ECONOMIC RESEARCH & CORPORATE DEVELOPMENT

Working Paper 154

September 25, 2012

} MACROECONOMICS } FINANCIAL MARKETS } ECONOMIC POLICY } SECTORS

Claudia Broyer, Ann-Katrin Petersen, Dr. Rolf Schneider

Impact of the euro crisis on the German economy

Allianz

AUTHORS:

CLAUDIA BROYER
Tel. +49.69.263-57677
claudia.broyer@allianz.com

ANN-KATRIN PETERSEN
Tel. +49.69.263-19790
ann-katrin.petersen@allianz.com

DR. ROLF SCHNEIDER
Tel. +49.69.263-57790
rolf.schneider@allianz.com

IMPACT OF THE EURO CRISIS ON THE GERMAN ECONOMY

Opinion is fiercely divided over what impact the European debt crisis will have on Germany. The manifold aspects surrounding the issue add to the confusion. Many argue that Germany's European partners are placing too much of a burden on the country's shoulders and that, in the end, German taxpayers will be left to foot the bill anyway. Then, there are those who believe that the German government is actually benefiting from the euro crisis. Another issue is the economy: a growing chorus of voices claims that the euro crisis is dragging German to the brink of a recession.

Below, we aim to help bring the debate back to the facts by structuring the various different aspects and assessing them individually. We do not want to speculate as to the possible impact of the disintegration of monetary union, but rather plan to discuss the impetus and effects that the debt crisis has already had on the German economy.

The root of the crisis can be traced back to a correction of Greece's budget figures in late 2009. Three years have passed since this correction was made. By early 2010, the interest rate structure within the EMU area had already changed considerably. The risk premiums for a number of countries had started to soar, with investors flocking to other countries, like Germany, which were perceived to be safe havens. Up to the middle of 2011, upswing forces still had the upper hand in the euro area. Since then, however, the economy has started to falter, with signs of a recession intensifying of late.

Undisputedly, the euro crisis has been pushing interest rates in Germany down since the end of 2009:

- Contrary to what might have been expected, the ECB has pursued a much more expansionary course than previously, with the exception of a brief interim period.

- The flight into German government bonds has forced yields down sharply across almost all maturities. At times we have even seen negative yields for shorter maturities, with even ten-year bonds offering returns that are lower than the rate of inflation.

These exceptionally low interest rates are making it easier for the German government to borrow and creating more demand for personal loans, but they are also eating into savers' interest income. The advantages that Germany can draw from its "safe haven" status are offset by the risks associated with its loans and credit guarantees under the rescue funds, the government bonds purchased by the ECB and the Target 2 receivables.

The euro crisis is impacting the German economy in several ways: budget consolidation moves in those EMU countries that have been hit by the crisis have resulted in a recession. This has put a real damper on trade flows within the eurozone. German incoming orders from EMU countries in Q2 2012 were down by almost 13% on Q2 2011 in volume terms. So Germany's export sector is certainly feeling the heat of the European debt crisis. There are, however, other effects on Germany's export prospects that are worth considering. Since the outbreak of the crisis, the external value of the euro has slumped considerably. It is now almost 15% lower than in 2009. This makes German exporters much more competitive, in terms of price, on the international markets. Experience has, however, shown that depreciation tends not to have an immediate impact on export volume, but usually takes one to two years to make itself felt. This means that, if anything, German exports will only have felt some of the impact of the lower external value of the euro to date. Positive effects are on the cards for 2013.

What is more, the economic and political uncertainty triggered by the debt crisis is denying the corporate sector the security it needs to plan ahead. This means that companies are putting their investment plans on the back burner. Equipment investment in Germany has declined by no less than 3½% over the past three quarters, despite the fact that the level seen in H2 2011 was still not even on a par with the pre-crisis level reached in 2008/2009.

Below, we want to try to quantify as far as possible the impact of the debt crisis

- on the interest burden of the German state,
- on the interest income of domestic private households,
- on German exports,
- on private consumption,
- on investment and
- on German GDP

.

