until 2006, mainly because of the housing market boom, and since then it has more than halved to around 10%. Currently, German construction investment matches the level in the other euro countries in relation to GDP and exceeds the US ratio by about 2 ½ pp.

Assertion 7: Germany's capital stock is too low, and facilities are already worn out

No. This assertion only holds for the public sector, not the private sector. Gross capital stock ultimately refers to the cumulative total of gross capital formation over time. If the losses in the value of these assets (depreciation) are subtracted, the difference is the net capital stock. The lion's share of net capital stock (close to 87%) is held by the private sector, and 13% by the public sector.

Since private net capital formation has been positive across the board (also applies to 2009, when gross capital formation slumped by over 10% in all), the private sector's net capital stock has continued to grow. This is mainly due to the service sector, while the capital stock in industry has trended more or less sideways. By contrast, the public capital stock has shrunk by 2% altogether in real terms since 2003. Since that year, the public sector has invested less in its capital stock than the latter has lost value, i.e. gross fixed capital formation has been less than write-downs for depreciation.

According to European Commission calculations, Germany's total net capital stock, in real terms, equalled 2.94 times annual economic output (GDP) in 2013. This was only slightly shy of its pre-crisis peak of 3.04. (The 2009 peak of 3.08 can be explained by the 5.1% slump in GDP.)

An international comparison shows that German net capital stock in relation to GDP matches the Japanese reading and is much higher than the British and American values, but that it has fallen far behind the readings in the other EMU countries of late. This applies mainly to Spain, but does not mean that the Spanish economy has again intensified its investment activity since the beginning of the crisis. On the contrary: the growth of the capital stock has slowed noticeably. Half of the strong increase in Spain's net capital stock in relation to GDP since the beginning of the crisis is to be explained by the collapse in its economic output.

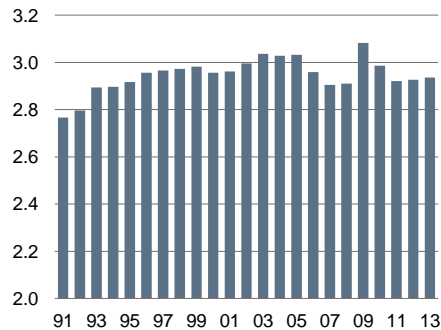


Focus Germany

Germany: Net capital stock

27

Real, in relation to GDP

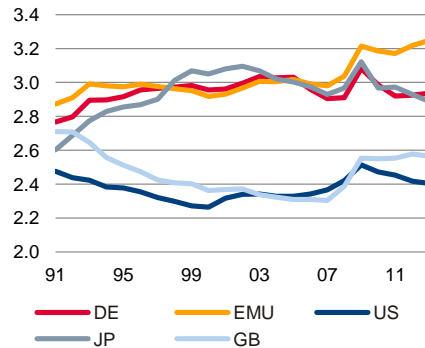


Source: European Commission (AMECO)

Net capital stock

28

Net capital stock per unit of GDP at constant prices

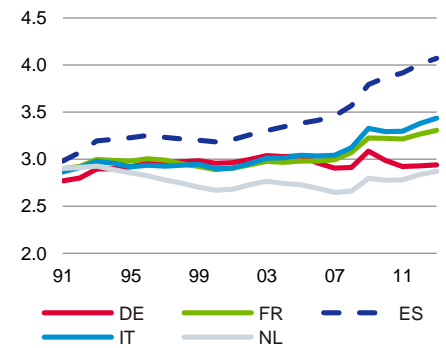


Source: EU Commission (AMECO)

Net capital stock

29

Net capital stock per unit of GDP at constant prices

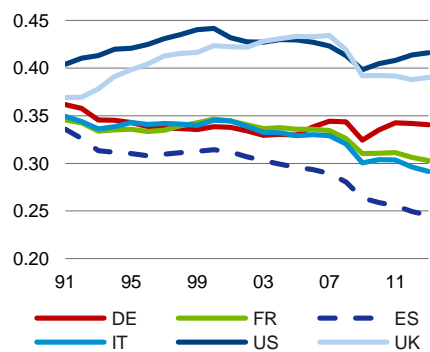


Source: EU Commission (AMECO)

Capital productivity

30

Real GDP per unit of net capital stock



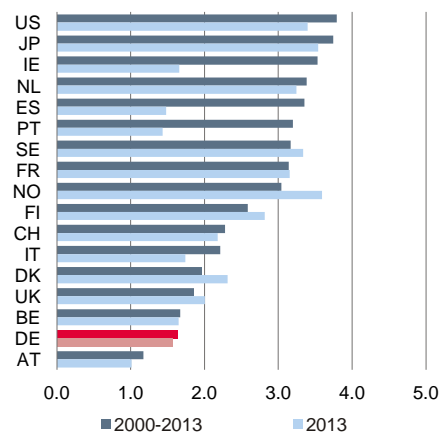
Source: EU Commission (AMECO)

Having said that, Spain had already had a higher capital stock (in relation to GDP) than the other major EMU countries since the early 1990s. However, the adjacent chart depicting capital productivity impressively shows that it is crucial to know how the investments are used. Over the entire period under review, Spain's capital productivity trailed that of each of the other major EMU countries and fell far below that of the US and the UK. Moreover, since the start of the 2000s – when the euro was launched – capital productivity has been trending downward. This means that the extensive expansion of Spain's capital stock – at 3.4% p.a. it grew three times as fast as Germany's between 2000 and 2013 – went hand in hand with declining returns. Every unit of real net capital stock generated a 30% smaller contribution to GDP in Spain in 2013 than was the case in Germany. This is attributable not least to the large share of construction investment in Spain over the past decade. Grossly simplified: investment in bricks and mortar contributes less to the development of an economy's production potential than do investments in machinery and intellectual capital.

Public investment

31

% of GDP



Source: European Commission (AMECO)

Assertion 8: The public sector should invest more

Yes. The assertion that Germany does not invest enough applies to the public sector. In this area, the investment ratio is merely 1 ½% of GDP, as opposed to nearly 3 ½% in the US and 2.3% on average in the other EMU countries. In France, public investment is twice as high as in Germany.<sup>14</sup> This is put into a different perspective, though, if public R&D expenditure is included in capital formation, a change forthcoming with the revision of the national accounts in September. This would narrow the spread to the average of the other euro countries to nearly ½% of GDP, and to the US to around 1%.

Pent-up demand mainly for transport infrastructure ...

Nonetheless, public investment is important for economic growth, since such investment in infrastructure, for instance, often represents intermediate inputs for private investment activity. The assertion that there is pent-up demand for investment in (transport) infrastructure is scarcely likely to be challenged by either government officials or the academic community.

<sup>14</sup> Also, the fact that in France a larger share of companies is in public hands does not weaken this argument, since these are generally not attributed to public investment.

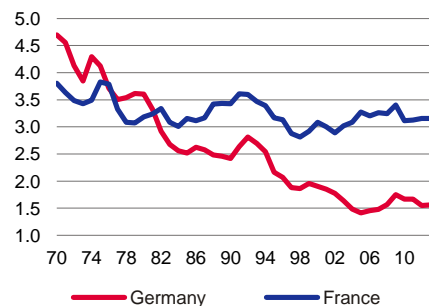


## Focus Germany

### Public investment

32

% of GDP

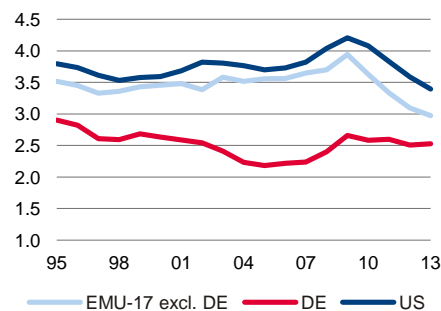


Source: European Commission (AMECO)

### Public fixed capital formation incl. R&D expenditure

33

% of GDP

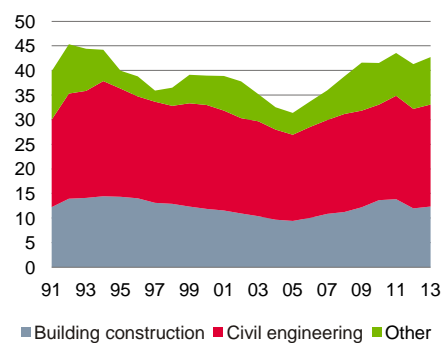


Source: European Commission (AMECO)

### Public investment

34

EUR bn



Source: Federal Statistical Office

On average, a good 80% of public investment is in construction, of which nearly two-thirds goes towards civil engineering projects, mainly covering transport infrastructure.

However, it would be quite a stretch to infer from the large difference to public investment in France, for instance, that Germany's infrastructure is in a state of disrepair by comparison. Conversely, we think it is equally false to conclude that France's infrastructure is twice as good as Germany's. In the rankings of the World Economic Forum, Germany's infrastructure regularly achieves excellent scores. In the current ranking, Germany trails Hong Kong and Singapore to claim 3rd place, still coming in ahead of France, while the US merely ranks 10th. However, Germany has fallen back two places in relation to the 2009/10 ranking, when it still led the field. This indicates a need for action especially with regard to road quality, a segment in which the assessment for Germany has deteriorated by 6 notches, to 11th place, while France has not budged from 2nd place. Germany's ranking according to the World Bank's "Logistics Performance Index" does not point to general infrastructure deficiencies either. Germany holds 1st place in the current ranking (2014); in the infrastructure subcategory it also ranks 1st, as it did back in 2012.

The well-developed infrastructure has always been and remains an important reason for many companies to invest in Germany. This at least partly compensates for poorer starting conditions on other location factors such as the German tax and levy burden.

### ... but the volume is a matter of dispute

In public debate, amounts going into the billions are mixed up with abandon. When comparing frequently cited reports or figures quoted from them it must be taken into consideration that the data are in some cases based on differing time periods (annual extra requirements, total requirements over a certain period, backlog requirements) or differing definitions of infrastructure (total infrastructure incl. energy networks or only road infrastructure). Moreover, the analytical approaches range from surveys and bottom-up estimates through to top-down models. In some cases, the figures only focus on public investments, while in other cases target figures also cover infrastructure components that are largely funded by the private sector. Here is a short overview of some of the frequently cited reports:

- The "Kommission Zukunft der Verkehrsinfrastrukturfinanzierung" (Daehre Commission on the "Future of transport infrastructure financing", December 2012) puts the additional annual investment required for transport infrastructure at at least EUR 7.2 bn. According to the bottom-up estimate, this is the amount that would be necessary to stop the ongoing decay of the infrastructure. The underfunding of current maintenance and operation of all modes of transport totals EUR 4.5 bn. The pent-up demand owing to neglected maintenance investment in previous years (excluding expansion and upgrading) is estimated at EUR 2.5 bn. This means that new investment, for example to plug gaps or eliminate bottlenecks is (nearly) excluded. In a breakdown of the different transport modes, EUR 4.7 bn is earmarked for roads, EUR 2.0 bn for railways and EUR 0.5 bn for waterways. The report mainly diagnoses a perception problem of the public at large, which fails to adequately notice the decay affecting public infrastructure. By contrast, the experts are largely unanimous in their depiction of the problem. The "Kommission Verkehrsinfrastrukturfinanzierung" ("Pällmann Commission", 1999) had already made similar findings. Given the discrepancy in perception and lack of (financial) provision for maintenance investment, it said the available funds had excessively flowed into newbuild projects or had even been cut back over the past few decades. However,



there was a significant number of transport ministers on the Commission who knew how budget talks develop when funding is tight – the departments seldom obtain everything they ask for. Furthermore, the Commission has staked its own claim of wanting to attract public attention to this issue.

- The "Kommission Nachhaltige Verkehrsinfrastrukturfinanzierung" (Bodewig Commission, 2013) takes the Daehre Commission analysis as the foundation for its work, therefore coming to the same result and above all it presents recommendations on how the underfunding could be permanently eliminated.
- The Cologne Institute for Economic Research (IW) largely confirms the above analysis with its own study "Infrastruktur zwischen Standortvorteil und Investitionsbedarf" (2014) and furthermore emphasises that the sums for transport infrastructure tend to be conservative estimates, not least because unit costs have jumped noticeably since the mid-2000s and necessary capacity expansion has not been tackled. The IW is frequently quoted as having called for extra investment totalling EUR 120 bn over 10 years. However, this total goes beyond the transport infrastructure and includes investment in modernisation of the IT networks and expansion of the power grid, which is actually in good condition. Nonetheless, the IW says the latter has to be upgraded to meet future challenges (buzzword: Energiewende). Germany's electricity and IT networks are largely in private hands, though. In this case, what we believe is required is an investment-promoting (legal/regulatory) environment instead of direct public investment.
- The report prepared by the German Institute of Urban Affairs (Difu) for the development bank KfW (KfW Municipal Panel 2014) finds an investment backlog of EUR 118 bn. Assuming a period of 10 years, as the IW did, the result works out at roughly the same magnitude for annual investment. However, this finding is based only on a survey of municipalities and includes the entire gamut of municipal infrastructure (e.g. municipal streets, schools, local public transport, water supply and sewage), and not the road infrastructure alone (Daehre Commission). Only about 25% of the investment requirements determined by the survey are accounted for by municipal road and transport infrastructure. In addition, the total emerges from the response to the question on the "investment backlog". This means that on top of necessary maintenance and replacement investment the total also includes an assessment of what new investment is needed and thus what demand lies ahead. These survey findings are probably better understood as a very rough guideline. In comparison with the previous survey back in 2012, the investment backlog has declined by EUR 10 bn on an only slightly higher municipal investment volume totalling EUR 25 bn. The authors themselves point out that impact/severity assessments, expectations and wishes play an important role in the process. This suggests that the estimates may fluctuate heavily from year to year.
- The IMF (Germany, 2014 Article IV Consultation, Staff Report) is quoted as calling for a debt-financed public investment programme worth EUR 14 bn, or 0.5% of GDP, per year for four years. However, the IMF does not state its own estimate of investment demand. Rather, it also relies on the studies referred to above. The additional investment identified there runs to 0.2%-0.4% of GDP per year. However, the IMF calculates the direct economic effects of higher investment on Germany and its indirect contribution towards eliminating economic imbalances in Europe on the basis of a public investment programme equal 0.5% of GDP. Note, though, that it disregards the fact that investments in the energy grid in particular are largely of a private nature, and should be as well. The reason for suggesting this programme should be debt financed is linked to Germany's relatively comfortable budget situation in particular. However, there are also



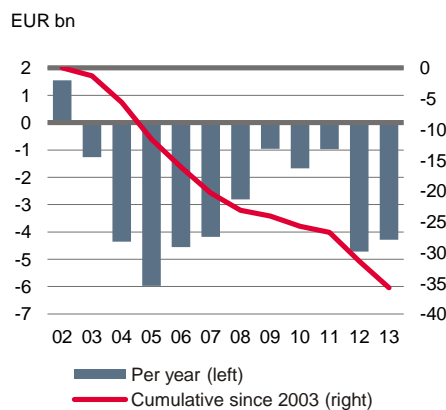
underlying hopes that this type of funding will create positive demand effects for other countries. A EUR 14 bn increase in public investment would boost this budget item by one-third (public gross fixed capital formation in 2013: EUR 42.7 bn). From the standpoint of public planning and authorisation capacities alone, this total appears rather unrealistic.

