



GERMANY

SELECTED ISSUES

July 2014

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GERMANY

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Approved By
The European
Department

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CONTENTS

| | |
|---|----------|
| I. THE GERMAN CURRENT ACCOUNT: A RETROSPECTIVE | 4 |
| A. Background | 4 |
| B. The Evolution of Household Net Savings | 5 |
| C. Drivers of German Corporate Sector Net Savings | 6 |
| D. Conclusions | 11 |

TABLE

| | |
|--|---|
| 1. Nonfinancial Corporate Sector: Change in Selected Variables | 7 |
|--|---|

REFERENCES

12

II. THE INTRODUCTION OF MINIMUM WAGE IN GERMANY: SOME CONSIDERATIONS

| | |
|--|----|
| A. Why a Minimum Wage in Germany? | 14 |
| B. The Case for and Against the Minimum Wage | 15 |
| C. Assessing the Impact of Minimum Wage in Germany | 17 |
| D. Future Decisions about the Minimum Wage | 18 |

BOX

| | |
|-------------------------------------|----|
| 1. Germany's In-Work Benefit System | 19 |
|-------------------------------------|----|

TABLES

| | |
|--|----|
| 1. Selected Studies on Labor Demand Elasticities and Minimum Wage Impact in Germany | 18 |
|--|----|

| | |
|---|----|
| 2. Summary of Minimum Wage Systems in Select Advanced Economies | 20 |
|---|----|

| | |
|-------------------|-----------|
| REFERENCES | 21 |
|-------------------|-----------|

III. WHICH POLICIES CAN BOOST GERMAN GROWTH AND REDUCE THE CURRENT ACCOUNT SURPLUS? 22

| | |
|---|----|
| A. Higher Public Investment | 23 |
| B. Accommodative Regional Monetary Policy | 25 |
| C. Implementation Delays | 26 |
| D. Financing | 28 |
| E. Higher Private Investment | 29 |
| F. Service Sector Reforms | 30 |

FIGURES

| | |
|---|----|
| 1. Higher Public Spending | 24 |
| 2. Higher Public Investment | 25 |
| 3. Higher German Public Investment With and Without Time-to-Build | 27 |
| 4. Financing Public Investment | 28 |
| 5. Higher Private Investment | 30 |
| 6. Services Sector Reforms | 32 |

APPENDIX FIGURES

| | |
|-----------------------|----|
| 1. Private Investment | 33 |
| 2. Public Investment | 34 |

| | |
|-------------------|-----------|
| REFERENCES | 35 |
|-------------------|-----------|

IV. SERVICES SECTOR PERFORMANCE AND PRODUCT MARKET REGULATION 36

FIGURE

| | |
|--------------------------------|----|
| 1. Services Sector Performance | 39 |
|--------------------------------|----|

| | |
|-------------------|-----------|
| REFERENCES | 40 |
|-------------------|-----------|

V. RECENT HOUSING MARKET DEVELOPMENTS 41

TABLE

| | |
|--|----|
| 1. Institutional Characteristics of Selected National Mortgage Systems | 43 |
|--|----|

FIGURE

| | |
|---------------------------------------|----|
| 1. Recent Housing Market Developments | 44 |
|---------------------------------------|----|

| | |
|-------------------|----|
| REFERENCES | 45 |
|-------------------|----|

| | |
|---|----|
| VI. THE GERMAN MACROPRUDENTIAL FRAMEWORK | 46 |
|---|----|

BOXES

| | |
|---|----|
| 1. Germany's Current Macroprudential Toolkit | 47 |
| 2. The usefulness of LTV, DTI and DSTI instrument | 48 |

| | |
|-------------------|----|
| REFERENCES | 50 |
|-------------------|----|

| | |
|---|----|
| VII. THE GERMAN LIFE INSURANCE SECTOR: CONFRONTING THE CHALLENGE OF LOW INTEREST RATES | 51 |
|---|----|

| | |
|--|----|
| A. The German Life Insurance Sector | 51 |
| B. The Challenge of Low Interest Rates | 54 |

TABLES

| | |
|--|----|
| 1. Life Insurance Market Shares, 2012 | 52 |
| 2. Gross Technical Provisions, Capital, and Reserves, 2005-2012 | 52 |
| 3. Life Insurers' Investment Assets, 2005-2012 | 53 |
| 4. Selected European Countries: Guaranteed Rate in Life Insurance Policies, 2013 | 55 |

| | |
|-------------------|----|
| REFERENCES | 59 |
|-------------------|----|

| | |
|--|----|
| VIII. REGULATORY AND SUPERVISORY ISSUES | 60 |
|--|----|

| | |
|---|----|
| IX. CHALLENGES FOR THE BANKING SECTOR AND THE ECB COMPREHENSIVE ASSESSMENT | 63 |
|---|----|

FIGURES

| | |
|---|----|
| 1. Mixed Picture on Profitability | 68 |
| 2. Robust Risk-Based Capital Ratios, But Weaker Leverage Ratios | 69 |
| 3. Mixed Picture on Funding | 70 |
| 4. Relatively Strong Asset Quality Overall | 71 |

I. THE GERMAN CURRENT ACCOUNT: A RETROSPECTIVE¹

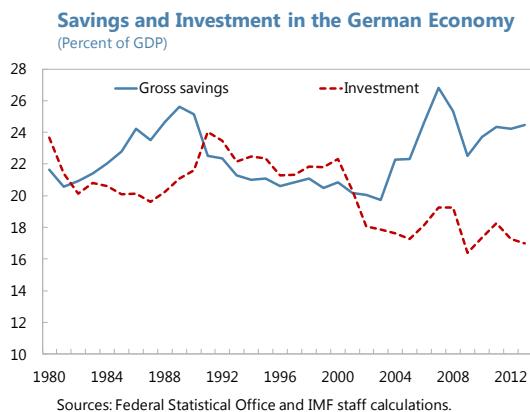
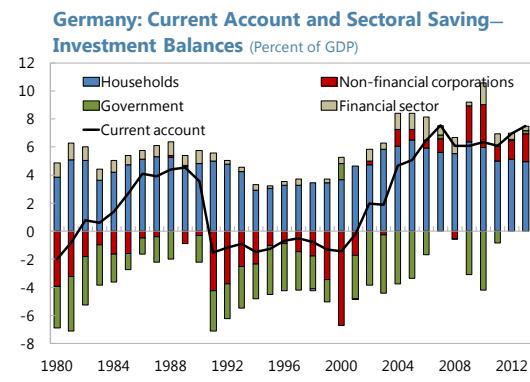
The build-up of Germany's current account surplus over the last decade does not lend itself to a single-factor explanation, as both global and domestic factors, as well as policy changes led to increased savings and lower investment. All sectors contributed to the build-up of the surplus. While fiscal consolidation and higher household savings played a role, the corporate sector experienced a more pronounced shift. This note provides a retrospective on these developments and explores whether the factors contributing to the surplus are likely to be reversed going forward.