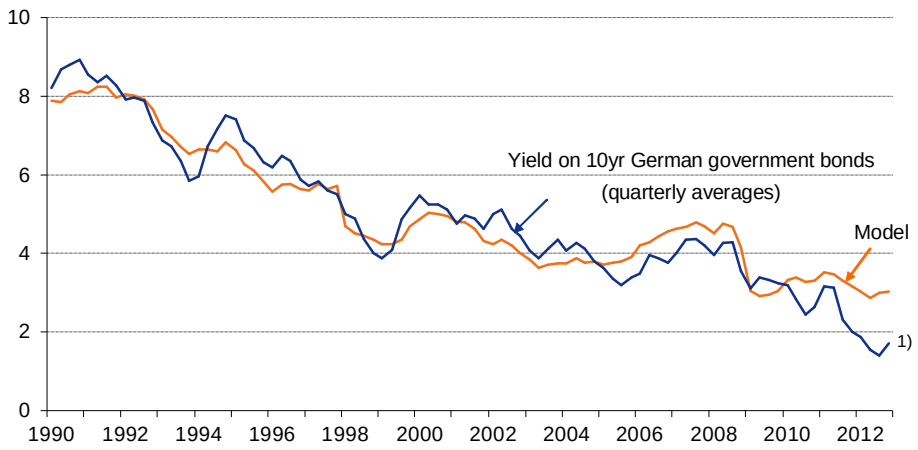
Impact on the interest burden of the German state

There are several possible approaches to calculating the effects of the European debt crisis on the interest burden in Germany's budget. One very easy method is to pin all of the blame for the drop in average interest rates on Germany's sovereign debt on the crisis. In 2009, the average interest rate on Germany's sovereign debt stood at 3.87%. This year, the rate is estimated to come in at 3.1%, meaning that a substantial 0.77 percentage points have been shaved off the interest rate in the space of three years. Based on the debt level at the start of 2012, namely EUR 2088bn, this eases the debt burden on the German government by EUR 16.1bn.

We have, however, selected a second way of calculating the interest relief, because, leaving the "safe haven effects" out of the equation, interest rates could also have fallen for purely fundamental reasons. This method is based on our econometric interest rate explanation model, which uses conventional interest rate determinants such as inflation, economic growth, key rates and international interest rate relationships.

Model: Traditional determinants*) point to higher yield level

10-year German government bonds



*) Inflation, economic growth, 3-month money, US yields.

1) Q3 and Q4/2012 forecast.

Sources: EcoWin, own calculations.

As the chart shows, actual yields on ten-year German government bonds have been consistently lower than the yield level that would be fundamentally appropriate based on the model since 2009. In 2010, the average difference came in at around 0.6 percentage points, a gap that crept up to around 0.7 percentage points in 2011 and is estimated to have widened to 1.3 percentage points this year. We believe that this difference between actual yields and those estimated by the model is due to the flight to German government bonds triggered by the debt crisis, and have used it to estimate the interest rate relief that the German government is benefiting from.

Obviously, the German government does not only borrow in the form of ten-year bonds, but also uses federal debt obligations (*Bundesobligationen* - 5 years), federal treasury obligations (*Bundesschatzanweisungen* - 2 years) and treasury discount paper (6, 9, 12 months). So we also have to think about how short-term interest rates have been effected by the euro crisis. These rates are largely determined by the European Central Bank. One plausible assumption is that, had the European debt crisis never reared its head, the ECB would have already started raising key rates, which had been lowered to 1% in 2009, in the course of 2010, and lifting them to 2.5% in late 2011, i.e. a shade higher than the targeted inflation rate. Compared with actual key rates, this produces an average difference of 0.25 percentage points in 2010, 0.9 percentage points in 2011 and an estimated 1.6 percentage points in 2012. This means that the estimated interest rate differential at the short end of the market certainly bears a resemblance to the long end. We will now calculate the mean value of the estimated differences in long-term interest rates and key rates to try to approximately calculate Germany's interest rate advantage over the entire maturity structure.