**Extra public investment requirements probably run between EUR 4 bn and EUR 7 bn per year**

Given their heterogeneity the reports discussed above do not provide any clear statement on the size of the additional investment required. With the help of public gross fixed capital formation and the related depreciation charges it is possible, though, to at least check the given sums for consistency, since all the studies mainly focus on maintaining the existing infrastructure. However, considering the sizeable volume of the existing stock and the demographic outlook it looks rather doubtful that there is an extensive need for investment in new infrastructure projects – going beyond plugging a few "gaps in the network"<sup>15</sup> – even if goods traffic is likely to continue growing faster than passenger traffic – not least because Germany is a transit country. Since 2003, the government has invested less in gross capital formation than its has written down for depreciation (negative net investment). On average, net annual investment totalled minus EUR 3.2 bn from 2003 to 2013. In 2014, depreciation exceeded gross capital formation by EUR 4.3 bn. On a cumulative basis, the "gap" totals EUR 35.7 bn. The public capital stock shrank by this sum within 11 years.

Germany: Public net fixed capital formation

35



Source: European Commission (AMECO)

Given these considerations and the already cited reports, it appears plausible to us that the extra investment required annually by the public sector to maintain the entire existing stock of infrastructure would total between EUR 4 bn (stopping further decay) and EUR 7 bn (additional catch-up maintenance investment to shore up infrastructure over the next 10 years). This additional public investment would equal 0.15% to 0.25% of GDP. Therefore, in some cases our estimates fall far below the numbers in the reports quoted, since we explicitly confine our focus to direct public investment. Of course, via the framework conditions set by the public sector it is indirectly also partly responsible for investments in heavily regulated markets (IT networks and power grid).

**Investment volume is above all a political challenge**

From a purely macroeconomic perspective, plugging an infrastructure-related investment gap of less than 0.5% of GDP hardly seems to be a major challenge. According to the German transport ministry, however, by comparison only EUR 10.5 bn was available for investment in national transport routes in 2012. Granted, of the total estimated investment required, only a part falls in the remit of the federal government. Nevertheless: attempting to increase one single budget item so significantly is likely to require substantial political effort.

So far, the federal government has only taken tentative steps to address the problem. According to its medium-term financial planning an additional EUR 5 bn is to be earmarked for investment in infrastructure in this legislative period over four years.

<sup>15</sup> For example, addition of traffic lanes to heavily used motorways or upgrading and selective expansion of rail network (bottleneck affecting goods traffic, among others).



### Efficiency of public investment at least as important as its volume

An important argument for public investment in infrastructure is that it enables the potential output of the economy to be maintained (maintenance investment) or even increased (new investment). But not every investment is conducive to growth. There is a multitude of examples both at home and abroad of "white elephants" – unused or scarcely used airports, bridges to nowhere or underutilised motorways – and for excessive budget overruns that surely would have turned out quite differently on a cost-benefit analysis of the investment. Just recently, press releases called attention yet again to an internal report from the federal government to the building committee, according to which only 14 of 40 federal construction sites had kept spending in line with the original budget targets and that the extra costs would add up to as much as EUR 1 bn. There is likely little doubt that Germany's regional airports are shining examples of politically motivated optimistic demand forecasts.

The problem of inefficient use or of white elephants is surely less relevant for maintenance investment in transport infrastructure. But, here too, the question arises as to whether a road or bridge will still be needed in future considering the demographic shift and the increasing migration flows towards the major conurbations. Against the backdrop of empty public coffers and the debt brake that will also apply to the Länder from 2020, the costs and benefits of every investment have to be weighed up against each other (and regional, proportional political representation must not play a part).

### Investment cannot be funded permanently via higher borrowing

In 2013, Germany reported a general government budget that was balanced. In the course of 2014, a slight surplus (0.2% of GDP) could emerge, although this should melt away again in the following years. Moreover, the balanced budget materialised thanks not least to the surplus generated in the social security system. By contrast, the federal and Länder budgets, where the expenditure on investment would mainly be incurred, have continued to post deficits – albeit shrinking ones – in recent years. Even the finance ministry is now forecasting more or less barely balanced budgets at the different levels of government, though we tend to regard this as an optimistic scenario. The investment sums we proposed (0.15% to 0.25% of GDP per year) therefore cannot be funded via surpluses, which raises the question of how the demand for investment should be met.

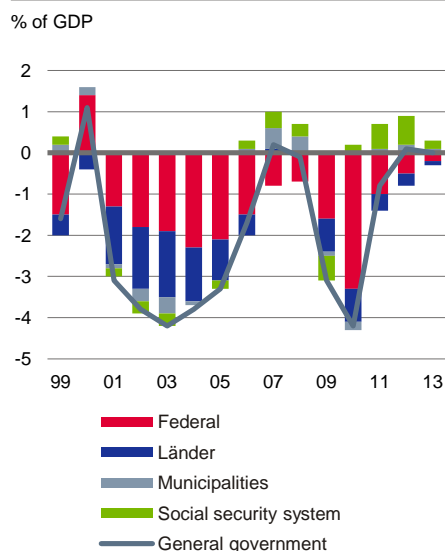
Not only the IMF recommends and/or demands that these investments be debt-financed in view of the comparatively(!) good fiscal situation in Germany. We reject this assertion for several reasons:

- i. The budget is currently just barely close-to-balance and the federal government's financial planning aims for a structurally balanced budget by 2018. At the same time, by definition the constitutionally anchored debt brake requires a structural deficit ceiling of 0.35% of GDP from 2016. Working on the basis of the upper limit of investment demand (0.25% of GDP) as defined by us (and assuming that the investment is shouldered by the federal government alone), Germany would come dangerously close to this ceiling. So in times of possible structural burdens Germany would have no more fiscal room for manoeuvre. Both the German finance minister and the Bundesbank support the notion of maintaining a safety margin to the deficit ceiling.
- ii. Permanent excess expenditures – the term seems reasonable for a ten-year period – should not be debt-financed, but instead covered via cutbacks in other areas or via higher revenues. This assessment is not changed by the



Germany: Budget balance by level of government

36



Source: Eurostat

persistently record-low interest rate levels at present either. After all, at some point interest rates are going to head back up again. The same applies to the argument that there is currently no crowding-out of private investment by public investment, and that the government can therefore "go full tilt" without any problem.

- iii. The argument that future generations will benefit from infrastructure investments made today is only partly true, in our opinion. At issue here primarily are backlog and maintenance investments that have not been made by the current generation and that would benefit future generations directly, as failure to invest now mainly has a negative impact on today's production potential. There probably would have been enough funding available for the job if the ruling grand coalition had refrained from instituting its costly pension legislation.

Moreover, the users of the infrastructure could assume a bigger role in sharing the costs – beyond the current debate on tolls. This would also open opportunities to enable the private sector to participate in the investments via PPP projects.<sup>16</sup> However, increased user participation must not be taken as an occasion to cut back budget funding. This is what happened in Germany when truck tolls were introduced on the motorways and later extended to the federal trunk road network. Currently, however, there is little political will to intensify private-sector participation in the financing of infrastructure investment, even though private capital is in search of long-term types of investment with interesting risk-reward profiles, and infrastructure projects would be a good fit in this respect. Additionally, greater opening of the asset class infrastructure to private investors, such as insurance companies or pension funds, could also help ensure that in times of low interest rates private investment is channelled into economically sensible projects.

## Conclusion

In our estimation, there is no significant investment gap in the private sector in Germany. Similar views are held by the German Council of Economic Experts<sup>17</sup> and the German finance ministry<sup>18</sup>. Therefore, we do not believe that general incentives are required for investment activity. Private investment decisions are geared to companies' profit expectations, but they also depend on the economic policy environment. It is a pretence of knowledge if government authorities believe they are better able to assess this aspect than business leaders. There is pent-up demand for investment in the public sector. In our view, this is to be seen not only in transport infrastructure but above all in areas acting to counter the effects of the demographic challenge, such as research & development. We estimate that the total required expenditure will run to EUR 4-7 bn per year and thus be noticeably less than other analyses claim, but considerably higher than provided for by the government in its financial planning to date. However, substantial efforts would be required on the part of politicians to implement such plans, since public budget funds are tight despite all claims to the contrary, and greater participation of the users and/or private investors is similarly a difficult political issue.

Bernhard Gräf (+49 69 910-31738, bernhard.graef@db.com)  
Oliver Rakau (+49 69 910-31875, oliver.rakau@db.com)

<sup>16</sup> See also Boysen-Hogrefe, Jens et al. (2014). Finanz- und Wirtschaftspolitik bei einer anhaltenden monetären Expansion. Kiel Institute for the World Economy.

<sup>17</sup> See German Council of Economic Experts (2013). Against a backward-looking economic policy. Annual Economic Report 2013/14.

<sup>18</sup> Bundesministerium der Finanzen (2014). Investitionsschwäche in Deutschland? Monatsbericht. March 2014.



## Optimal German real estate portfolios

- City data shows that the efficient frontier of multi-asset portfolios improves if real estate investments are taken into account. The increasing prices in the last years made German real estate investments even more attractive.
- We show that secondary cities which are often not in the focus of investors can help to improve the efficient frontier of portfolios. Moreover, an investment mix in apartments, retail and office is regularly more efficient than residential-only or commercial-only investments.
- If stricter rent controls are implemented and apartment yields decline, the commercial market may be an attractive alternative for German portfolios.

### What can you expect?

How did we calculate missing prices and yields?

For the commercial market, BulwienGesa provides us with net rents and net initial rental yields (applying the definition of the Society of Property Researchers, Germany (gif): net rent divided by gross acquisition price) for the retail and office markets as well as for central and peripheral locations (four asset classes in total). We assume that the net initial rental yield is also close to an average rental yield over the whole investment period. Given the low volatility of rental yields it is a benign assumption. For each commercial asset class we calculate a gross acquisition price (by dividing the net rents by net initial rental yields). Price yields (also often called capital growth) are then calculated on the basis of the gross acquisition price. The gross acquisition price includes stamp duty, registration fees and other costs. These ancillary costs vary across the Länder (Germany's federal states) and years, making it difficult to calculate net acquisition prices.

In the residential market a yield is not directly available but we calculated a yield by dividing the net rent by the net acquisition price, both provided by BulwienGesa. This yield is slightly higher than the concept of net initial rental yields (used above for the commercial market and gross > net acquisition price). However, the different definitions of rental yield should have a small impact on the optimal portfolio outcome as it rests on the variance-covariance matrix of total yields (also often called total return), i.e. not their level but their relative changes in terms of deviations from means. These steps allowed us to calculate population-weighted indices for rental yields, price yields and total yields for 21 A and B cities across six asset classes.

It is well known that real estate assets have low correlations with other financial markets. Accordingly, multi-asset portfolio investing in financial products and real estate can substantially reduce portfolio volatility. However, there is a dearth of empirical portfolio research which identifies efficient frontiers in German portfolios, i.e. a maximum-return portfolio for a given risk level or a minimum-risk portfolio for a given return. We are able to provide some insights by analysing the performance of 21 cities: seven prime locations, also referred to as A cities (Berlin, Dusseldorf, Frankfurt am Main, Hamburg, Cologne, Munich and Stuttgart), and 14 secondary (B) locations, these being relatively big cities of national and regional importance (Bochum, Bonn, Bremen, Dortmund, Dresden, Duisburg, Essen, Hanover, Karlsruhe, Leipzig, Mannheim, Münster, Nuremberg and Wiesbaden). In each city six asset classes are taken into account: new and existing apartments, central and peripheral offices and central and peripheral retail. A total of 126 annual time series from 1991 to 2013 are available for our portfolio analysis.

We are particularly interested in how the risk-return properties and variance-covariance matrix have changed with the start of the housing boom in Germany's large cities in the last five years. This article is more helpful for institutional investors but retail investors may also gain a better understanding of how overall wealth depends on the development of house prices and financial market indices. Our analysis starts with a real-estate-only portfolio, comparing a pre-crisis sample with a "2008 to 2013" sample. The division in two subsamples is based on the current German real estate cycle. Before 2008, German house prices moved sideways or even declined after the German reunification boom in the 1990s. Subsequently, the efficient frontier of a multi-asset portfolio is constructed by adding the DAX, a total return index of 30 selected German blue-chip stocks, and the major German government bond index, the REX, which comprises 30 national bonds with a fixed coupon and remaining term of between six months and 10.5 years. Finally, we describe two scenarios which try to capture the effect of stricter rent control. But before we delve into the portfolio analysis we briefly describe the data.

### Yield indices of A and B cities

German property markets offer attractive rental yields. The 2013 rental yield is around 4% for new apartments on average across the 21 A and B cities, roughly 5% for existing apartments, central office and central retail and roughly 7% for peripheral office and peripheral retail. These yields are quite attractive, in particular if we take into account the low volatility relative to financial market indices but also relative to many real estate markets in other countries. In the



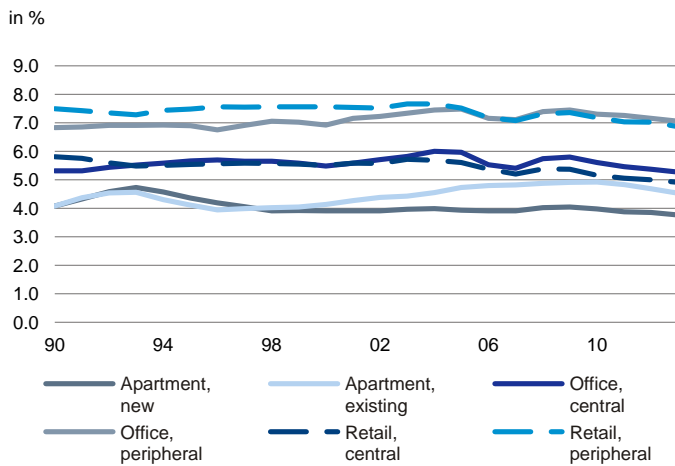


Focus Germany

last five years with price growth outpacing rent growth, rental yields started to decline by around half a percentage point. Price yields and total yields are much more volatile than rental yields (charts 2, 3 and 4).