A. Background

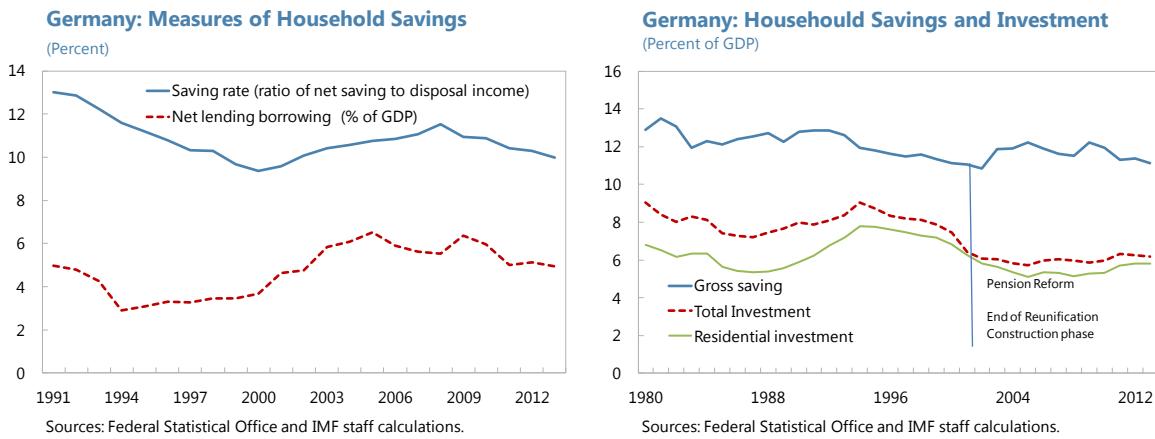
1. Germany's current account surplus reached €206 billion (7 ½ percent of GDP) in 2013, slightly higher than its previous peak in 2007, marking more than a decade of surpluses. Developments in all sectors' saving-investment balance contributed to the build-up of the current account. First, the net lending/borrowing position of non-financial corporations (NFCs), which had been negative in the

1980s and 1990s, has been positive for the last decade — averaging 4 percent of GDP above its level in the 1990s. Second, the net lending position of household sector—which includes non-incorporated enterprises—also grew in this time frame (by 2 percent of GDP on average). Third, the improvement in general government net lending position also contributed to the current account surplus since 2011.

The growth of current account surplus was the result of both a sharp increase in gross savings after 2002 and a long-term trend decline in investment.

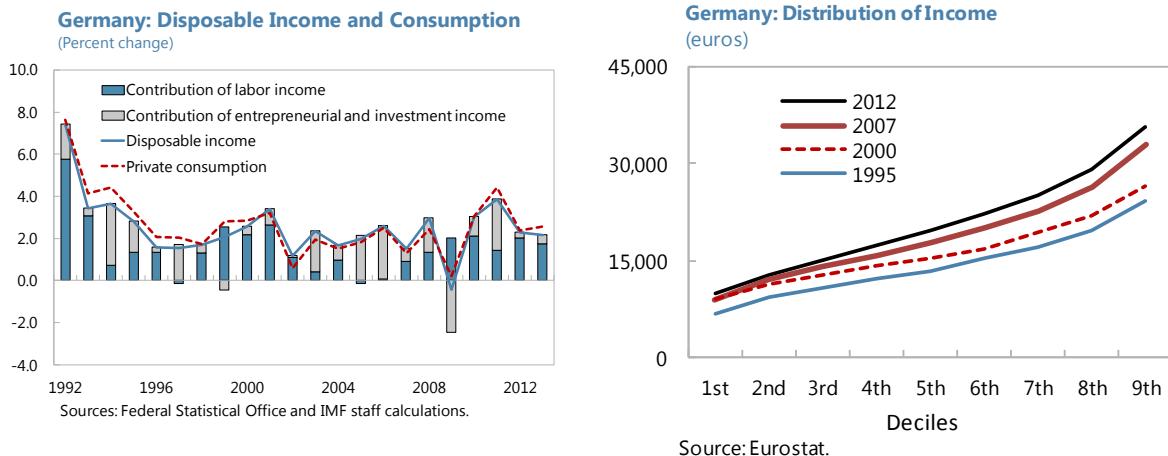


¹ Prepared by Faezeh Raei (EUR).



B. The Evolution of Household Net Savings

2. Households' net savings increased markedly during 2000-2007 as a result of several distinct developments. The increase in gross savings likely reflected at least in part the pension reform in early 2000s, which reduced the generosity of benefits and increased awareness of the demographic challenge. Another factor at play was the anemic growth of labor income, especially for low-skilled workers following the opening up of Central and Eastern Europe (see Para. 10-11 below). The increasing inequality and importance of entrepreneurial and investment income in disposable income shifted the income distribution to income brackets with higher savings rate, resulting in higher average savings. Meanwhile,

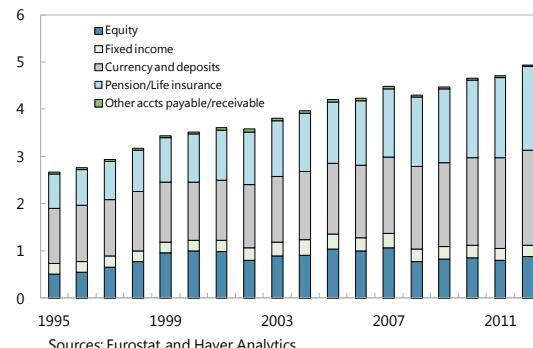


residential investment by households declined significantly as the reunification construction boom ended, contributing to the widening of saving–investment gap. In recent years, the uptick in residential investment and the pick-up of consumption on the back of higher wage growth has resulted in a decline in the household saving rate.

3. Demographic challenges will have a strong bearing on household savings.

Households' financial assets almost doubled since 1995 with an increasing share held as cash and deposits or invested in pension and life insurance products, signaling a strong aging-related saving behavior. This suggests that household savings may start to decline in the near future, as the large baby-boomer cohorts reach retirement age and begin drawing down their savings to fund retirement years.

Germany: Households' Financial Assets
(Trillion euros)



C. Drivers of German Corporate Sector Net Savings

While there are common global drivers for the NFCs shift to a net lender position, several German-specific factors played a role, notably the labor market reforms in the 2000s, the business tax reforms, and the globalization of German firms' production chains. This section provides a discussion of these factors.