Estimated interest rate advantage of German state thanks to debt crisis

in percentage points

	Long-term rates	Short-term rates	Average
2010	0.55	0.25	0.4
2011	0.71	0.88	0.8
2012	1.35	1.63	1.45

This allows us to calculate by how many billions the German government's interest expenditure is lower than it would have been if the crisis had never materialized.

The German government issues between EUR 250bn and EUR 300bn a year on the money and capital market. This year, the German Finance Agency has put the issue volume at EUR 255bn. The total volume of the funds borrowed by the German government on the credit markets came in at EUR 1128bn in mid-2012, which is around 53% of Germany's sovereign debt. We will now also assume that the estimated interest rate advantage has affected not only the German government's issues, but also its other government debt – i.e. around 47% of its total debt. Another aspect that is significant for the calculation is that the interest rate advantage that emerged for short-dated bonds in 2010 and 2011 has already disappeared and that only a part of the issue volume can still be found in the government's books.

Taking all of the above into account, Germany's budget is currently reaping the benefits of annual interest savings to the tune of around EUR 10.2bn thanks to the euro crisis – comprising interest rate advantages from borrowing in 2010 (EUR 1.0bn), in 2011 (EUR 2.7bn) and 2012 (EUR 6.5bn). The fact that the interest rate advantage of around EUR 10bn arrived at based on the above is less than the EUR 16bn calculated on the basis of the first method is plausible, because the interest rate level for the period from 2010 to 2012 that we deem to be appropriate based on the fundamental data was lower than the average interest rate in the budget in 2009, which is why the average interest rate in the budget would have fallen slightly even in the absence of a crisis. Nevertheless: the EUR 10bn that has been shaved off interest expenditure in Germany's budget takes a considerable weight off the country's shoulders.

The interest rate advantages for the budget that emerged between 2010 and 2012 as a result of the euro crisis will continue to have an effect for years to come in line with the debt maturity. If we add up the interest rate advantages gained in the period from 2010 to 2012 and those that Germany will benefit from in the years to come, we arrive at cumulative interest relief for Germany's budget of an estimated EUR 67bn – enough to slash around 3 percentage points off Germany's government debt ratio.

On Germany's financial risk as a whole

The direct costs associated with Greek default and the country's departure from the single currency at this point in time are estimated to total around EUR 80bn. These comprise the bilateral loans granted by Germany as part of the first rescue package, Germany's share (29.07%) of the funds already paid out to Greece from the rescue fund and the proportion, based on the ECB's capital key (27.07%) of the Greek government bonds held by the ECB (no precise information is available in this respect, it is presumed that the ECB originally bought securities worth EUR 50bn, Greece recently paid back around EUR 3bn in due government bonds) and of the Target 2 liabilities of the Greek central bank (end-August 2012: EUR 107.88bn).

Potential cost to Germany in EUR bn	
First rescue program	15.2
EFSF aid second rescue program	21.5
ECB bond purchases	13.5
Target 2	29.2
Total	**79.4**

Joint and several liability assumed by Germany under the rescue funds

- EFSF: Germany's share of the credit guarantee framework totals EUR 211bn. The EFSF has a remaining aid capacity of EUR 248bn due to payment obligations from rescue packages totaling EUR192bn (without Spain).
- ESM: The permanent ESM rescue fund is likely to come into force in October 2012 and replace the fixed-term EFSF in mid-2013.[1] The ESM will boast subscribed capital of EUR 700bn. The capital comprises the following:
  - EUR 620bn in callable capital (credit guarantees)
  - EUR 80bn in cash capital
  - Germany's share of joint and several liability for the ESM totals EUR 190bn: EUR 22bn in cash capital and EUR 168bn in callable capital