1991-2013: Annual rental yield

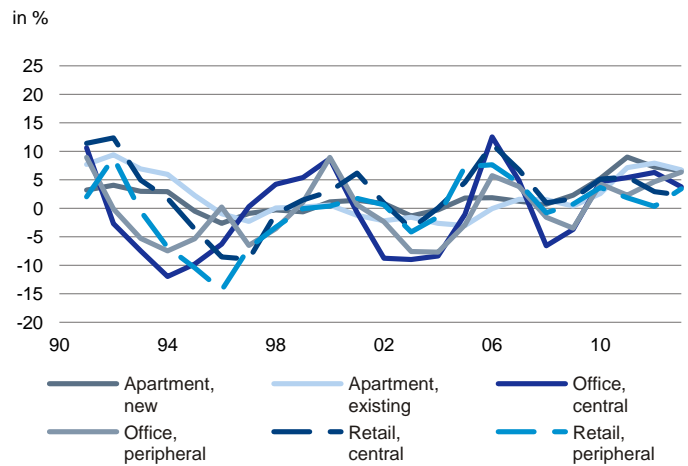
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Sources: BulwienGesa, Deutsche Bank Research

1991-2013: Annual price yield

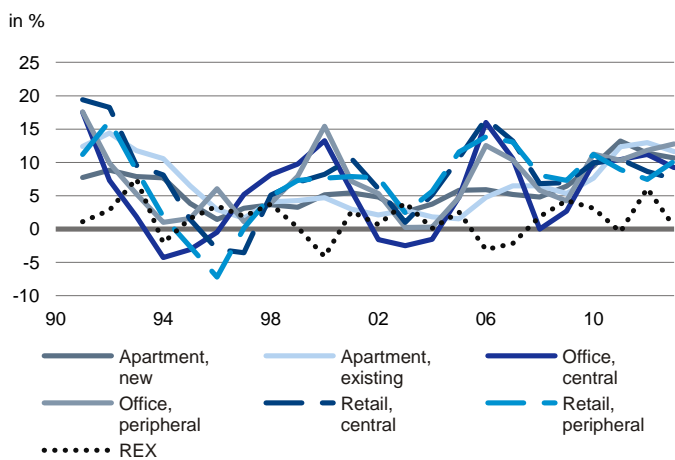
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Sources: BulwienGesa, Deutsche Bank Research

1991-2013: Annual total yields

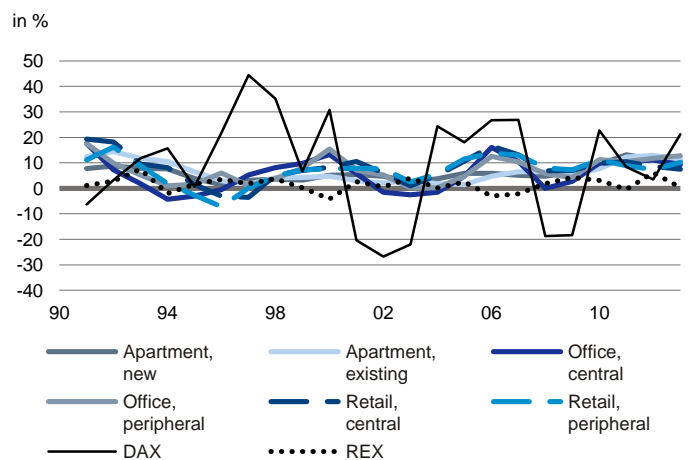
3



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

1991-2013: Annual total yields

4



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

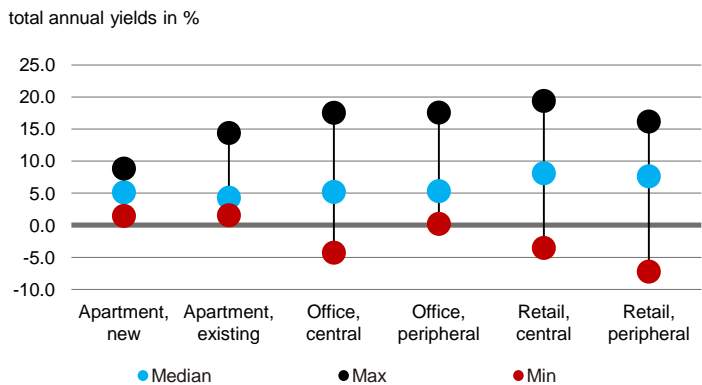
Yield ranges across cities for each asset class

A comparison of total annual yields from 1991 to 2007 with 2008 to 2013 across the six asset classes (charts 5 and 6) shows that in the last five years total yields had a median value of around 10% p.a., roughly 5 pp higher than the median from 1991 to 2007. The exception is the retail market, where total annual yields were quite similar in both periods. It is also obvious that in the last few years the yield range was smaller than in pre-crisis years. This is true in particular for the commercial market, where the performance was clearly negative (compare yield ranges in chart 5 with chart 6). For the whole sample 1991 to 2013, the range of total annual yields was particularly large in A cities relative to B cities, but the riskier yield profile of A cities did not always offer a higher yield, making the commercial market in B cities attractive (charts 7, 8).



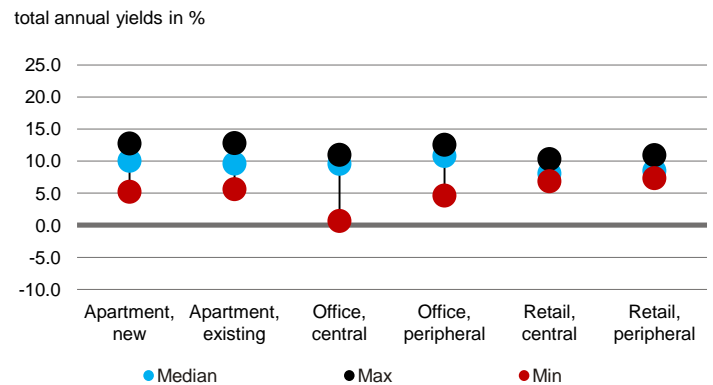
Focus Germany

1991-2007: Range of annual total yields of A and B cities 5



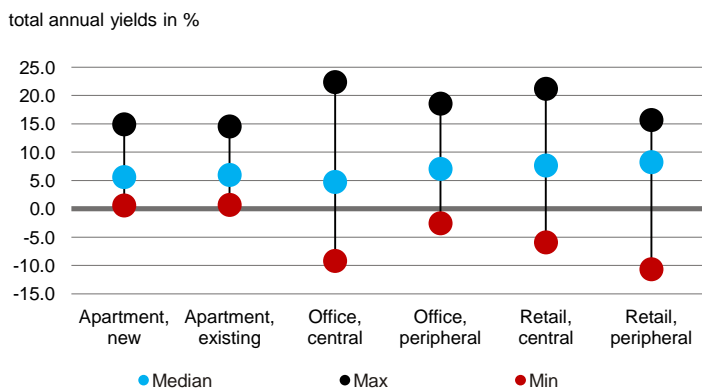
Sources: BulwienGesa, Deutsche Bank Research

2008-2013: Range of annual total yields of A and B cities 6



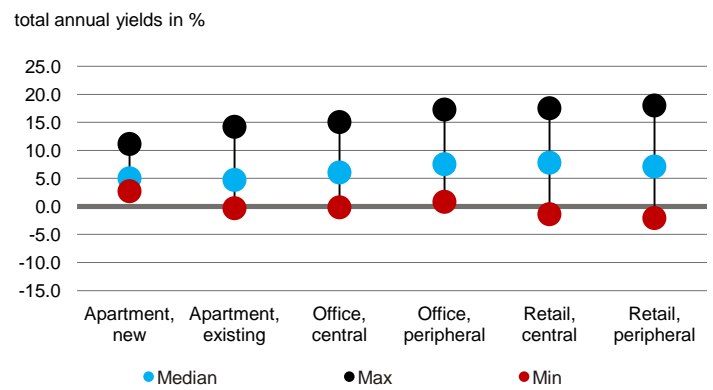
Sources: BulwienGesa, Deutsche Bank Research

1991-2013: Range of annual total yields of A cities 7



Sources: BulwienGesa, Deutsche Bank Research

1991-2013: Range of annual total yields of B cities 8

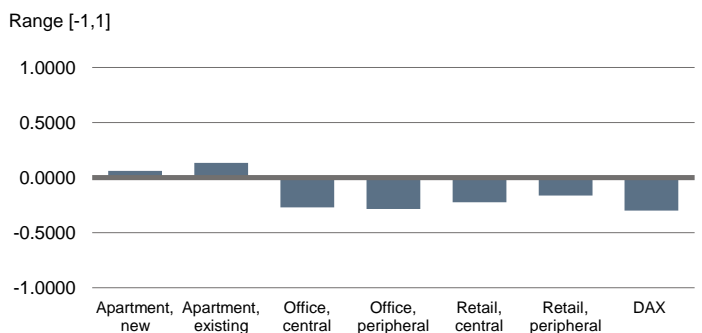


Sources: BulwienGesa, Deutsche Bank Research

### Correlation with DAX and REX

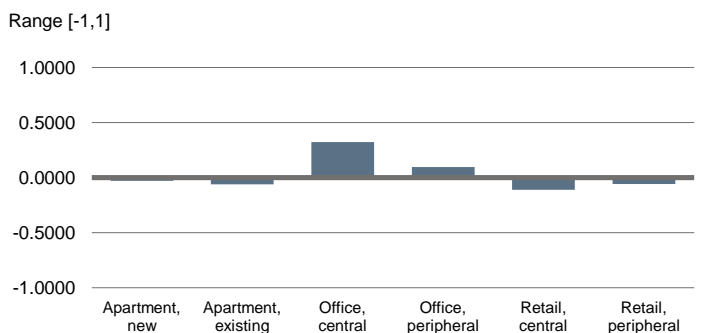
The attractiveness of multi-asset portfolios is evident in the low correlation of the total annual yields of our six asset classes in the property space with the major German bond and stock performance indices, REX and DAX. The correlation range is between -0.3 and +0.32 and the average correlation is nearly zero. The 15 correlations across our six property asset classes exhibit much higher correlations ranging from +0.32 to +0.87, with an average of 0.6.

1991-2013: Correlation REX vs real estate 9



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

1991-2013: Correlation DAX vs real estate 10



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters



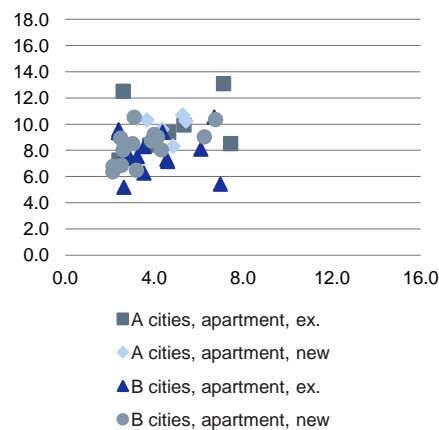
### Risk-return profiles of cities

We now change the perspective and use risk-return charts to describe the annual average yield of the 21 cities plus standard deviation from 2008 to 2013. Below (charts 11, 12 and 13), each marker represents a city and each chart describes two asset classes. It is no surprise that the residential asset classes are less risky than the commercial markets. From 2008 to 2013 the residential markets of many B cities seem to be less efficient than the residential markets of A cities, as A cities often outperform B cities to each volatility level. The opposite is true for the office market, where B cities often outperform A cities and to some extent also for the retail market B cities are more efficient than A cities.

2008-2013: Risk-return portfolio of A and B cities - asset classes: apartment, new and existing

11

x-axis: standard deviation in %  
y-axis: total annual yield in %

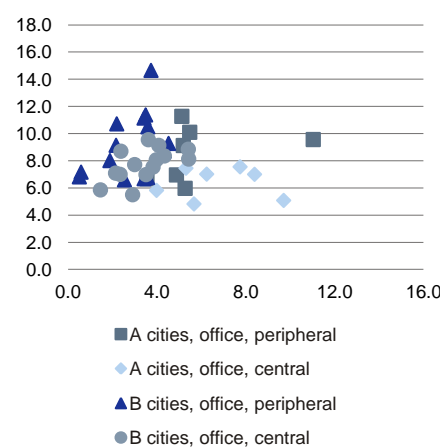


Sources: BulwienGesa, Deutsche Bank Research

2008-2013: Risk-return portfolio of A and B cities - asset classes: office, central and peripheral

12

x-axis: standard deviation in %  
y-axis: total annual yield in %

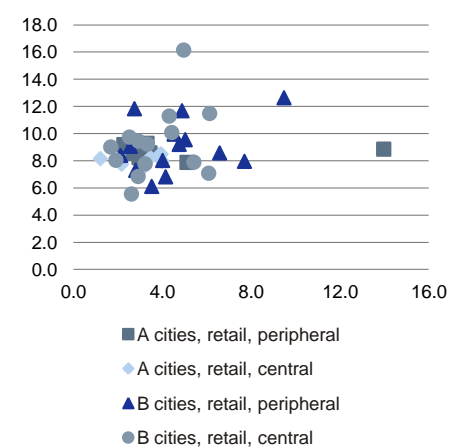


Sources: BulwienGesa, Deutsche Bank Research

2008-2013: Risk-return portfolio of A and B cities - asset classes: retail, central and peripheral

13

x-axis: standard deviation in %  
y-axis: total annual yield in %



Sources: BulwienGesa, Deutsche Bank Research

### Taking into account major financial market indices

Here, we compare our real estate assets with the DAX and the REX from 1991 to 2007 and from 2008 to 2013. For the sake of clarity, we do not distinguish between A cities and B cities in charts 14 and 15. This implies that, for each asset class, 21 data points representing 21 cities are available. The charts clearly show the market shift between the two samples. From 1991 to 2007 REX and DAX seem to offer an attractive investment relative to the risk-return metric of real estate assets. But, at first glance, neither the REX nor the DAX seem to be important for the efficient frontier of the “2008 to 2013” sample. It is also remarkable that the property cloud moved to the north-west. In detail, in 81 of 126 city asset-class combinations the “2008 to 2013” sample is more efficient than the “1991 to 2007” sample.