Some definitions

4. According to the national accounts, the net savings of the non-financial corporate sector (NFC) are defined as follows:

$$\text{Corporate sector net savings} = (\text{value added} + \text{property income}) - (\text{compensation of employees} + \text{interest paid} + \text{taxes} + \text{dividends paid} + \text{domestic capital expenditure})$$

Corporate net savings can be used to finance the build-up of equity, the acquisition of financial assets (including cash), capital expenditure abroad (foreign direct investment), or a reduction in financial liabilities.

A bird's eye view of key variables

5. While in France and Italy the NFC remains a net borrower, since early 2000 the corporate sector in Germany has become a net lender similar to the United States, United Kingdom, Canada, and Japan. Table 1 provides a summary of the key components of NFC net lending in G7 countries over three sub-periods: pre-2000, the 2000s up to the global financial crisis, and the post-crisis years.

Table 1. Nonfinancial Corporate Sector: Change in Selected Variables

| | (Percent of GDP) | | | | | | |
|--|------------------|---------------------------|---------------------------|--|--------------------------|-------------------------|--|
| | Value Added | Compensation of Employees | Interest and Taxes (A) | Profits After Net Dividends Paid (B) | Gross Savings (C=A-B) | Capital Spending (D) | Net Lending or Borrowing (E=C-D) |
| Early 2000 less mid-1990s ^{1,2} | | | | | | | |
| Canada | ... | ... | ... | ... | 1.2 | -0.4 | 1.6 |
| France | 1.4 | 0.5 | 3.6 | 1.8 | 1.7 | 1.9 | -0.1 |
| Germany | 1.9 | 0.0 | 2.1 | 2.9 | -0.8 | 1.9 | -2.6 |
| Italy | -0.2 | -0.5 | 1.3 | 1.2 | 0.1 | 1.2 | -1.1 |
| Japan | ... | ... | ... | ... | ... | ... | ... |
| United Kingdom | 0.2 | 2.7 | -1.5 | -0.2 | -1.2 | 2.3 | -3.5 |
| United States | 0.0 | 1.9 | ... | 0.0 | -0.8 | 0.8 | -1.6 |
| 2007 less early 2000s ¹ | | | | | | | |
| Canada | ... | ... | ... | ... | 0.9 | 0.3 | 0.6 |
| France | 1.1 | 0.4 | 4.9 | 5.0 | -0.2 | 1.3 | -1.4 |
| Germany | 2.3 | -2.8 | 6.4 | 2.3 | 4.1 | -0.8 | 4.9 |
| Italy | -0.5 | 1.1 | -1.5 | -0.2 | -1.3 | 0.4 | -1.7 |
| Japan | ... | ... | ... | ... | 3.3 | 0.9 | 1.8 |
| United Kingdom | -3.8 | -2.9 | -0.5 | -1.7 | 1.1 | -2.7 | 3.8 |
| United States | -3.1 | -2.5 | 1.5 | 1.0 | 0.5 | -0.8 | 1.4 |
| 2012 less 2007 | | | | | | | |
| Canada | ... | ... | ... | ... | -1.1 | 0.7 | -1.8 |
| France | -1.4 | 0.9 | -2.9 | -0.9 | -2.0 | -1.2 | -0.8 |
| Germany | -0.5 | 2.0 | -2.5 | -0.3 | -2.1 | -2.5 | 0.4 |
| Italy | -1.3 | 1.7 | -2.6 | -2.8 | 0.3 | -2.2 | 2.5 |
| Japan | ... | ... | ... | ... | 1.6 | -2.2 | 5.9 |
| United Kingdom | 0.3 | 1.8 | -0.4 | 0.7 | -1.1 | -1.5 | 0.4 |
| United States | 0.1 | -1.6 | 1.6 | -0.4 | 2.0 | -0.8 | 2.8 |

Sources: Eurostat , national flow of funds data and IMF staff calculations.

¹ Mid-1990s is average of 1995 and 1996 values. Early 2000s is average of 1999, 2000, and 2001 values.

² For Germany, net lending/borrowing is adjusted for the one-off government capital transfer in 1995.

6. In the 1990s the increase in German corporate profits went to finance dividend distributions and higher investment, so the corporate sector reduced its contribution to aggregate net savings (i.e., the current account surplus), as in most of the other G7 countries.² In contrast, in the first part of the following decade NFC net savings increased in most G7 countries, with Germany experiencing the sharpest increase, contributing to pushing up the current account surplus to 7.4 percent of GDP in 2007. A closer look at the components of profitability reveals that both an increase in gross value added as well as a decline in compensation of employees played a role in Germany. The decline in labor compensation as a share of GDP happened in the U.S. and U.K. as well, but in Germany it took place despite a strong increase in corporate value-added relative to GDP. Moreover, in this period German

² Investment outside of Germany by German corporations is not included in the NFC investment in national accounts.

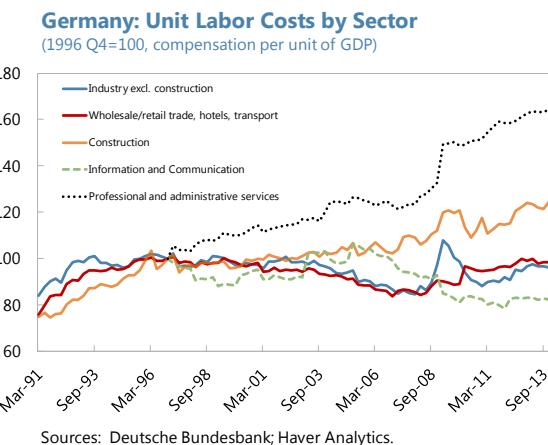
firms retained profits to a larger degree than their counterparts in the U.S. or France. To summarize, in Germany during 2000-2007 the decline in labor compensation boosted corporate profits; profits were retained to a large extent and not distributed to shareholders; and, despite these additional retained profits, NFC investment in Germany declined relative to GDP.

7. In the post-crisis years, however, some of these trends have reverted: labor compensation has been increasing despite a decline in NFC value added, and profits have declined more than dividend payouts resulting in lower gross savings. Nonetheless, the NFC's net savings have continued to increase because investment has fallen even further.

8. The rest of the section elaborates on the potential drivers of the patterns discussed above: the role of wage moderation, the investment decline, dividend policy, financing of foreign operations, as well as the global factors behind the rise of corporate savings.

What is behind declining labor costs?