Even if the maximum loan capacity for the ESM alone has been put at EUR 500bn, the combined joint lending capacity of the EFSF and ESM is to total EUR 700bn during the interim period. This is because the EFSF rescue programs that are already running (and are worth just shy of EUR 200bn) will be added to the ESM volume. This means that – at least during the interim period in which both rescue funds co-exist – Germany's upper liability threshold could increase to beyond the current maximum guarantee of EUR 211bn, namely to EUR 285.3bn based on estimates supplied by the German Finance Ministry. The Finance Ministry has also thrown aid under the EU budget (EFSM) totaling EUR 9.8bn and Germany's share of the first rescue package for Greece that has already been paid out, totaling EUR 15.2bn, into the equation, pushing the upper liability threshold up to EUR 310.3bn in total.

If monetary union were to disintegrate, we would also have to include the ECB's government bonds under the Securities Market Program (SMP), which amounted to EUR 209bn at the end of August – weighed based on Germany's ECB capital share, this would give us a figure of EUR 56.6bn. Then, there is the Bundesbank's Target 2 balance totaling EUR 751bn (as at August).

Impact on the interest income of domestic private households

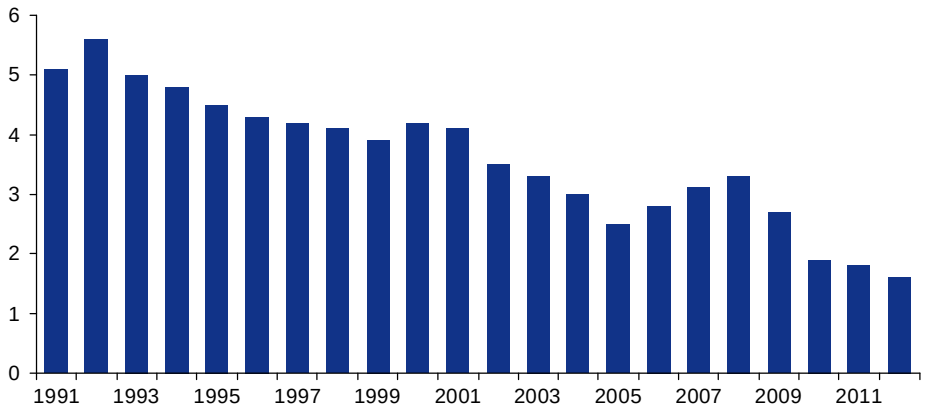
But just as the extremely low interest rates come as welcome relief for the government's interest burden, the negative impact on savers' interest income is on the same scale. The financial assets of private households totaling EUR 4714bn (2011) include interest-bearing forms of investments such as term deposits, savings deposits, savings bonds, money market securities and fixed-income securities worth EUR 1221bn. Sight deposits are also likely to provide a source of interest income, albeit on a small scale. In 2011,

[1] The ESM will come into force as soon as at least 90% of the capital stock has been reached, i.e. as soon as enough countries, but at least 12 EMU countries, have ratified the intergovernmental treaty. With a capital stake of around 27% (EUR 190bn), it is therefore absolutely crucial for Germany, along with France, to ratify the treaty in order to put the permanent rescue mechanism in place.

households saw interest income worth EUR 40.1bn come their way. Only two years earlier in 2009 – just before the debt crisis erupted – households were on the receiving end of EUR 54.9bn in interest income based on a similar investment volume of EUR 1208bn. As far as 2012 is concerned, we expect the interest income of private households to dwindle further to EUR 36bn, despite the fact that the investment volume is virtually unchanged compared with 2011. If average interest rates in households' portfolios in 2012 were on a par with 2009, they could look forward to interest income of EUR 55.5bn – i.e. almost EUR 20bn more than the amount they will actually receive.

Interest on private household financial assets in Germany

Actual interest received as % of deposits and fixed-interest securities held



Sources: Statistisches Bundesamt, Deutsche Bundesbank, 2012 own estimate.