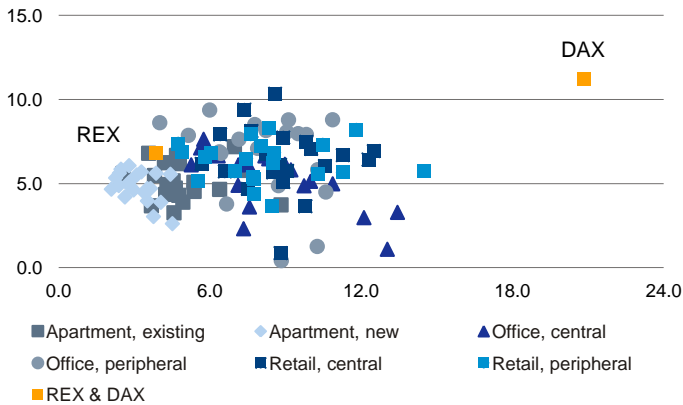


Focus Germany

1991-2007: Risk-return portfolio of A and B cities - asset classes: apartment (new vs existing), retail and office (central vs peripheral)

14

x-axis: standard deviation in %  
y-axis: annual total yield in %

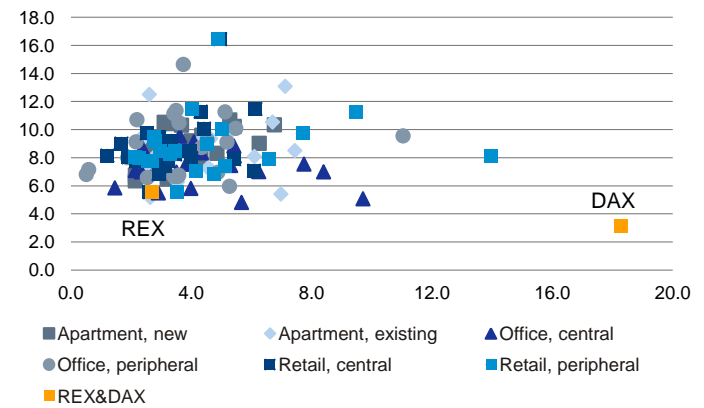


Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

2008-13: Risk-return portfolio of A and B cities - asset classes: apartment (new vs existing), retail and office (central vs peripheral)

15

x-axis: standard deviation in %  
y-axis: total annual yield in %



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

Portfolio analysis

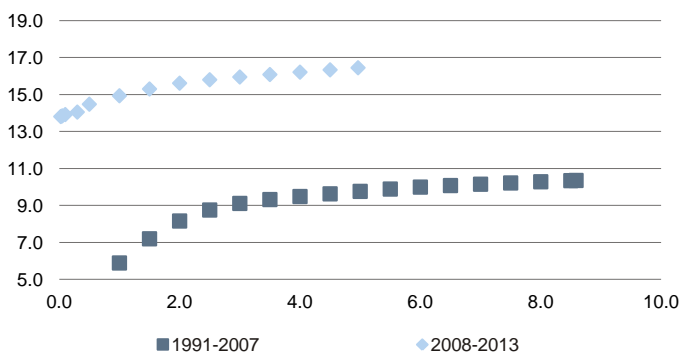
The standard approach to identify optimal portfolios is to maximise the annual portfolio yield by determining portfolio weights. Here we apply the approach to a portfolio containing 21 cities and six asset classes. For each data point of the efficient frontier we maximise the portfolio yield subject to a maximal standard deviation. We calculate the efficient frontier for our real-estate-only portfolio for both the “1991 to 2007” sample and the “2008 to 2013” sample. As the relocation of the point cloud in the risk-return chart already indicates, the efficient frontier of the “2008 to 2013” sample also moves to the north-west (chart 16), i.e. a higher yield and lower volatility.

Taking the DAX and REX performance into account shifts the “1991 to 2007” efficient frontier to the west (chart 17). Thanks to the low correlation of financial market indices and real estate performance, the total yield of low-risk portfolios increases strongly. As expected, optimal portfolios are multi-asset portfolios. But this statement does not apply to the “2008 to 2013” sample where neither the REX nor the DAX improves the portfolio. Hence, the optimal portfolio only contains real estate assets (chart 18).

Efficient frontiers of real-estate-only portfolios

16

x-axis: standard deviation in %, y-axis: total annual yield in %

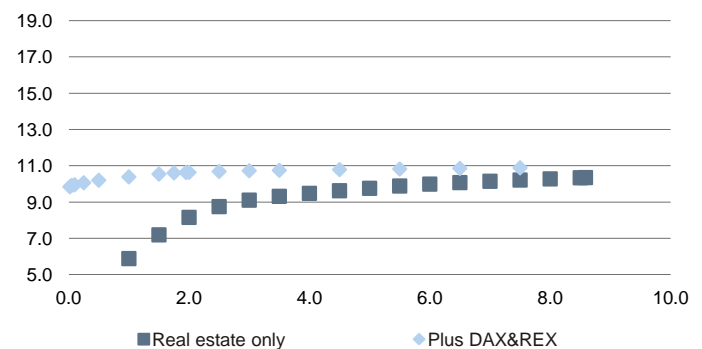


Sources: Deutsche Bank Research, BulwienGesa

1991-2007: Efficient frontiers of real estate portfolios with and without DAX and REX

17

x-axis: standard deviation in %, y-axis: total annual yield in %



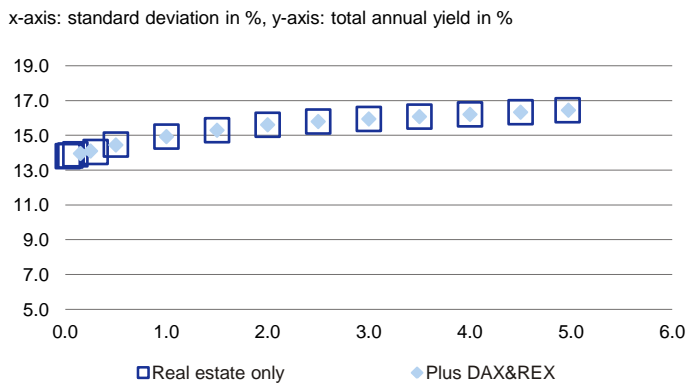
Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters



Focus Germany

2008-2013: Efficient frontiers of real estate portfolios with and without DAX and REX

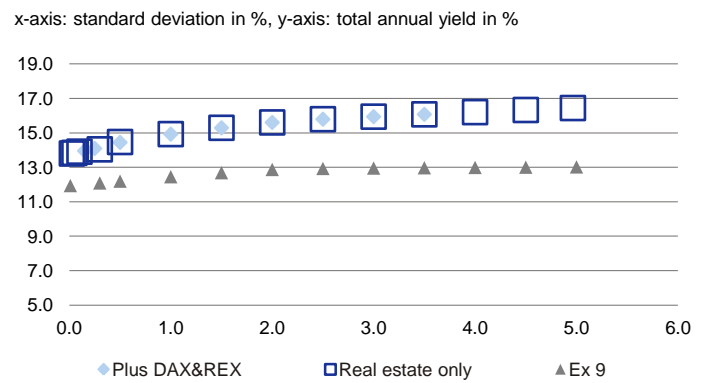
18



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

2008-2013: Efficient frontiers of real estate portfolios with and without DAX and REX

19



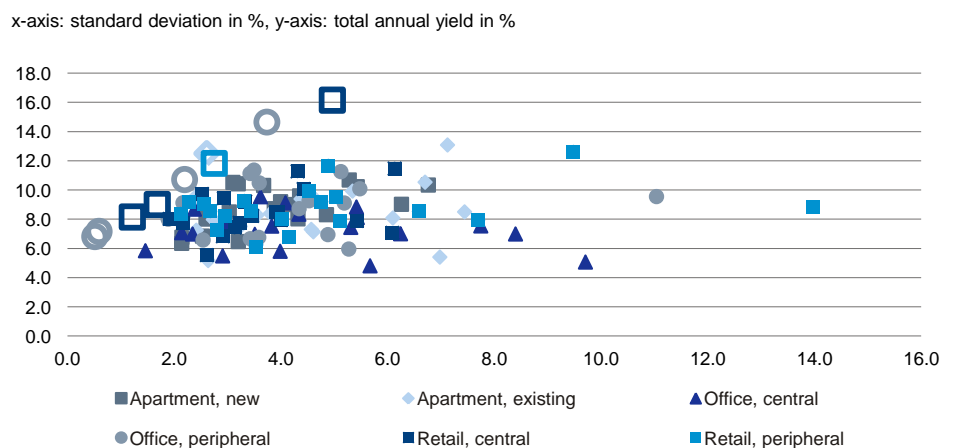
Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

How robust are our results?

The fact that the financial market indices do not improve the “2008 to 2013” portfolio is a consequence of the Lehman shock. But portfolio analysis even of a “2009 to 2013” sample does not change the efficient frontier. The “2009 to 2013” DAX total annual yield is still below the yields in the real estate market, and the REX total annual yield even declines relative to the “2008 to 2013” sample. However, as chart 14 shows, in normal times financial market indices improve the efficient frontier of multi-asset portfolios. We also repeat the portfolio analysis for the “2008 to 2013” sample by excluding nine series, called the “ex 9” sample, which are close to the efficient frontier (highlighted by extra-big markers in chart 20). The efficient frontier of the “ex 9” sample declines by around 2 pp. Once again, the DAX and the REX are not part of the optimal portfolio. To guarantee the robustness of our results, we repeatedly perform the maximisation process to exclude the possibility that we only find a local maximum and no global maxima. All these results confirm the robustness of our findings that the efficient frontier of the “2008 to 2013” sample clearly moved to the north-west relative to the “1991 to 2007” sample.

2008-2013: Risk-return portfolio of A and B cities - asset classes: apartment (new vs existing), retail and office (central vs peripheral)

20



Sources: BulwienGesa, Deutsche Bank Research



## Portfolio weights

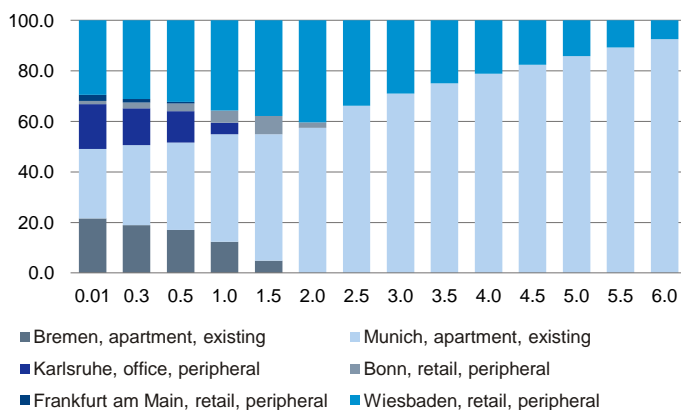
The efficient portfolio of the “2008 to 2013” sample and of the “ex 9” sample contains both six cities and several asset classes (charts 21, 22). Actually the number of asset classes is much larger but in the following we only depict assets and cities which have a portfolio share of at least 1%. This seems a natural choice in a real estate portfolio as transaction costs and minimal batch size directly restrict the number of small purchases. It also explains that portfolio shares do not always add up to 100% as the number of assets strongly increases in low-risk portfolios.

Given the strong performance of the residential market it is no surprise that the efficient frontier contains large portfolio weights in existing apartments. In the “ex 9” portfolio the existing apartments in Munich even dominate the efficient frontier at higher standard deviations. It might be surprising that existing apartments in Bremen are part of the efficient portfolio (both “2008 to 2013” and “ex 9”) and that an office-retail mix, i.e. Bonn (retail, central) and Münster (office, peripheral), are part of the “2008 to 2013” efficient portfolio. Likewise, a retail investment in a peripheral location in Wiesbaden offers the best risk-return fit for an existing apartment in Munich in the “ex 9” efficient portfolio.

2008 to 2013 optimal portfolio weights ex outliers

21

y-axis: % of portfolio share  
x-axis: standard deviation of efficient frontier in %

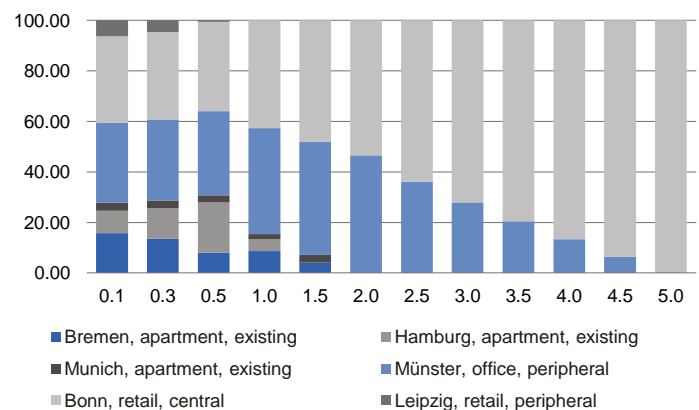


Sources: Deutsche Bank Research, BulwienGesa,

2008 to 2013 optimal portfolio weights

22

y-axis: % of portfolio share  
x-axis: standard deviation of efficient frontier in %



Sources: Deutsche Bank Research, BulwienGesa

## Scenario 2014-2019

We note all these ex-post considerations explain what investors should have done in the past to optimise their portfolio. Finally, we look ahead and provide scenarios (no forecasts) to give investors some guidance on what could potentially happen in the next five years. We assume that the German commercial real estate market offers the same average yield and volatility we saw during the last five years. By contrast, we assume a less dynamic scenario for the residential market as the ruling grand coalition is currently negotiating stricter rent controls. While we await the details, we simply assume that total yields of existing apartments are halved relative to the 2008 to 2013 period. Then, in a second scenario we add the same assumption (halved yields) for new apartments.

For both scenarios, the efficient frontier changes only slightly and again neither the DAX nor the REX is part of the efficient frontier (where we assume the 2008 to 2013 performance), so again this is a fairly robust outcome. Only at the low

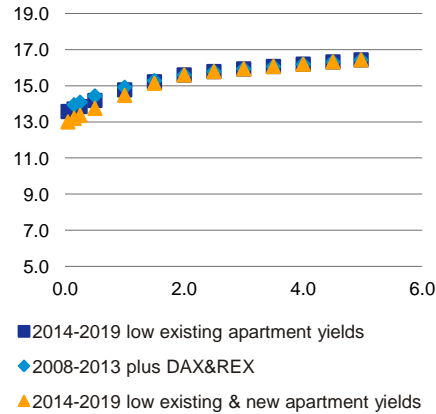


Focus Germany

Efficient frontiers

23

x-axis: standard deviation in %  
y-axis: total annual yield in %



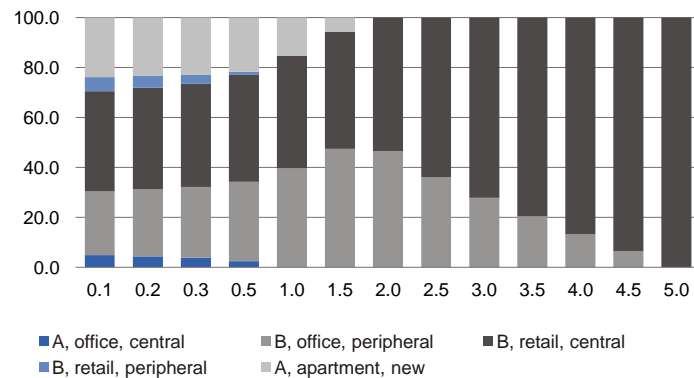
Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

standard deviations of the “2014 to 2019” efficient frontier do yields drop by roughly half a percentage point in the first scenario and one percentage point in the second scenario relative to the 2008 to 2013 period (chart 23). The efficient frontier in both scenarios is dominated by offices in peripheral locations in B cities and retail investments in central locations in A cities (chart 24). Both asset classes are already part of the efficient frontier in the last five years. In the first scenario, with low yields of existing apartments, new apartments remain part of the efficient frontier for low standard deviations. In our second scenario, investments in new apartments do not improve the efficient frontier. As a result, the portfolio share of offices in peripheral locations in B cities strongly increase for low-risk portfolios relative to the first scenario (chart 25). The outcome shows that the German commercial real estate market could be an interesting alternative if stricter rent control were to reduce residential yields.