9. Two explanations are commonly offered for the meager growth of wages in Germany during the 2000s: first, the threat of off-shoring production networks to neighboring countries (Dustmann et al., 2014), and second the far-reaching Hartz labor market reforms during 2003-2005 (Krebs and Scheffel, 2013). While it is difficult to convincingly disentangle the impact of these two factors, a look at unit labor cost developments (which reflect labor compensation growth relative to productivity growth) by sectors shows that labor cost growth was meager both in the internationally exposed manufacturing sector and in the non-traded wholesale, retail, hospitality, and transport sector, although other non-traded sectors such as construction and professional services exhibited stronger wage dynamics. This suggests that both labor market reforms and foreign competitive pressures likely played a role in bringing about wage moderation.³



10. In the last two years, wages have been growing more in line with productivity, as reflected in lower profitability and lower net corporate savings in the NFC in the years after the

³ Goerg and Goerlich (2012) do not find an impact of trade competition on wages in Germany (though it finds some impact on employment).

crisis (Table 1). If this trend continues, then the current account surplus might decline in the future.

What is behind sluggish capital formation?

11. As Table 1 shows, capital spending by Germany's NFC increased relative to GDP in the second half of the 1990s, but declined thereafter. These trends are broadly similar in other G7 countries, suggesting some common factors. One hypothesis is that this reflects a decline in the relative price of capital rather than an actual slowdown in real capital accumulation (Karabarbounis and Neiman, 2012, Cardarelli and Ueda, 2006).

12. A second factor that may have played a role is that corporations redirected investment from the domestic economy to international investment, off-shoring production and creating supply chains. German enterprises have increasingly moved part of their supply chain abroad including to Eastern Europe, in particular following the eastward expansion of European Union. The net savings of German NFCs may have been used in part to fund this process.⁴

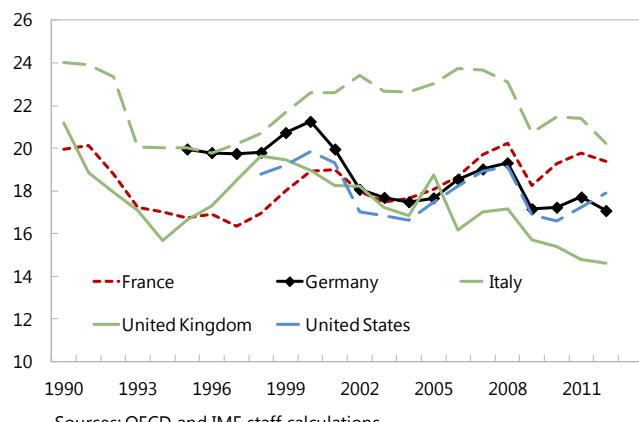
13. Micro data on listed companies also provides evidence on the role of foreign operations. Cross-country firm level regressions for G7 countries and controlling for the determinants of net savings, show that German firms with foreign operations tend to save more, suggesting that the savings may reflect the desire to fund foreign affiliates. This is also the case in the U.S. but not significantly in other G7 countries (Ivanova and Raei, 2014).

Why were higher corporate savings not distributed to shareholders through dividends?

14. Increased profits and declining investment are only part of the equation. The remaining question is why the increased profits were not passed on to the household sector as dividends? This may be have been the result of the 2000 tax reform which gave more favorable tax treatment to earnings retention relative to earnings distribution (Kaserer et al., 2012). The reform was motivated in part by the desire to reduce the high leverage of German corporations and strengthen their equity base. Further changes in corporate taxation in 2008 reduced some

Investment by Non-Financial Corporations

(Percent of value added)



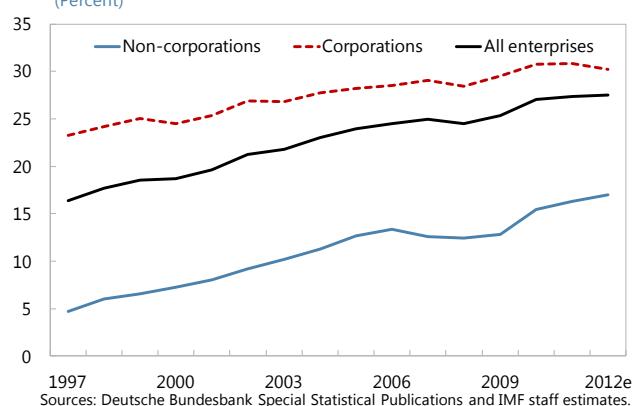
Sources: OECD and IMF staff calculations.

⁴ See "The German-Central European Supply Chain Cluster Report," IMF Country Report No. 13/263.

of the preference towards retained earnings in the corporate sector, but introduce it for non-incorporated firms—a large segment of enterprises.

15. From an investor point of view, the effect has been receiving the compensation through increased capital gain in the form of higher equity values. Since households' propensity to save out of capital gains tends to be higher than out of dividends (Baker et al., 2007), this change in corporate payout policy may have resulted in a higher total saving rate (not just in higher corporate net savings), thus pushing up the current account surplus.

Germany: Equity Ratio of Non-Financial Enterprises (Percent)



The global factors behind corporate savings: precautionary motives and the rising role of R&D

16. Corporate savings can also be used to build up cash holdings. A growing corporate finance literature has identified a global trend towards greater cash holdings in the corporate sector and has studied its determining factors. Several key studies (for the U.S. mainly) identify precautionary motives and the rising role of R&D as the main determinants (Almeida et al., 2004, Bates, 2009). The overarching theme is that firms reserve cash to hedge against future shortfall in cash flow and in order to avoid the opportunity costs of foregoing investment opportunities due to financing shortfalls. Over time, cash ratios have increased as firms' cash flows have become more volatile. In addition, the rising importance of R&D activities and the difficulty to obtain external finance to fund R&D may have led firms to hold more cash.

17. These global factors (precautionary motives and the increasing role of R&D) help explain growing cash holdings in German corporations after 2000 (Ivanova and Raei, 2014).⁵ However, the regression residuals for Germany increase after 2000s, unlike those for other countries, suggesting the presence of German-specific missing variables which might include the tax regime change or labor market reforms discussed above.

⁵ Following the literature (Bates, 2009), the paper regresses the cash-to-assets ratio on measures of precautionary savings (cash flow volatility), firm size, measures of investment opportunities, firm leverage, cash flow to assets, net working capital to assets, capital expenditures to assets, research and development expenditures to assets, and dividends to assets. The sample includes listed firms from G7 countries over 1991–2011.

D. Conclusions

18. Global factors as well as German specific developments boosted the current account surplus over the last decade. While there are common global drivers for the NFCs shift to a net lender position, several German-specific factors played a role, notably the labor market reforms in the 2000s, the business tax reforms, and the globalization of German firms' production chains. The households' saving–investment gap widened in the early 2000s as the pension reforms and growing income inequality boosted households' savings and residential investment declined by the end of the reunification construction boom.