This loss of interest income is, however, unlikely to be attributable to the debt crisis alone. As already explained above when we looked at the interest rate advantages enjoyed by the state, we can assume that interest rates in the period from 2010 to 2012 would have been lower than the average interest rate on an asset/debt position in 2009 even if we had been spared the crisis. If, as with the calculation of the government's interest burden, we attribute a good 60% of the loss of interest income to the effects of the debt crisis, we arrive at a scenario in which private households have now been losing a good EUR 12bn in interest income a year as a result of the debt crisis.

In addition to the loss in interest income, private households are facing lower income from other forms of investment as well. This applies, in particular, to the income from claims vis-à-vis insurance companies, *Pensionskasse* pension schemes and pension funds, even if the drop in the income from investments is likely to be cushioned, and delayed somewhat, by the long-term investment policies pursued by these institutions. In 2011, private households had claims vis-à-vis insurance companies, *Pensionskasse* pension schemes and pension funds totaling EUR 1682bn. Without wanting to be overly skeptical, we can expect, based on the high volume of these claims, to see the resulting income from investments fall by at least EUR 10bn a year in the medium term as a result of the debt crisis.

Impact on German exports

The weak economy in those EMU countries hit by the debt crisis has put a considerable damper on German exports to the euro area. This economic weakness started to set in in the spring of 2011 and has since become much more pronounced.

In 2011 and in this year to date, the growth in German exports to the eurozone has lagged well behind the growth in exports to regions outside of the eurozone. However, the trend towards above-average growth in exports to non-EMU countries is one that has already been evident for the past decade or so. In the period from 2000 to 2009, these exports grew at a rate that was 1.5 percentage points a year faster than exports to the eurozone, due in particular to the increasing role played by the emerging markets as trading partners for Germany.

German merchandise exports, nominal

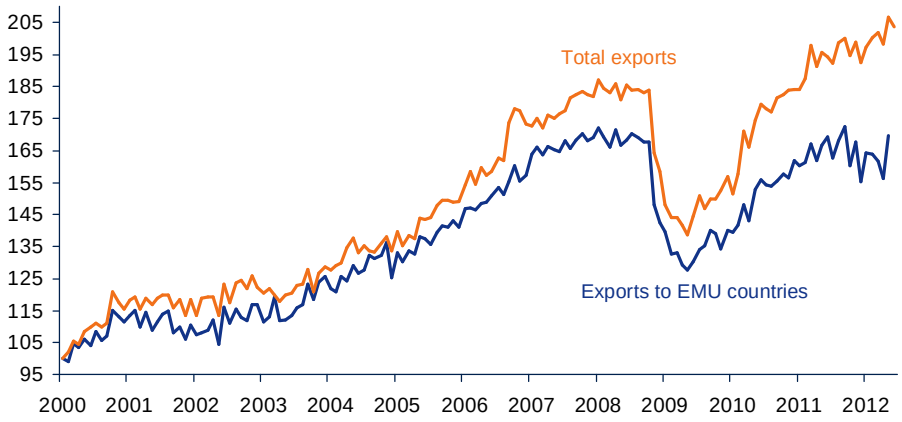
% change on year earlier

	EMU	Non-EMU
2011	8.3	13.5
Januar - July 2012	-0.6	9.5
Annual average 2000-2009	3.8	5.3

Since 2010 (increase from January - July 2012 extrapolated to produce an annual value for 2012), German exports to non-EMU countries have increased at an estimated rate of 24.3%. Assuming – which should be plausible – that the trend towards above-average growth (namely to the tune of 1.5 percentage points) compared with exports to EMU countries continues on more or less the same trajectory this decade, too, German exports to the euro area should have risen by 20.6% since 2010. In actual fact, however, the increase came in at only 7.7%. We have attributed the difference of 12.9 percentage points to the European debt crisis.

German exports, nominal

Index January 2000=100; seasonally adjusted



Source: Deutsche Bundesbank.