2014-19 Portfolio with DAX and REX but with low yields for existing apartments: efficient frontier

24

y-axis: portfolio share in %  
x-axis: standard deviation of efficient frontier in %

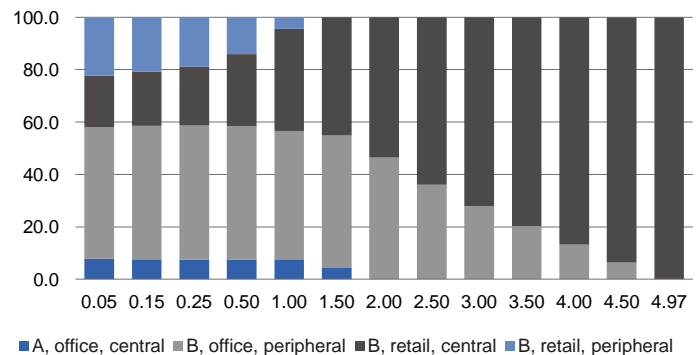


Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

2014-19 Portfolio with DAX and REX but with low yields for new & existing apartments: efficient frontier

25

y-axis: portfolio share in %  
x-axis: standard deviation of efficient frontier in %



Sources: Deutsche Bank Research, BulwienGesa, Thomson Reuters

Conclusion

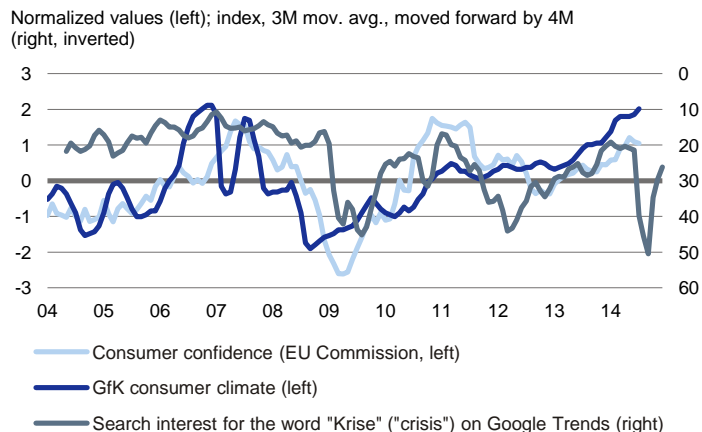
Based on city data we show the very low correlation of real estate investments with Germany’s major financial market indices. Therefore, real estate markets are always attractive in German portfolios. In the last few years, the outperformance of the real estate market makes them even more interesting. We showed that B cities, even cities which are not in the focus of investors and are a mix across apartments, retail and office, can improve portfolio performance. Neither the DAX nor the REX improved the efficient frontier in the last five years. If stricter rent controls are implemented and apartment yields decline, the commercial market may be an attractive alternative for German portfolios.

Jochen Möbert (+49 69 910-31727, jochen.moebert@db.com)



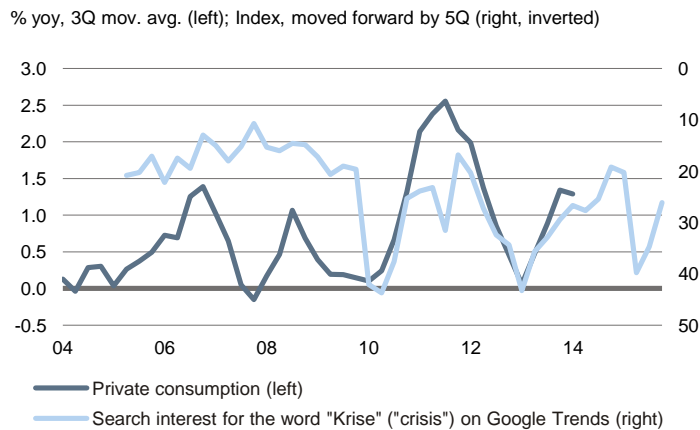
## Chart of the month

Crisis (fears) and consumer confidence



Sources: GfK, EU Commission, Google, Deutsche Bank Research

Crisis (fears) and private consumption



Sources: Federal Statistical Office, Google, Deutsche Bank Research

### What crisis? German consumers largely unfazed

In the text on German GDP growth in this issue of Focus Germany we have explained that geopolitical risks (together with more muted export expectations) are likely to weigh on the previously expected investment recovery in H2. A similar argument could be made for private consumption: will geopolitical risks undermine consumer confidence and even leave their mark on consumption spending?

Our chosen crisis indicator – search frequency for the German word “Krise” (“crisis”) on Google – has a much lower correlation with consumer confidence compared to its correlation with domestic investment goods orders (correlation: -0.6). Since 2004, the correlation with the EU Commission’s consumer confidence for Germany stands at only -0.3 with a four month lead. For the GfK consumer confidence, it is an even lower -0.1. However, as the right hand chart shows, the indicator’s correlation with private consumption growth has been remarkably high since 2010 with a considerable lead of five quarters that might be explained by the fact that the uncertainty and crisis effects have an indirect impact via the labour market. Over the whole time for which we have the Google data the correlation drops from -0.8 to 0. The large discrepancy pre- and post-2010 should be connected to the “quality” of the prevailing crises. For instance, the financial crisis and later the Euro crisis are likely to have had a more direct and, given the size of the affected geographic area, a more pronounced impact on, for example, wages and employment compared to the more diffuse risks for Germany associated with the more local Ukrainian crisis. In 2004 to 2008 (earlier search data not available) marked crises were absent and, thus, the correlation with consumption was near zero.

In addition, the correlation of consumption (growth) with income developments is much closer than with consumer confidence. As a result, the outlook for consumption remains fundamentally positive as long as the labour market situation remains good – which we expect – even if consumer confidence were to take a hit. Furthermore, the crisis fears have moderated again lately according to the indicator. All told, the implications of the geopolitical risks for private consumption in Germany look limited at the current juncture.

Oliver Rakau (+49 69 910-31875, [oliver.rakau@db.com](mailto:oliver.rakau@db.com))



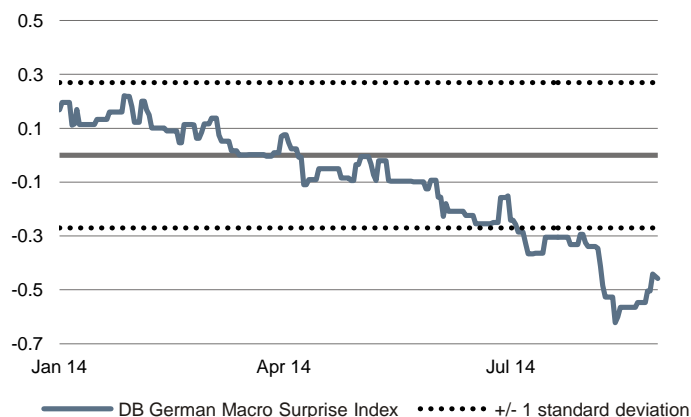


Focus Germany

DB German Macro Surprise Index<sup>19</sup>

DB German Macro Surprise Index

Average of last 20 z-scores of data surprises

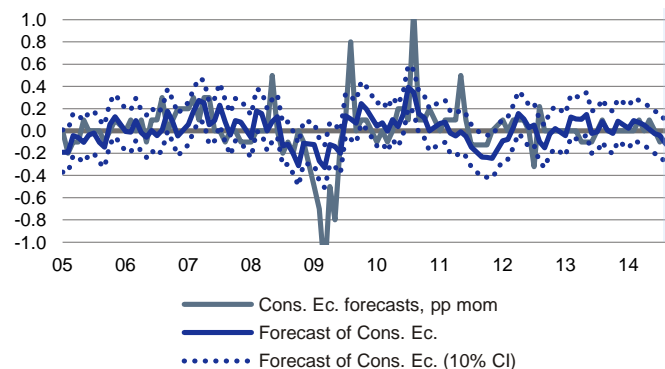


Values above (below) 0 indicate the data came in better (worse) than expected

Sources: Bloomberg Finance LP, Deutsche Bank Research

DB German Macro Surprise Index: Downside-risks for GDP forecasts

Monthly revisions of Consensus Economic Forecasts (pp); Average of previous 20 z-scores



CI: 10% Confidence Intervall

Sources: Consensus Economics Inc., 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
GRIFPBUS Index	IFO Business Climate	7 2014	25.07.14	108.0	109.4	-1.4	-1.2	0.1
GRIMP95Y Index	Import Price Index (% yoy)	6 2014	29.07.14	-1.2	-1.2	0.0	0.4	0.7
GRUECHNG Index	Unemployment Change (000's mom)	7 2014	31.07.14	-11.0	-5.0	6.0	0.0	0.5
GRFRIAMM Index	Retail Sales (% mom)	6 2014	31.07.14	1.0	1.0	0.0	0.3	0.6
MPMIDEMA Index	Markit Manufacturing PMI	7 2014	01.08.14	52.4	52.9	-0.5	-0.8	0.1
MPMIDESA Index	Markit Services PMI	7 2014	05.08.14	56.7	56.6	0.1	0.1	0.6
GRIORTMM Index	Factory Orders (% mom)	6 2014	06.08.14	-3.2	0.9	-4.1	-1.9	0.0
GRIPIMOM Index	Industrial production (% mom)	6 2014	07.08.14	0.3	1.2	-0.9	-0.7	0.2
GRCAEU Index	Current Account Balance (EUR bn)	6 2014	08.08.14	15.0	18.5	-3.5	-1.5	0.1
GRZEWI Index	ZEW Survey Expectations	8 2014	12.08.14	8.6	17.0	-8.4	-1.0	0.1
GRZECURR Index	ZEW Survey Current Situation	8 2014	12.08.14	44.3	54.0	-9.7	-1.5	0.0
GRCP20YY Index	CPI (% yoy)	7 2014	13.08.14	0.8	0.8	0.0	0.3	0.4
GRGDPPGQ Index	GDP (% qoq)	6 2014	14.08.14	-0.2	-0.2	0.0	-0.1	0.4
MPMIDEMA Index	Markit Manufacturing PMI	8 2014	21.08.14	52.0	52.0	0.0	0.0	0.4
MPMIDESA Index	Markit Services PMI	8 2014	21.08.14	56.4	56.4	0.0	0.0	0.5
GRIFPBUS Index	IFO Business Climate	8 2014	25.08.14	106.3	107.0	-0.7	-0.7	0.2
GRIMP95Y Index	Import Price Index (% yoy)	7 2014	27.08.14	-1.7	-1.4	-0.3	0.1	0.5
GRCP20YY Index	CPI (% yoy)	8 2014	28.08.14	0.8	0.8	0.0	0.3	0.4
GRUECHNG Index	Unemployment Change (000's mom)	8 2014	28.08.14	2.0	-5.0	-7.0	-0.5	0.3
GRFRIAMM Index	Retail Sales (% mom)	7 2014	29.08.14	-1.4	0.1	-1.5	-0.9	0.1

Sources: Bloomberg Finance LP, Deutsche Bank Research

Heiko Peters (+49 69 910-21548, heiko.peters@db.com)

<sup>19</sup> See for details Focus Germany. August, 4 2014.

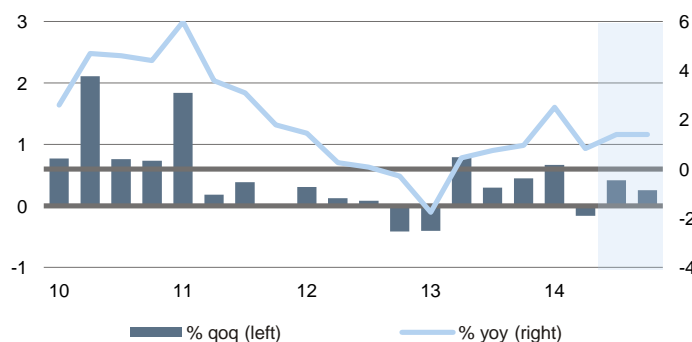


Focus Germany

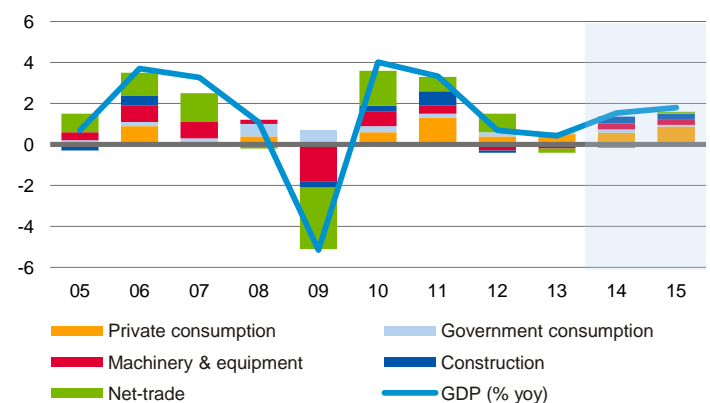
Chartbook – Total economy

- At -0.2% qoq Q2 2014 GDP growth showed a much bigger payback for the strong Q1 (-0.7%) than expected. This distinctive quarterly profile is – mostly but not only – due to the mild winter that boosted Q1 construction (+4.1%). With the usual spring acceleration not materialising the seasonal adjustment caused a big decline in Q2 (-4.2%). Private consumption corrected after its Q1 surge (+0.1% qoq vs. +0.8%), which was probably in part due to a lump-sum payment in the large retail sector in January. In H1 domestic demand was the only contributor to growth. In contrast, net exports were a drag in Q1 and Q2 (each -0.2pp).
- Growth prospects for H2 2014 have become increasingly clouded in the last few months. A not insignificant part of the disappointing hard data is explained by the construction sector's seasonal gyrations and bridge day effects (industrial production in May). New orders – less impacted by these effects – also declined substantially; especially investment goods orders saw declines. Companies probably reacted to the geopolitical risks and the uncertainty over future demand associated with it. Given only moderate capacity utilisation levels companies can often easily postpone these orders. Increased sanctions against Russia and possible counter-sanctions are set to in part offset the positive impetus coming from other regions of the world.
- This is not least reflected in sentiment data. For instance, ifo expectations were down in five of the last six months. A development that is largely due to a weaker assessment in the export dependent manufacturing sector. Export expectations have fallen below their historic average again. A comparable picture is shown by the manufacturing PMI that is only modestly above the growth threshold. In contrast, the retail and construction ifo and the services PMIs remained elevated supporting our expectations that growth will continue to be driven by the domestic economy in H2.
- Given this background we have recently lowered our growth assumptions slightly for Q3 (now +0.4% qoq) and Q4 (+0.3%). This brought the full year forecast from 1.8% growth to 1.5% – the same rate as in early 2014.