19. Over the medium term, some of these factors may play a diminishing role, and thus lead to some gradual rebalancing of the current account. As the proportion of retirees in the population starts to rise rapidly in the next decade, households' savings may start to decline. In the short-term, the recent revival of housing prices linked to low interest rates is leading to an increase in residential investment, though the expected decline in the size of the population because of aging may counter this trend in the medium-term. While the general government net lending is expected to remain close to its current level (0 to 0.5 percent of GDP), stronger growth in real wages reflecting tight labor market conditions may dent profits in the NFCs and help reduce corporate savings.

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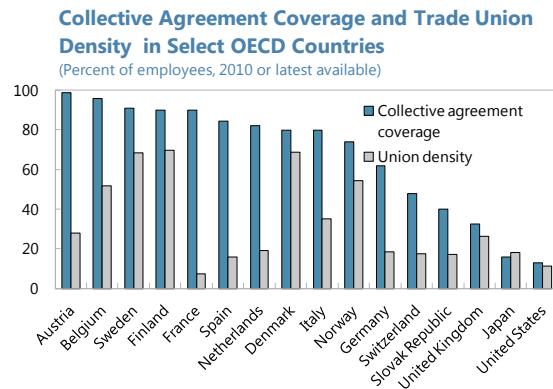
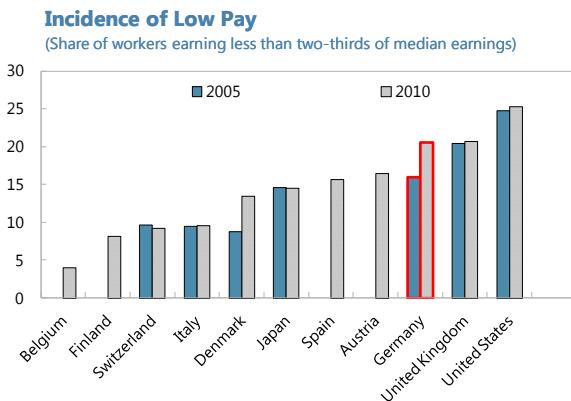
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II. THE INTRODUCTION OF MINIMUM WAGE IN GERMANY: SOME CONSIDERATIONS¹

This chapter discusses the pros and cons and potential impact of introducing a national minimum wage in Germany as undertaken by the new coalition government. It argues that the current proposed level of €8.5/hour could entail non-negligible employment effects, particularly in the more vulnerable Eastern states, with limited benefits for families at the bottom of the income distribution.

A. Why a Minimum Wage in Germany?

1. **The new German coalition government is planning on a phased introduction of a national minimum wage of €8.5 per hour, effective in January 2015.** Contrary to many advanced economies, Germany does not have a nationwide minimum wage. Instead, collective wage bargaining agreements are used to set wage floors in several industries. The interest in a national minimum wage has been spurred by the fact that the share of workers covered by collective agreements has been on the decline, while the low wage sector and atypical employment have risen. Low wage work not covered by collective agreements and atypical employment are more common in the non-traded services sector, while they are less common in the manufacturing sector.



¹ Prepared by Faezeh Raei (EUR).

2. **The proposed minimum wage of €8.5 per hour would be binding for a sizable fraction of the labor force, especially in East Germany.** Although there is a degree of uncertainty around this estimate because data on the distribution of hourly wages is not very reliable, expert estimates indicate that the proposed minimum wage would be binding for approximately 10 percent of employees once it will become effective in 2015. This figure rises to 15-20 percent of workers in some federal states where unemployment rates are already relatively high. According to statistics from the socio-economic panel survey as of 2011, low wage earners are disproportionately concentrated in the East, among part-time workers, mini-job holders and women, and more prevalent in retail trade and business services (DIW Berlin 2013), so these groups will be affected the most by the new legislation.

Characteristics of Low Wage Earners

| (Percent, 2011) | Share in respective group earning hourly wage lower than 8.5 euros |
|-------------------------------|--|
| Region | |
| West | 15 |
| East (including Berlin) | 27 |
| Employment status | |
| Full-time employees | 10 |
| Part-time employees | 18 |
| Marginally employed/mini jobs | 54 |
| Gender | |
| Male | 12 |
| Female | 21 |
| Total employed | 17 |

Source: DIW Berlin 2013.

3. **The draft minimum wage legislation currently under discussion in Parliament includes few permanent exemptions but some phase-in arrangements until 2017.** Only youths (under the age of 18) and apprentices and interns during their education are to be exempted. Formerly long-term unemployed will be exempt from the minimum wage under certain conditions during their first six months of employment. No sector would be permanently exempt and there will not be any regional differentiation despite a much lower wage level in East Germany. However, there will be a phase-in period until 2017, during which sectors with an existing minimum wage agreement lower than €8.5 in place may continue to pay such low wages.

4. **As of March 1, 2014, sectoral minimum wages for employees in 14 industries were in effect, varying between €6.50 and €13.95 per hour,** 13 of them have been declared generally binding by the government. It's worth noting that the majority of these sectoral arrangements set different minima for the eastern and western states. The phase-in exemptions may spur strategic behavior in some sectors to lock-in sectoral wages below €8.5 until 2017. For example, a generally binding minimum wage was agreed for the first time in the hairdressing trade from 1 November 2013 (€7.50 in the West and €6.5 in the East).

B. The Case for and Against the Minimum Wage

5. The arguments for and against a minimum wage reflect the trade-offs between efficiency and equity. Below we summarize the arguments taking into account the interaction between the labor market and the welfare system.

Arguments against:

- While it provides a floor guaranteeing a certain level of wage income, the minimum wage may exclude low-skilled workers from employment and therefore have adverse effects on both welfare and efficiency.
- In Germany, collective bargaining agreements between firms and unions have worked well and practically serve as a wage floor for many industries.
- A minimum wage will hamper Germany's competitiveness.
- It is a highly distortive redistribution tool. Redistribution can be achieved with fewer distortions through taxes and transfers (e.g, by enhancing in-work benefits).
- The minimum wage may lower wage inequality but not the inequality of household disposable income. Low wage earners (many of them secondary earners) are not concentrated in the lower parts of the income distribution but rather scattered across the distribution. For poor families, wage increases may replace welfare transfers and therefore be subject to high effective marginal tax rates, leaving the distribution of income relatively unchanged (Mueller and Steiner (2013)).

Arguments for:

- Though minimum wages set through collective bargaining between firms and unions have worked well in certain industries, the number of workers under such schemes has fallen. In addition, such schemes typically cover better paid jobs, so they do not address the need for income redistribution toward low-skilled workers.
- In Germany, the government redistributes income toward low-income workers through a wage top-off scheme (Box 1). In the absence of a minimum wage for low paid jobs, this scheme has expanded the labor supply at the low end resulting in a decline in wages. Thus employers of low-skill workers have become "windfall beneficiaries" of the government wage top-off scheme, increasing its cost and lowering the effectiveness of the program.² A minimum wage, if set properly, would make the wage top-off program a more effective redistribution tool (Blanchard et al (2013)), though at the potential cost of some increase in unemployment.³

² For an empirical assessment of this effect in the case of the U.S. see Rothstein (2010).