With eurozone exports accounting for around 40% of total exports, the weaker demand from the euro area has shaved a good 5% off Germany's goods exports. The figure for services exports is likely to be similar. Since exports in Germany now account for around 50% of GDP, export losses of 5% would slice 2½% off GDP in the first instance. Exported goods, however, contain a significant proportion of intermediate goods imported from abroad. Exports are now estimated to contain 50% imported goods. Consequently, a 5% drop in exports would mean that foreign trade would make a negative growth contribution corresponding to around half of the pure export effect. The loss of GDP growth

sparked by the lower demand from the eurozone is therefore expected to total around 1¼ percentage points.

However, the depreciation of the euro in the course of the debt crisis has provided positive impetus for Germany's exports. Despite its recent rebound, the trade-weighted external value of the euro is currently around10% lower than it was in 2009, before the debt crisis hit. This has made German exporters much more competitive in terms of price. The indicator of the price competitiveness of the German economy – which takes into account not only the real external value of the euro but also price/cost competitiveness compared with EMU countries – has improved by around 7% since 2009. According to another of our own estimates, the elasticity of Germany exports with respect to the indicator of price competitiveness based on unit labor costs is around 0.7, although the process of adjustment takes more than a year. This means that the depreciation of the euro will give the German economy an estimated 5% more exports, boosting GDP growth by around 1¼ percentage points in the process.

However, given the time lag with which exports react to improved competitiveness, only around half of this effect is likely to have filtered through to date. Consequently, the depreciation of the euro per se is only responsible for 2½% of the additional exports. This has lifted GDP growth by 0.6 percentage points. In 2013, we expect the depreciation to provide a further appreciable boost to exports and GDP growth alike.

In summary: while the European demand slump has reduced German exports, the depreciation of the euro has given them a boost. If we look at the aggregate impact of the two effects, our estimates show a 2½% reduction in German exports at present, pushing GDP growth down by 0.6 percentage points. Once exports have fully adjusted to the lower external value, however, the two effects will more or less cancel each other out.

Impact on private consumption

The debt crisis is impacting private consumption via a number of channels:

- the depreciation of the euro
- the extremely low interest rates
- the uncertainty surrounding the economic outlook

The depreciation of the euro is pushing inflation on the domestic market up because imports are becoming more expensive. Based on the elasticities in our estimate, the 10% depreciation of the euro translates into a 0.6% increase in the price index for private consumption in Germany. This is likely to prompt a corresponding drop in real private consumption and lop an estimated 0.3 percentage points off the GDP growth rate.

The extremely low interest rates are good news for private consumption, as they translate into more favorable conditions for consumer loans and more disposal income due to the lower interest burden for residential construction loans. On the other hand, however, the low interest rates mean that savers are facing investment income losses reaching into the double-digit billions in total. All in all, the low interest rates triggered by the crisis are likely to have a minimal positive effect on real private consumption.

What is more, the euro debt crisis has made consumers far more pessimistic in their economic outlook. This is likely to deter consumers from buying longer-term durable goods in particular.

All in all, this means that the debt crisis is likely to have put a damper on real private

consumption on a scale of 0.7 percentage points due to the depreciation of the euro, in particular. This is estimated to have shaved 0.3 percentage points off the GDP growth rate.

Impact on investment

It is equally difficult to estimate the impact that the debt crisis has had on investment activity, because a number of factors are at play here. To assess the impact, we have made a distinction between equipment investment and commercial construction investment on the one hand, and residential construction investment on the other.

Residential construction activity will be encouraged by the very low interest rates caused by the crisis, increased immigration to Germany from countries in southern Europe and possibly also by a growing trend towards investing in property. On the flip side, households have adopted a much gloomier economic outlook and the depreciation of the euro means lower real income levels. All in all, the euro crisis is expected to have no more than a slightly positive effect, if any, on residential construction in Germany.

Although the low interest rates will also spur commercial investment, the latter is more likely to be impacted by the drop in the capacity utilization rate in the industrial sector on the back of weak demand from Europe and by the fact that companies feel unable to plan ahead in light of the risks hanging over the euro.