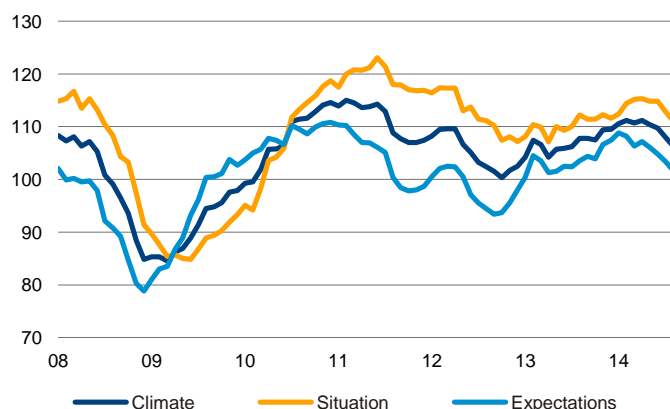
Real GDP growth



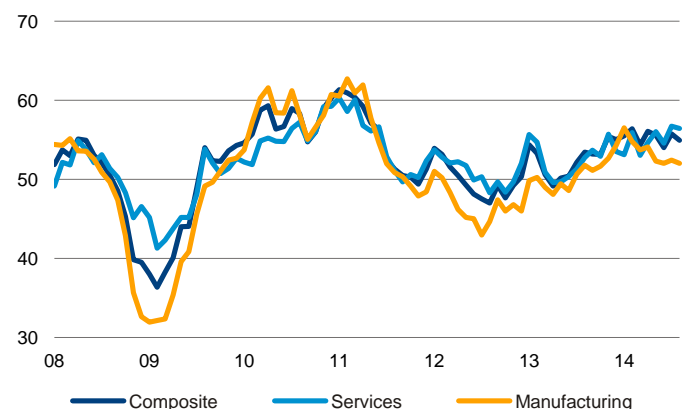
Contribution to real GDP growth (%-points)



ifo index - total economy (2005=100)



Purchasing manager index



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



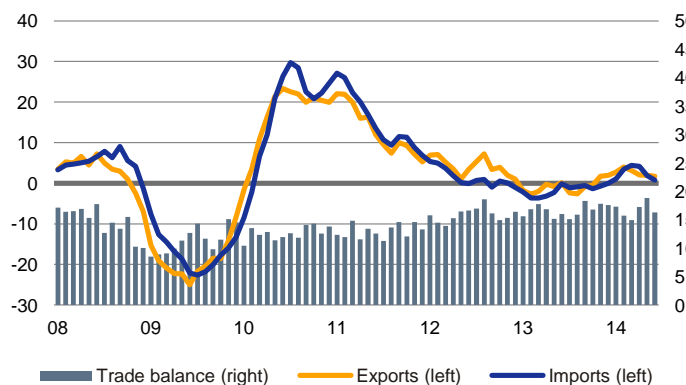
Focus Germany

Chartbook – Foreign trade

- Foreign trade that had started to accelerate in mid-2013 has lost momentum lately. Exports were up 1.7% yoy in June (all 3M mov. avg.). In February it was still up nearly 4%. Imports slowed, too, to 0.8% yoy, which was helped by falling commodity prices. The trade balance surplus fell back to EUR 16.6 bn in June, after enjoying an all-time high in May (EUR 19 bn)
- The loss in momentum is especially obvious in German exports to EMU (Jan +3.2% yoy, May +2.2% yoy, 3M mov. avg.) with their share of nearly 40%. Exports to Asia (Jan +4.6%; May +4.1%) and the US (5.7% vs. 6.8% in January) have slowed, too.
- It is foremost the recovery in automobile exports (May: +5.3% yoy) that drives the – albeit moderate – increase in exports. Especially as the European car market is experiencing pent-up demand after years of restraint domestic demand. By contrast, the other German export engine, mechanical engineering, was stuttering (-2.5% yoy). Foreign demand in the metal industry (-6.0% yoy) remained weak.
- Leading indicators paint a mixed picture for exports. Ifo export expectations and PMI new export orders currently point to muted export demand growth at best. Still, we expect an accelerating of the global economy over the course of the year thanks to a rebound of the US economy, gradually accelerating Chinese growth accompanied by continuation of the weak and fragile EMU recovery.

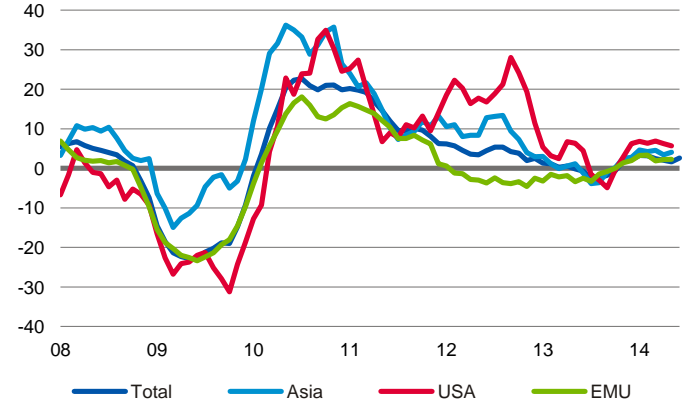
Merchandise trade

% yoy, 3M mov. avg. (left); EUR, bn (right)



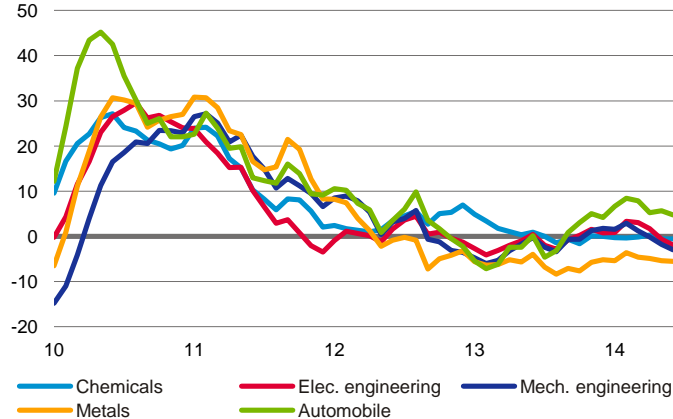
German exports by region

% yoy, 3M mov. avg.



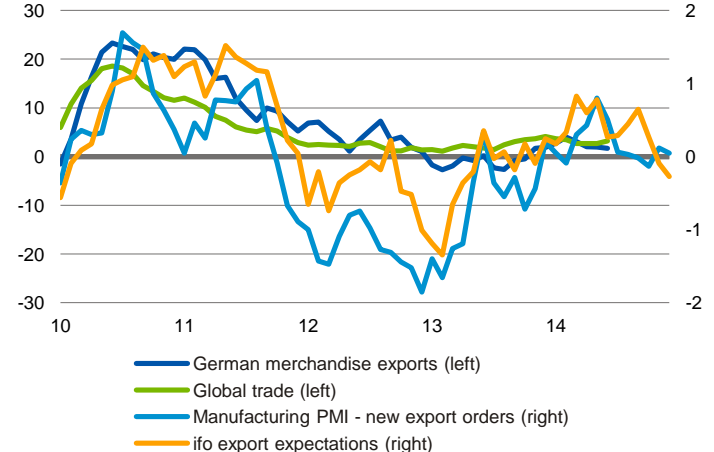
Exports by sector

% yoy, 3M mov. avg.



Exports and early indicators

% yoy, 3M mov. avg. (left); Standardized values (right, 4M lead)



Sources: Federal Statistical Office, Markit, ifo, Deutsche Bank Research, CPB

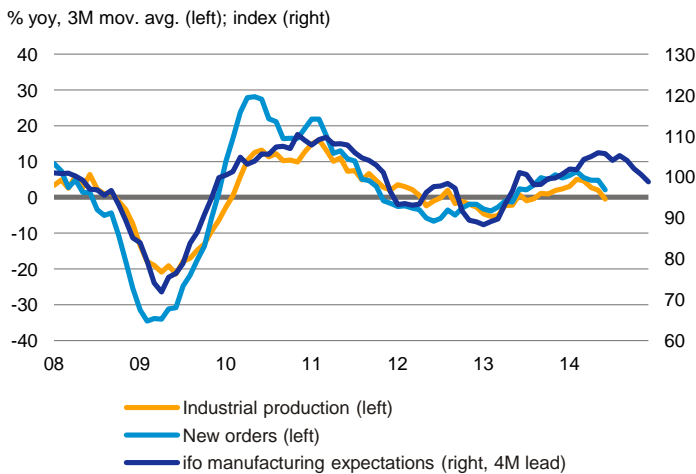


Focus Germany

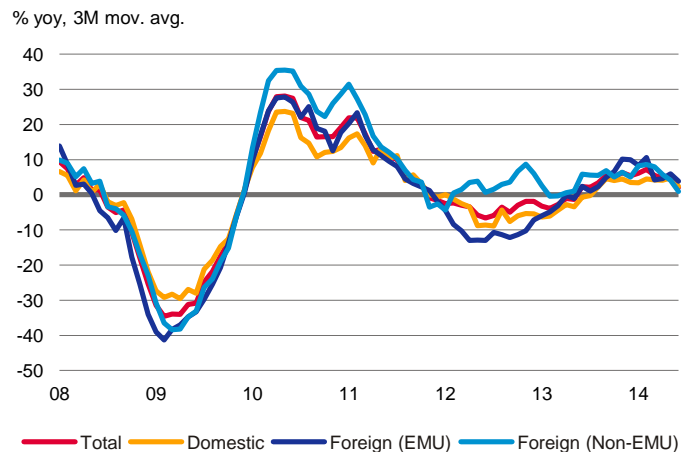
Chartbook – Industry

- Industrial production growth has materially weakened lately (June: -0.5% yoy; January +3.1%; 3M mov. avg.) just like exports have. The normalisation in the construction sector has weighed on overall production growth in Q2. In addition, production of intermediate and investment goods has seen the imprint of recent geo-political uncertainties.
- The ifo index and the PMIs for the manufacturing sector have fallen further in the last few months and suggest that industrial growth should be weak in H2 with some downside risks.
- Due to the recent disappointing performance of German industry, we have revised our production forecast for the year 2014 from +4% to +2.5%. The large industrial sectors are characterised by a heterogeneous development in 2014. The automobile industry should achieve the highest growth rate in 2014. We expect an increase of 5% in real terms. An important driver behind this is the recovering car demand in Western Europe, where German manufactures have a market share of about 50%. Production in the mechanical engineering industry is likely to stagnate at best. More than others, the sector feels the consequences of the Ukraine crisis. The crisis has also dampened business sentiment in Germany which negatively affects propensity to invest. Domestic production in the electrical engineering industry and the metal industry could grow 3%. The chemical sector, however, could see domestic production decline by 2% after disappointing results in the first half of 2014. The food industry – a very stable sector as it is – could see production stagnating in 2014. In 2015, manufacturing output in Germany should expand by about 2% in real terms.

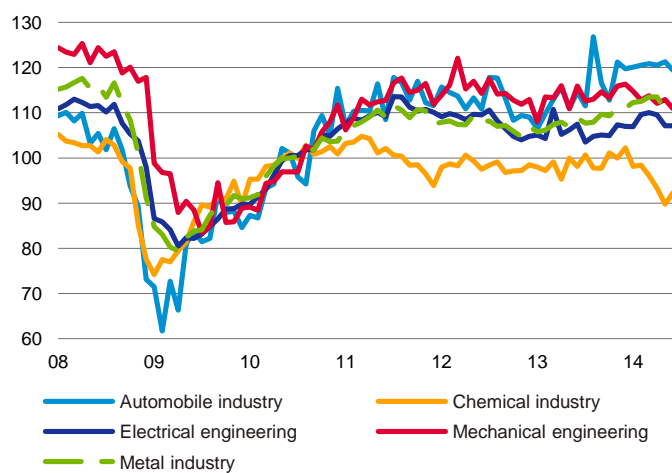
Industrial production, new orders & ifo expectations



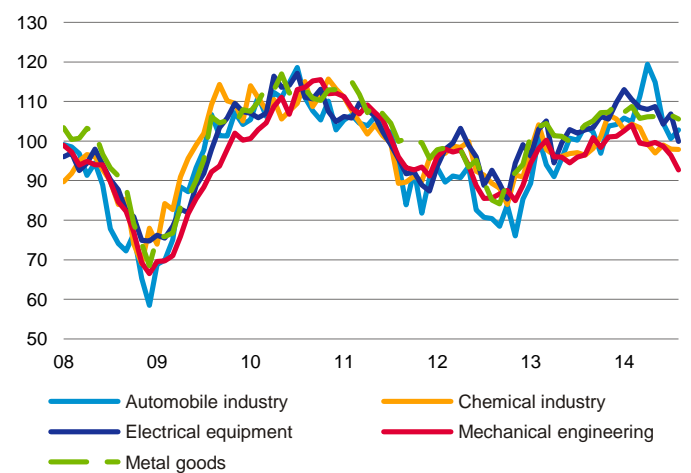
New manufacturing orders by region



Production of largest industrial sectors (2010=100, sa)



ifo business expectations of the largest industrial sectors (2005=100)



Sources: Federal Statistical Office, ifo

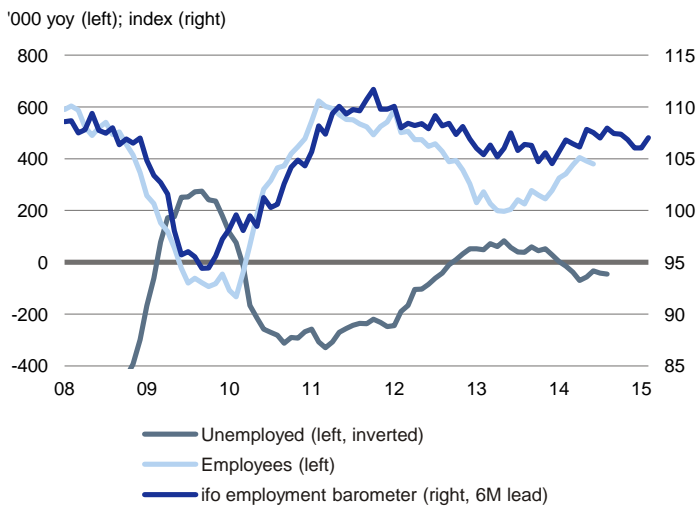


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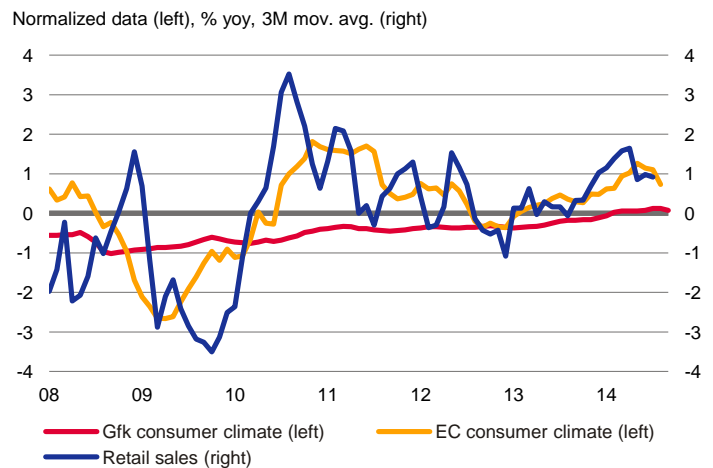
Chartbook – Domestic economy

- In August unemployment rose by 2k mom after it had fallen by 12k in July. The increase of unemployment by a total of 30k in the two months before that, thus, really seems to have been due to lack of a spring recovery a result of the mild winter. In the first 8 months of the year unemployment fell by 7k on average. Thanks to strong immigration flows and rising participation employment rose by a much stronger 37k on average. Early indicators suggest a modestly positive development over the next few months. The unemployment rate should fall to 6.6% from 6.9%.
- Retail sales were up 0.7% yoy in July (3M mov. avg.). Sales growth weakened somewhat over the last few months. The assessment of the business cycle in the consumer climate weakened markedly in August. This is probably the result of the geopolitical risks but it might overstate short term risk to consumption growth, given positive income dynamics.
- After weakness in 2013 investment in M&E and construction spending should pick up again this year. Investment in M&E was strong in Q1. However, domestic investment goods orders and capacity utilization currently do not point to a further acceleration in the remainder of 2014. Investment in M&E should still rise by a good 4% (2013: -2.7%).
- The construction sector benefits from high net immigration and rising disposable income propelling housing demand. Construction activity (June: +6.1% yoy, 3M mov. avg.) and orders (+2.3%) are markedly higher than last year despite weakening in June. Construction spending could grow by a good 3% in real terms in 2014 (2013: -0.1%).