³ For a theoretical analysis showing that a minimum wage can facilitate income redistribution toward low-skilled workers, see Lee and Saez (2012).

C. Assessing the Impact of Minimum Wage in Germany

6. The impact of minimum wage on employment is one of the most studied and debated empirical topics in labor economics. In this section, we briefly discuss the impact on employment and the net impact on aggregate consumption of the proposed minimum wage in Germany based on existing literature.

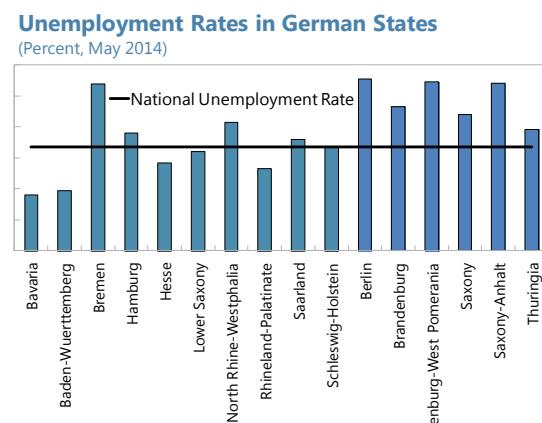
Impact on employment:

7. **For modest increases in minimum wage, the empirical evidence suggests that the effect on employment is small** (Schmitt (2013), Betcherman (2012), and OECD (2006)). In these cases, adjustments take place through various channels such as reduction of hours worked, reduction of non-wage benefits or training, changes in employment composition, and higher prices passed on to consumers.

8. **For Germany, however, existing estimates point to non-negligible effects on employment from a minimum wage of €8.5 per hour.** Available micro studies point to job losses of 60,000 to 850,000 persons (0.1 to 2 percent of employment) depending on various underlying assumptions. The labor demand elasticities found in these studies range from -1 to -0.13 and are higher in the East and for female workers, implying larger adverse employment effects for the latter groups. Some caveats are needed: (i) the majority of estimates did not take into account the proposed exemptions that were not known at the time of the analysis; (ii) the underlying surveys data are for 2011 and before, creating uncertainties in interpreting the results for introduction of minimum wage in 2015; (iii) some key analysis inputs such as distribution of hourly wages were not directly available in existing micro surveys and are estimated by employing a host of assumptions, further creating divergence among estimates. All in all, while the existing estimates maybe biased upwards, one can expect the impact to be felt stronger in eastern states due to higher share of affected workers, relatively higher unemployment rates, and larger labor demand elasticities in these regions.

Impact on income inequality and consumption:

9. **while wage inequality will be lower, the inequality in family disposable income may not change much** ((Muller and Steiner (2013), Knabe and Schob (2008)). The reason lies in the characteristics of low wage earners and the interaction of minimum wage with tax and benefit system in Germany: (i) many low wage earners are not from low income families, but rather secondary earners or students; (ii) higher wages for low income earners will lead to higher taxes or translate into lower in-work benefits, resulting in a small change in total disposable income for these



Sources: Federal Statistical Office and Haver Analytics.

workers; and (iii) the higher income will be partly offset by price increases, which will also curtail real income gains. As such, the impact on disposable income and aggregate consumption is estimated to be small.

Table 1. Selected Studies on Labor Demand Elasticities and Minimum Wage Impact in Germany

| Authors | Labor demand elasticity (low wage) | Employment effect | Impact on demand | Comment |
|--------------------------------------|---|---|------------------------------------|---------------------------------------|
| Muller and Steiner (2013) | -0.13 to -0.5 (West Male/Female) -0.3 to -0.4 (East Male/Female) | 50 to 300,000 (West) 15 to 300,000 (East) | Small positive | Introduction of 8.5 euro minimum wage |
| Lichter and Peichl (2012) | -0.5 to -1 short-run/long-run | N/A | N/A | N/A |
| Knabe and Schob (2008) | -0.75 | 850,000 | Small positive | Introduction of 7.5 euro minimum wage |
| Joint Economic Forecast Group (2014) | N/A | 200,000 in 2015 | GDP decline of 0.1 percent in 2015 | |

10. Social assistance through in-work benefits may be a more targeted and effective means of income redistribution toward the lowest income groups. In Germany, 1.3 million workers in 2013 received social assistance through in-work benefits (Box 1). This is far less than the estimated 4-6 million workers that will be affected by the minimum wage. Moreover, as discussed in previous section, for low income families receiving benefits the additional wage income from the introduction of minimum wage will substitute social assistance, thereby reducing the effectiveness of the minimum wage as a measure of income redistribution. More targeted redistribution toward the lowest income groups can be achieved by enhancing means-tested benefits such as the in-work benefit in place in Germany, and gradual phase out of benefits as income rises (IMF, 2014).

D. Future Decisions about the Minimum Wage

11. With a nationwide minimum wage in place, a carefully designed mechanism to update the level of the minimum-is crucial. Countries have varying arrangements in place, ranging from automatic indexation in France to no automatic mechanism for the federal minimum wage in the U.S. (Table 2). The U.S. and Canada have systems of federal as well as regional minimum wages. The

U.K. system is designed with particular care to take into account that increases in minimum wage, not only affects employers and employees but also the unemployed, consumers, and the economy at large. The Low Pay Commission in the U.K. consists of representatives of trade unions, employers' organizations, and independent experts, all with voting rights and all serving in their personal capacity. The commission is explicitly instructed to take into account the benefits and costs to the whole society rather than just employers and employees. The current draft law in Germany envisages that future adjustments of minimum wage will be decided by the government following the recommendation of a commission comprising representatives of the employers' organizations and trade unions (in equal numbers), a chair nominated jointly by both organizations, and two academic advisors. The latter, however, will not have voting rights.

Box 1. Germany's In-Work Benefit System

Many advanced economies including Germany use in-work benefits as part of their social protection arrangements. These programs, basically acting as negative income taxes, deliver welfare benefits to low income families while encouraging work. Examples include the Earned Income Tax Credit (United States) or Working Tax Credit (United Kingdom).

In Germany, the in-work benefit system is administered as Unemployment Benefit II (also known as Hartz IV benefits, or wage top-offs) and works as follows: For low-paid workers or job seekers whose regular unemployment benefit has expired, the government covers—under a number of conditions—the difference between the “normal requirement” for living and earned wages. The “normal requirement” as of January 2013, is € 382 per month for a single person (additional 90 percent for the partner and 60-80 percent for children) plus housing, heating, and healthcare benefits. The recipients of top-offs are required to actively pursue integration into the labor market and may be required to accept “reasonable” legal job offers. The rules governing what is considered a “reasonable” job have been tightened with the 2005 Hartz IV reforms.