Equipment investment has declined by 3½% in real terms since the fall of last year, marking the end of a two-year recovery phase. We put this down primarily to the consequences of the debt crisis. While this is certainly cause for concern as far as Germany's medium-term growth prospects are concerned, the most recent investment slump is only likely to bring current economic growth down by an estimated 0.2 percentage points.

Impact on GDP

If we combine the effects of the European debt crisis on German exports, consumption and investment, the situation is as follows: according to our estimates, German gross domestic product has slid by 1.1% to date. Nevertheless, the process in which exports adjust to the depreciation has not yet been concluded, meaning that the loss of economic output is likely to come in at only 0.5% in the long term. This will only, however, apply provided that the economic downturn in the EMU crisis countries is not exacerbated further, causing the demand from abroad to plummet even further.

Impact of debt crisis on GDP (in %)

	Exports	Private consumption	Investment	GDP
to date	-0.6	-0.3	-0.2	-1.1
after adjustment process	0.0	-0.3	-0.2	-0.5

The impact of the debt crisis on the German economy paints a very mixed picture. A blanket assessment leads nowhere. Although the German government is saving a hefty EUR 10bn in interest expenditure every year – indeed an estimated whopping EUR 67bn on a cumulative basis over the years – it is also assuming considerable risks. Although private households can also borrow at very favorable rates, savers are missing out on

interest income of well in excess of EUR 10bn a year, a figure that does not even include losses affecting other types of income from investment. Although German exports will be hit hard by the drop in demand from the European crisis-countries, they will be stimulated considerably by the marked drop in the external value of the euro. Once the adjustment processes have run their course, both effects could more or less cancel each other out. The debt crisis will probably have a limited negative effect on private consumption and investment activity in Germany. All in all, the cumulated losses in economic growth are currently likely to total a good one percentage point.

These assessments are, as always, subject to the disclaimer provided below.

ABOUT ALLIANZ

Together with its customers and sales partners, Allianz is one of the strongest financial communities. Around 78 million private and corporate customers rely on Allianz's knowledge, global reach, capital strength and solidity to help them make the most of financial opportunities and to avoid and safeguard themselves against risks.
In 2011, around 142,000 employees in some 70 countries achieved total revenue of 103.6 billion euros and an operating profit of 7.9 billion euros.
Benefits for our customers reached 86.5 billion euros. This business success with insurance, asset management and assistance services is based increasingly on customer demand for crisis-proof financial solutions for an ageing society and the challenges of climate change. Transparency and integrity are key components of sustainable corporate governance at Allianz SE.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

The statements contained herein may include statements of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. In addition to statements which are forward-looking by reason of context, the words "may", "will", "should", "expects", "plans", "intends", "anticipates", "believes", "estimates", "predicts", "potential", or "continue" and similar expressions identify forward-looking statements. Actual results, performance or events may differ materially from those in such statements due to, without limitation, (i) general economic conditions, including in particular economic conditions in the Allianz Group's core business and core markets, (ii) performance of financial markets, including emerging markets, and including market volatility, liquidity and credit events (iii) the frequency and severity of insured loss events, including from natural catastrophes and including the development of loss expenses, (iv) mortality and morbidity levels and trends, (v) persistency levels, (vi) the extent of credit defaults, (vii) interest rate levels, (viii) currency exchange rates including the Euro/U.S. Dollar exchange rate, (ix) changing levels of competition, (x) changes in laws and regulations, including monetary convergence and the European Monetary Union, (xi) changes in the policies of central banks and/or foreign governments, (xii) the impact of acquisitions, including related integration issues, (xiii) reorganization measures, and (xiv) general competitive factors, in each case on a local, regional, national and/or global basis. Many of these factors may be more likely to occur, or more pronounced, as a result of terrorist activities and their consequences. The company assumes no obligation to update any forward-looking statement.

NO DUTY TO UPDATE

The company assumes no obligation to update any information contained herein.