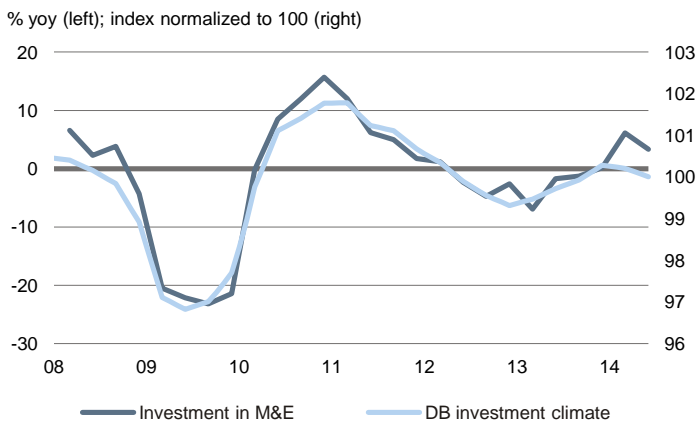
Unemployment barometer, employment and unemployment



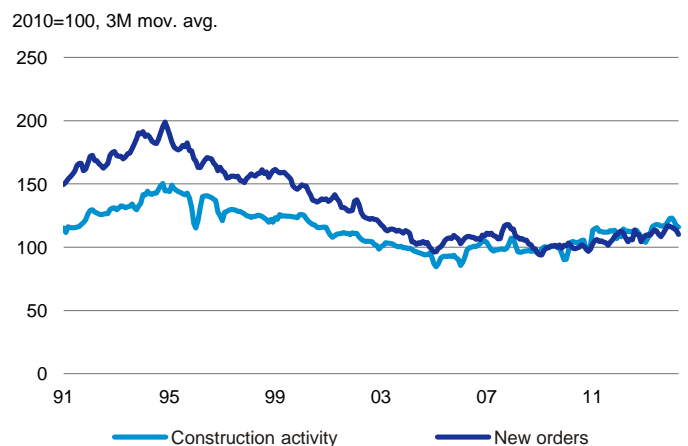
Retail sales and consumer confidence



Investment in machinery & equipment and DB investment climate



Construction activity and new orders



Sources: Federal Statistical Office, Deutsche Bank Research, Gfk, EU Commission, ifo

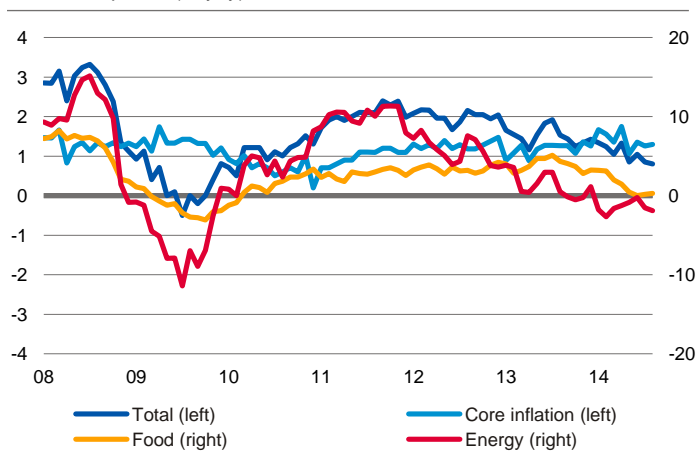


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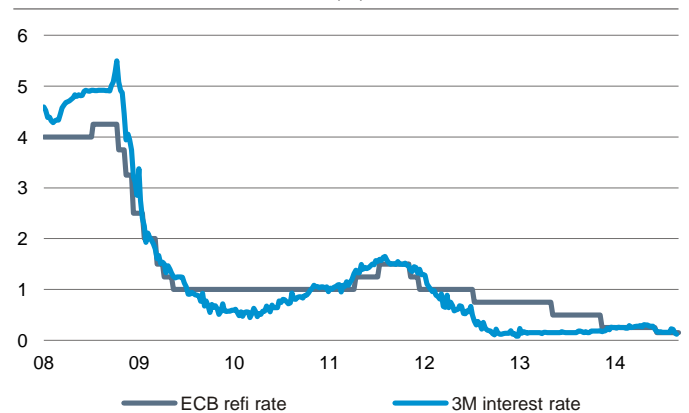
Chartbook – Financial markets

- Inflation stood at 0.8% in July and August. Thus, the downward trend seems to have been stopped for now. In the last two months a small increase in food prices (August: +0.3% yoy, +0.1% prev.) has roughly compensated for the stronger fall in energy prices (-1.9% yoy vs. -1.5% prev.). Core inflation likely remained unchanged in August (1.3%) after some volatility earlier in the year. While the downtrend in oil prices is set to dampen energy inflation, the food producers' price expectations suggest that food inflation could pick up further in the coming months. Russia's import ban could weigh on food prices in Europe, though, given increased supply.
- The ECB introduced a broad based package of easing measures last month. The refi rate was lowered to 0.15% and the deposit rate to -0.1% – the first negative rate ever. In addition, the full allotment was prolonged, the sterilisation of the SMP program stopped, preparations for a private bond purchase program (ABS) intensified and a targeted LTRO announced. This is supposed to secure banks' access to liquidity for the foreseeable future, keep short-term interest rates low and stimulate lending. While the package is big, we do not believe that it will provide a decisive boost. Thus, a private asset purchase program is expected to be launched in the remainder of 2014.
- Since the start of 2014 10Y US treasury yields fell from 3% to below 2.4% recently. This was caused by uncertainty about the strength of the US recovery, the dampened inflation environment and dovish Fed-comments. Despite some signs of rising inflation Fed chief Yellen remained cautious with remarks on the Fed's first rate hike. Given diverging interest rates and growth expectations for EMU and the US, the yield spread between 10Y US treasuries and German Bunds has widened further to about 150pp as of late. In contrast, an improved economic outlook and continued policy accommodation have lowered the peripheral's spread vs. Germany to below 150bp (mid-2013: around 3pp).
- While the market implied inflation expectations fell further lately, the professional forecasters surveyed by the ECB slightly increased their expectations.

Consumer prices (% yoy)



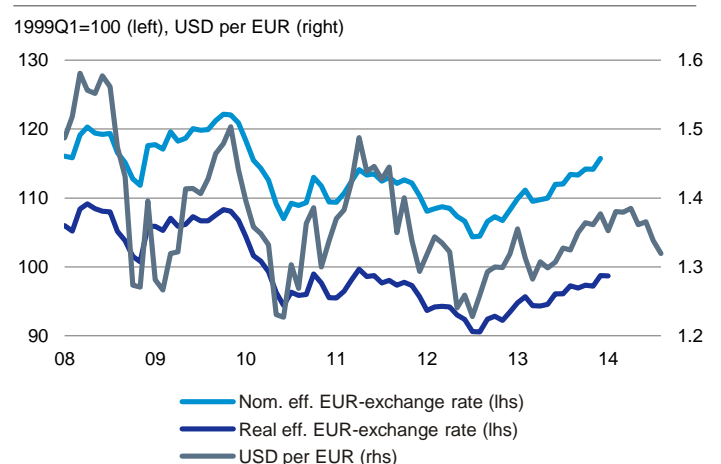
EMU: Refi rate & 3M interest rate (%)



10Y government bond yields (%)



Exchange rate development for the EUR



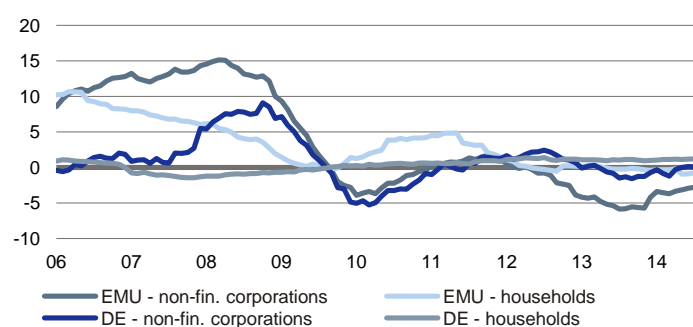
Sources: Federal Statistical Office, ECB, EU Commission, Global Insight, Reuters, Deutsche Bank Research



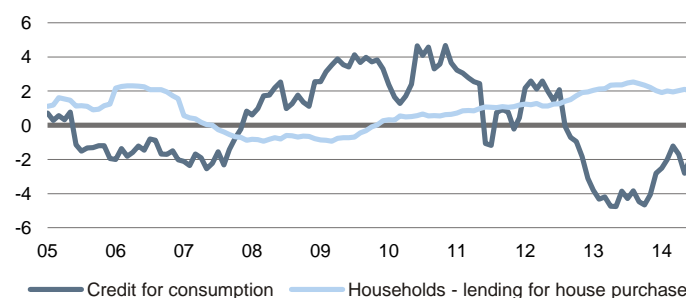
Chartbook – Lending

- Lending to corporates remained weak in 2013 with the declines being more pronounced in the Eurozone than in Germany. While reductions in Germany reflect a mix of modest investment activity and firms' use of alternative means of financing, the drop in the Eurozone is to a large extent the result of ongoing deleveraging processes. During 2014, shrinking processes have become somewhat less pronounced in the Eurozone. With -2.8% yoy, July records the smallest reduction since the start of the year. Also, recent Bank Lending Survey results for the Eurozone show increasing net demand for corporate credit and the first net easing of credit conditions since Q2 2007. Credit to corporates in Germany shows signs of stabilization in Q2 with mustering marginal yoy increase (+0.1% yoy).
- Household deleveraging in the Eurozone continues weighing on new borrowing (July: -0.8% yoy). By contrast, lending to households in Germany continues to rise (July: +1.2%), which is rather modest given the backdrop of strong consumer confidence and record low interest rates.
- The moderate credit growth in Germany is solely driven by mortgage lending. July +2% yoy and is in line with developments in the first half of the year. Given the low level for mortgage rates (June 2.6%), credit growth remains rather modest, which partly reflects portfolio shifts by households and local supply shortages. Consumer credit remained restrained (July: -1.8% yoy) also reflecting rising incomes reducing the need to finance consumption via credit for many households.
- With benchmark rates remaining historically low, favourable interest rates for German companies persist. Interest rates for corporate credit decreased by 9 bps to about 3% in June.
- Improvement in credit conditions for German corporates gains pace: in August, only 20.9% of construction companies (down from 22.7% in July) and some 17.8% of companies from industry and trade (down from 18.2% in July) report restrictive access to credit. Most recent results from the German bank lending survey suggest that credit standards for loans to enterprises have remained unchanged in Q2. Net loan demand of enterprises on the other hand increased somewhat with 3%. On balance, alternative financing options of enterprises continued to hold back corporate loan demand though to a lower extent. Looking forward, for the third quarter of 2014 German banks expect significant net easing of credit conditions to enterprises.

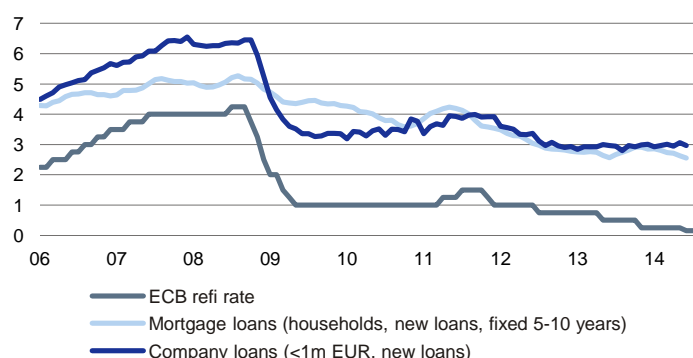
Lending to the private sector (% yoy)



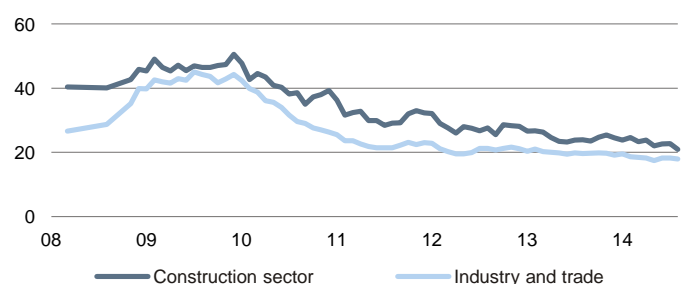
Loans to households (% yoy)



Interest rates (%)



Companies' view on access to credit



Credit constraints: Percentage of companies reporting restrictive access to credit. Higher values indicate more restrictive access to credit from companies' perspective.