The number of workers receiving social assistance is far lower than those affected by the minimum wage. In 2013, 1.3 million workers received social assistance in the form of in-work benefits, far lower than the estimated 4-6 million working on hourly wages below € 8.5 per hour. This is because many of low wage earners are secondary earners or students who live in families where the primary earner receives a sufficiently high income so as to not qualify for social assistance.

Table 2. Summary of Minimum Wage Systems in Select Advanced Economies

| | Type of minimum wage | Exceptions/Reductions | Updating procedures |
|----------------|--|--|--|
| Canada | Federal and regional | Excluding some apprentices and farm workers. | No automatic indexation at federal level. Provinces vary in their mixed use of indexation rules and advisory councils. |
| France | National | Government employees are excluded. | Annual update is indexed by the consumer prices and plus half of the increase in purchasing power of average worker. An automatic compensatory increase occurs if inflation goes above 2% in the middle of the year. The government can also decide to increase the minimum wage further upon the recommendation of a council of experts. |
| Japan | Sectoral and regional minimum wages (hourly and daily) | Excludes some trainees and workers engaged in intermittent labor. | Regional minimum wages are revised each year in consultation with local tripartite minimum wage councils, taking into account changes in the cost of living. |
| United Kingdom | National | Reduced rates for youth and some apprentices and trainees based on age and tenure. | Rates are set by government based on annual reports by the Low Pay Commission (LPC), an independent body appointed by government and consisting of three trade unionists, three employers, and three labor market relations academics, all acting on their personal capacity. The remit of LPC is to maximize the minimum wage without putting the jobs of low-paid workers at risk. |
| United States | Federal and regional | Exemptions for commissioned sales employees and certain farm workers. Reduced rates for youth during the first 90 days of their employment, workers with disabilities, full-time students, and trainees. | No automatic rules at federal level. Proposals are being currently discussed for an increase and a subsequent indexation mechanism. Some regions have indexation rules. |

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III. WHICH POLICIES CAN BOOST GERMAN GROWTH AND REDUCE THE CURRENT ACCOUNT SURPLUS?¹

This chapter argues that certain policies which would boost domestic demand are not only in Germany's best interest, but are also associated with positive spillovers which could support activity across the euro area. Motivated by pressing infrastructure needs, simulations suggest that higher public investment would stimulate domestic demand in the near term, but also raise German output over the longer term and decrease the current account surplus. In addition, beneficial spillovers would support the recovery across the region. Greater investment to reduce energy-sector bottlenecks would have similarly beneficial domestic and regional effects. The current low-interest rate environment presents a window of opportunity to finance higher investment at historically favorable rates. Implementing reforms in the nontraded service sector would also durably increase Germany's GDP and productivity.

1. **Over the last few years, weak investment and lagging service sector productivity have been a drag on German growth.** In spite of strong corporate savings, domestic demand has been weighed down by weak private investment (**Appendix Figure 1**), which has contributed to the persistent current account surpluses. Weak domestic demand and reliance on export-led growth in Germany against the background of large negative output gaps in the euro area periphery and beyond have raised concerns about adverse spillovers from Germany to the rest of the world. Germany also has the second lowest public investment-to-GDP ratio in the OECD and net public investment has been negative since 2003 (**Appendix Figure 2**), while pressing infrastructure needs have been identified, particularly in the areas of transportation (for example, owing to aging bridges and roadways).² In addition, the rising importance of renewable energy sources in the context of the *Energiewende* requires substantial investment, in part to alleviate capacity bottlenecks, while uncertainty over future energy prices appears to be holding back private investment. At the same time, productivity in the nontraded services sector lags that in the export-oriented manufacturing industries, and despite continuous improvement in economy-wide product market regulation, there is still scope for reducing barriers to competition in some services sectors.

¹ Prepared by Selim Elekdag (EUR) and Dirk Muir (RES).

² Various studies place public infrastructure needs in transport alone at 0.2–0.4 percent of GDP per year, particularly owing to aging bridges and roadways. Estimates by the Cologne Institute for Economic Research (IW) suggest transport infrastructure needs of around €4 billion per year, while the “Daehre Commision Report” suggests a minimal need of €7.2 billion. The think tank DIW reports an estimate of around €10 billion per year (including pent-up needs) for maintenance and extension of the transport network. More generally, schools and kindergartens, particularly at the municipal level, represent other examples of infrastructure backlog. Indeed, KfW surveys indicate a perceived municipal investment backlog of over €100 billion, of which transport (€27–31 billion), schools (€24–27 billion), and public administration buildings (€11 billion) comprise the largest needs. Relatedly, IW estimates needs of €120 billion over the next decade, split evenly between transport (already noted above), broadband communications network, and the energy sector (with the latter in the purview of the private sector).