Sources: ECB, ifo, Deutsche Bank Research

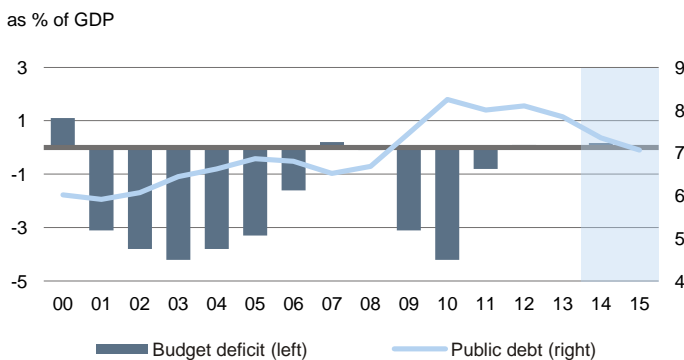


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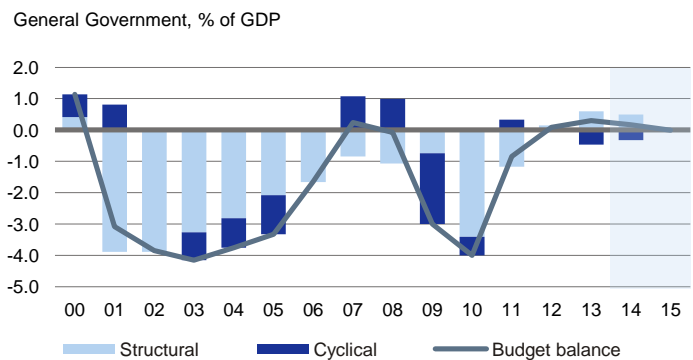
Chartbook – Public finances

- In 2013, Germany was the only eurozone country – apart from Luxembourg – without a budget deficit. But the federal and Länder governments (in total) still report deficits. The general budget only edged into black figures thanks to the municipalities and social-security surpluses. Budgets for 2014 and 2015 are also projected to close with small surpluses.
- The German public debt ratio stood at 77.3% of GDP at the end of Q1 2014 (Q4 2013: 78.4%). The positive development reflects the small surplus in 2013 due to growing revenues. In addition, refinancing costs continue to remain low (the yield of 10-year Bunds was only 1.16% by the end of July). General government debt in Germany is set to decline further during the next few years, despite weaker growth dynamics. The fact that the bad banks continue to run down their portfolios will alone cut debt by 0.5% of GDP annually. Moderate growth outstripping economic potential will also help lower the debt-to-GDP ratio. In addition, there is a statistical effect due to the new European System of Accounts (ESA) 2010. As GDP will be higher with the new method, debt as a percentage of GDP is lower by around 2 percentage points in the case of Germany.
- In July, total tax revenues climbed by 3.3% yoy. From January until July, total tax revenues were about 2.6% higher than in the same period a year earlier. Especially the wage tax (as the main component of income tax) is still growing at a solid pace (+7.3% yoy). However, on a cumulative basis, the other components of income tax – especially the highly profit-dependent taxes like the corporate tax, the final withholding tax on interest income and the non-assessed tax on earnings (which largely equals the withholding tax on dividends) – lie well below the same period last year.
- The regional elections in Saxony (August 31) resulted in the expected victory of the CDU (39.4%), followed by the Left Party (18.9%) and the SPD (12.4%). However, the Saxonian Prime Minister Tillich will have to form a new government as his coalition partner FDP failed to reach the necessary 5%. The most likely outcome is a grand coalition with the SPD, but also a coalition with the Greens is possible. The anti-Euro party Alternative für Deutschland (AfD) gained 9.7% and was for the first time voted into a regional parliament. Saxony has already been an AfD stronghold in the European elections when it gained 10.1% compared to 7.1% in Germany as a whole. In the upcoming elections in Brandenburg and Thuringia on September 14 the AfD will most likely also be able to cross the 5% threshold.

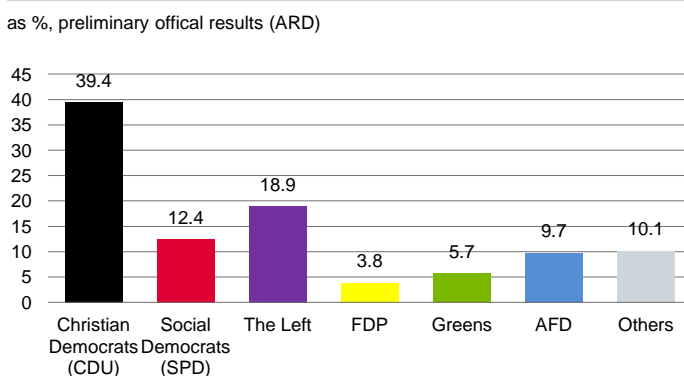
Public debt and public deficit



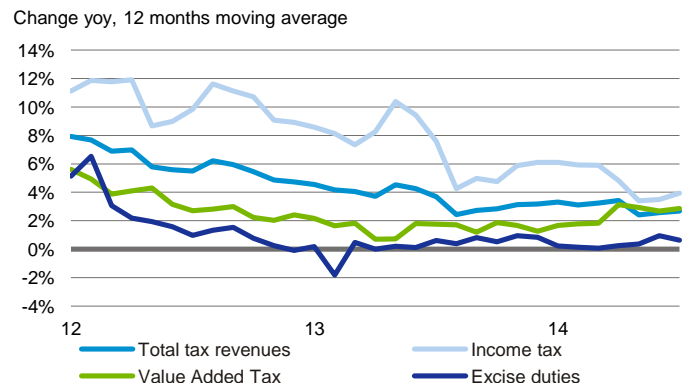
Budget balance



State elections in Saxony 2014



Development of important taxes



Sources: Deutsche Bank Research, European Commission, Bundesbank





## Focus Germany

### Germany: Events of economic-, fiscal- and euro-politics

Date	Event	Remarks
4 Sep	Meeting of the ECB Council, press conference	Review of the monetary policy stance.
11/12 Sep	Meeting of the ASEM Finance Ministers, Milan	Finance Ministers from 52 European and Asian states will debate on economic relations and prepare the ASEM summit on 16/17 Oct.
12/13 Sep	Eurogroup and informal ECOFIN, Milan	Stability developments in the euro area; economic outlook for 2014-2015; Greece and Cyprus adjustment programmes – 5th review; Banking Union.
14 Sep	State elections in Brandenburg and Thuringia	In Thuringia a renewed CDU/SPD coalition is likely. However, the SPD has not yet ruled out a coalition with the Left party. In Brandenburg we expect a renewed coalition between the SPD and the Left party.
20/21 Sep	Meeting of the G20 Finance Ministers and Central Bank Governors, Cairns/Australia	Debates on fiscal and monetary policy (measures to boost investment, trade and employment), on financial regulation (e.g. shadow banking), and tax (tax avoidance and tax transparency).
October	ECB comprehensive bank assessment results	ECB due to publish the results of the comprehensive assessment of around 130 largest euro area banks, comprising an asset quality review and stress test. Banks facing a shortfall will be requested to submit capital plans within two weeks, which will then be evaluated by the SSM.
13/14 Oct	Eurogroup and ECOFIN, Luxembourg	Discussion and review of the fiscal stance of Euro area countries against the need for public investment.
23/24 Oct	European Council	EU leaders meet in Brussels – official agenda tbd.

Source: Deutsche Bank Research

Dieter Bräuninger (+49 69 910-31708, dieter.braeuninger@db.com)

Nicolaus Heinen (+49 69 910-31713, nicolaus.heinen@db.com)



## Focus Germany

### Germany: Data calendar

Date	Time	Data	Reporting period	DB forecast	Last value
4 Sep 2014	8:00	New orders manufacturing (Index, sa), pch mom	July	5.0	-3.2
5 Sep 2014	8:00	Industrial production (Index, sa), pch mom	July	1.5	0.3
8 Sep 2014	8:00	Trade balance (EUR bn, sa)	July	15.0	16.3
8 Sep 2014	8:00	Merchandise exports (EUR bn, sa), pch mom (yoy)	July	-1.7 (1.9)	0.9 (2.9)
8 Sep 2014	8:00	Merchandise imports (EUR bn, sa), pch mom (yoy)	June	-0.5 (2.4)	4.5 (3.1)
23 Sep 2014	9:30	Manufacturing PMI (Flash)	September	51.0	51.4
23 Sep 2014	9:30	Services PMI (Flash)	September	56.0	56.4
24 Sep 2014	10:30	ifo business climate (Index, sa)	September	105.0	106.3
29 Sep 2014	14:00	Consumer prices preliminary (Index, sa), pch mom (yoy)	September	0.0 (0.8)	-0.1 (0.8)
30 Sep 2014	10:00	Unemployment rate (% , sa)	September	6.7	6.7
30 Sep 2014	8:00	Import prices (Index, sa) pch mom (yoy)	August	0.0 (-1.8)	-0.4 (-1.7)
30 Sep 2014	8:00	Retail sales (Index, sa), pch mom	August	1.5	-1.4
14 Nov 2014	8:00	Real GDP (Index, sa), % qoq	Q3 2014	0.4	-0.2

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

### Financial forecasts

	US	JP	EMU	GB	CH	SE	DK	NO	PL	HU	CZ
<b>Key interest rate, %</b>											
Current	0.125	0.10	0.15	0.50	0.00	0.25	0.20	1.50	2.50	2.10	0.05
Sep 14	0.125	0.10	0.15	0.50	0.00	0.25	0.20	1.50	2.50	2.10	0.05
Dec 14	0.125	0.10	0.15	0.75	0.00	0.25	0.20	1.50	2.50	2.10	0.05
Jun 15	0.500	0.10	0.15	1.00	0.00	0.25	0.20	1.50	2.50	2.50	0.05
<b>3M interest rates, %</b>											
Current	0.23	0.21	0.16	0.56							
Sep 14	0.35	0.20	0.20	0.55							
Dec 14	0.35	0.20	0.20	0.80							
Jun 15	0.75	0.20	0.25	1.10							
<b>10Y government bonds yields, %</b>											
Current	2.33	0.49	0.89	2.37	0.53	1.38	1.19	2.25			
Sep 14	2.65	0.50	1.50	2.90	0.85	1.90	1.85	2.65			
Dec 14	2.80	0.60	1.75	3.00	1.15	2.10	2.05	2.80			
Jun 15	3.00	0.70	1.90	3.20	1.35	2.20	2.10	3.15			

### 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	1.31	104.17	0.80	1.66	1.21	9.20	7.45	8.15	4.22	315.02	27.72
Sep 14	1.33	107.00	0.79	1.68	1.26	9.00	7.46	8.00	4.13	314.00	27.00
Dec 14	1.30	112.00	0.78	1.67	1.27	8.70	7.46	7.90	4.05	320.00	27.00
Jun 15	1.22	116.00	0.77	1.58	1.27	8.58	7.46	7.70	4.00	319.00	27.00

Sources: Bloomberg, Deutsche Bank

Heiko Peters (+49 69 910-21548, heiko.peters@db.com)

Oliver Rakau (+49 69 910-31875, oliver.rakau@db.com)



## Focus Germany

### German Data monitor

	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014
<b>Business surveys and output</b>											
<b>Aggregate</b>											
Ifo business climate	105.3	107.3	108.8	110.8	110.4	110.7	111.2	110.4	109.7	108.0	106.3
Ifo business expectations	101.8	103.4	106.0	107.8	106.0	106.3	107.2	106.1	104.8	103.4	101.7
PMI composite	49.9	52.9	54.5	55.4	55.2	54.3	56.1	55.6	54.0	55.7	54.9
<b>Industry</b>											
Ifo manufacturing	100.4	102.7	104.5	106.8	106.5	106.9	107.5	106.9	105.2	103.7	102.2
PMI manufacturing	48.7	51.2	52.9	55.0	52.8	53.7	54.1	52.3	52.0	52.4	51.4
Headline IP (% pop)	1.7	0.7	0.5	1.1	-1.5	-0.6	-0.1	-1.7	0.3		
Orders (% pop)	1.0	1.5	2.3	0.1	-0.6	-2.7	3.2	-1.6	-3.2		
Capacity utilisation	82.1	83.2	83.2	83.4	84.3						
<b>Construction</b>											
Output (% pop)	12.0	1.3	-0.5	5.1	-5.9	-4.1	-3.4	-2.3	3.4		
Orders (% pop)	1.9	-1.3	3.4	1.6	-4.8	-2.3	3.9	-4.9	-7.7		
Ifo construction	123.7	120.5	121.2	122.6	120.5	120.6	120.6	120.3	120.5	119.4	119.5
<b>Services</b>											
PMI services	49.9	52.6	54.1	54.0	55.1	53.0	54.7	56.0	54.6	56.7	56.4
<b>Consumer demand</b>											
EC consumer survey	-4.2	-3.2	-2.8	0.3	4.3	2.3	3.1	5.5	4.3	3.9	0.3
Retail sales (% pop)	0.2	-0.3	0.2	1.5	-0.4	-0.5	-0.5	-0.2	1.0	-1.4	
New car reg. (% yoy)	-3.7	-1.4	1.6	2.8	-0.3	5.4	-3.6	5.2	-1.9	6.8	
<b>Foreign sector</b>											
Foreign orders (% pop)	2.8	0.7	3.9	-1.3	-0.1	-4.5	4.9	-1.0	-4.1		
Exports (% pop)	0.4	0.2	1.6	0.3	0.5	-1.8	2.6	-1.1	0.9		
Imports (% pop)	1.4	-0.3	0.6	2.2	-1.3	-1.1	0.2	-3.4	4.5		
Net trade (sa EUR bn)	48.1	49.3	52.2	48.0	52.3	14.9	17.2	18.8	16.3		
<b>Labour market</b>											
Unemployment rate (%)	6.9	6.8	6.9	6.8	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Change in unemployment (k)	18.0	-0.3	12.3	-46.3	-18.7	-10.0	-26.0	24.0	7.0	-11.0	1.0
Employment (% yoy)	0.6	0.6	0.5	0.7	0.8	0.7	0.8	0.8	0.8	0.8	
Ifo employment barometer	104.9	106.3	107.2	107.5	106.8	107.4	107.4	106.9	106.1	106.0	107.0
<b>Prices, wages and costs</b>											
<b>Prices</b>											
Harmonised CPI (% yoy)	1.5	1.7	1.3	1.0	0.9	0.9	1.1	0.6	1.0	0.8	0.8
Core HICP (% yoy)	1.0	1.2	1.1	1.1	1.1	0.9	1.4	0.7	1.1	1.2	
Harmonised PPI (% yoy)	-0.1	-0.3	-0.7	-1.0	-0.8	-0.9	-0.9	-0.8	-0.7	-0.8	
Commodities, ex. Energy (% yoy)	-7.0	-12.2	-10.4	-11.1	-4.9	-11.3	-5.8	-5.4	-3.5	-3.0	
Oil price (USD)	102.5	110.4	109.3	108.2	109.7	107.5	107.7	109.6	111.8	106.9	
<b>Inflation expectations</b>											
EC household survey	22.5	26.2	25.5	22.0	16.9	19.9	18.0	18.1	14.6	15.3	14.8
EC industrial survey	-0.6	2.8	6.1	5.6	2.3	4.1	2.5	1.9	2.6	3.3	4.1
<b>Unit labour cost (% yoy)</b>											
Unit labour cost	1.8	1.5	1.4	0.9	2.1						
Compensation	1.6	1.9	2.1	2.8	2.5						
Hourly labour costs	1.6	1.5	2.3	1.0	2.4						
<b>Money (% yoy)</b>											
M3	3.8	2.5	2.7	3.5	4.2	3.5	3.7	4.4	4.2	4.4	
M3 trend (3m cma)						3.7	3.8	4.1	4.3		
Credit – private	1.3	-4.0	-3.1	-3.6	-3.5	-3.6	-3.4	-3.2	-3.5		
Credit – public	-22.4	-17.7	-17.1	-1.5	9.4	-1.5	-8.4	-2.3	9.4		

% pop = % change this period over previous period.

Sources: Deutsche Bundesbank, European Commission, Eurostat, Federal Employment Agency, German Federal Statistical Office, HWWI, ifo, Markit



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