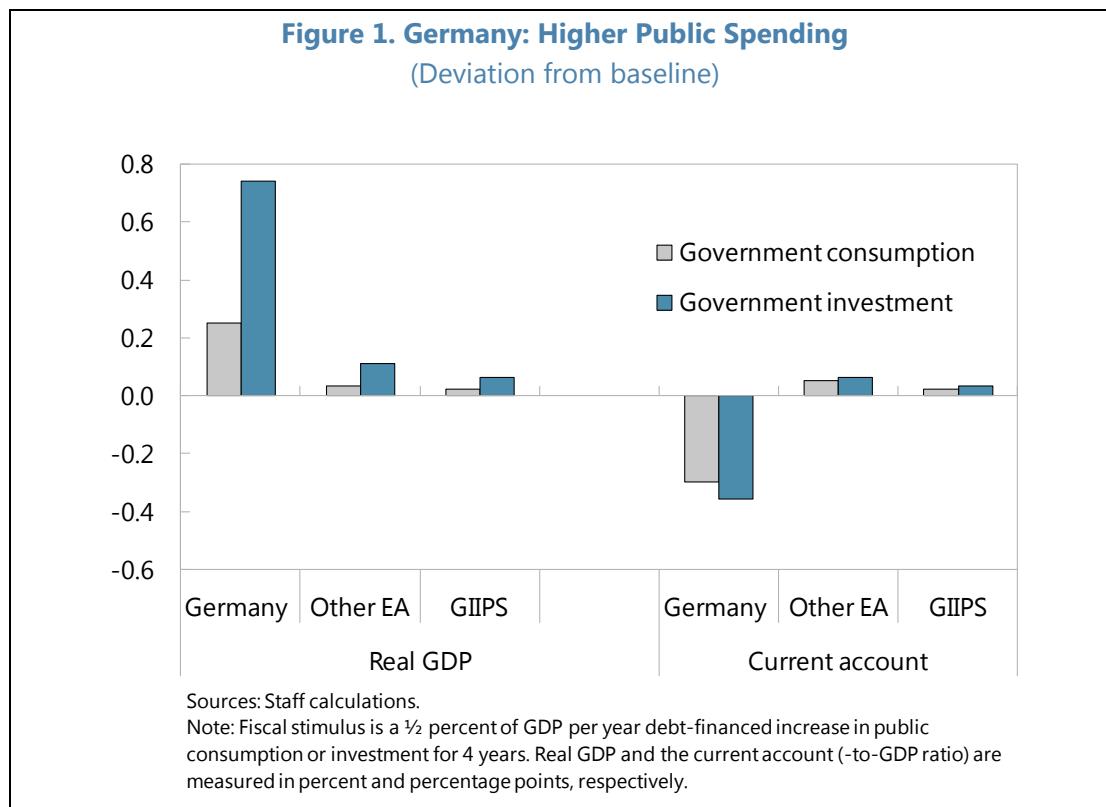
2. **This note explores the quantitative implications of policies which aim to raise German growth and, as a byproduct, lower the current account surplus as well as generating positive regional growth spillovers.** Specifically, model-based simulations are used to trace out and compare the domestic impact and spillovers associated with three policy experiments: (1) an increase in government investment, (2) an increase in private energy sector investment, and (3) reforms that reduce mark-ups in the services sector. An extended version of the IMF's Global Integrated Monetary and Fiscal model (GIMF) is calibrated to capture the main features of Germany, the "GIIPS" (Greece, Ireland, Italy, Portugal, and Spain), other euro area countries ("OEA"), the United States, Emerging Asia, and the rest of the world (ROW).³

A. Higher Public Investment

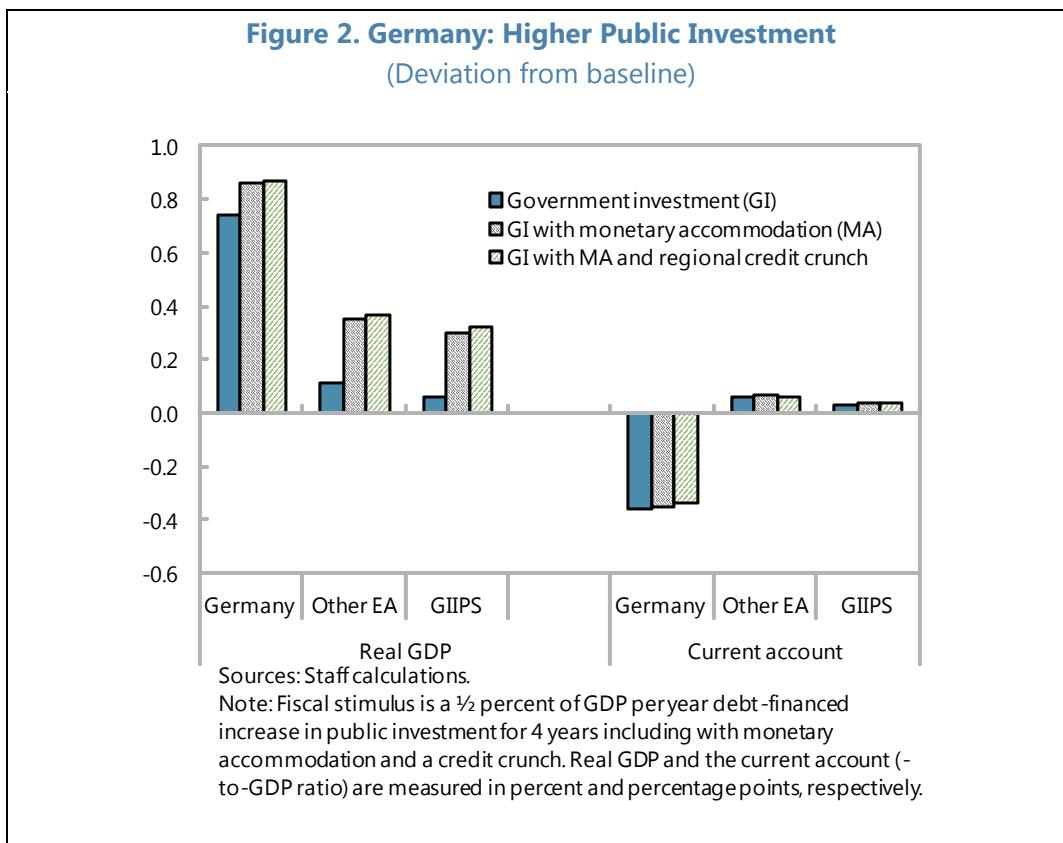
3. **In contrast to other forms of fiscal stimulus, higher German public investment holds the most promise for durably raising real GDP.** The impact on real GDP (as a percent deviation from the baseline) and the current account balance (as a percent of GDP, difference from baseline) in Germany, the OEA, and the GIIPS from two alternative policies: (1) a $\frac{1}{2}$ percent of GDP, 4-year, debt-financed increase in government investment; and (2) an equivalent increase in government consumption is shown in **Figure 1**. In contrast with an increase in public consumption, an increase in public investment raises productive capacity permanently as it adds to the government stock of capital. In addition, in line with the literature, improved public infrastructure is assumed to have a positive effect on total factor productivity in the private sector, which, in turn, fosters higher private investment and a further permanent increase in productive capacity.⁴ Moreover, because a part of the expansion is productivity-induced, the increase in aggregate demand has a smaller impact on inflation than an increase in government consumption, muting the response of monetary policy. All in all, the simulations suggest that German real GDP rises by $\frac{3}{4}$ percent and $\frac{1}{4}$ percent relative to baseline (in year four) in response to the public investment or consumption increases, respectively. The peak impact (in year two) on the German current account, at around 0.4 percentage points, is more modest and similar for the two policy experiments.

³ For further details, see, for example, Elekdag, S. and D. Muir, 2013, "Trade Linkages, Balance Sheets, and Spillovers: The Germany-Central European Supply Chain," IMF Working Paper 13/263.

⁴ As in other studies, public investment is assumed to raise aggregate productivity in GIMF (in 't Veld, 2013). The output elasticity of public capital is conservatively calibrated at 0.14 following Ligthart and Suarez (2011), in contrast to values ranging from 0.1 to 0.4 with an average greater than 0.2 (Aschauer, 1989; Glomm and Ravikumar, 1997). This value is set at 0.1, and sensitivity analysis using alternative values of 0.05 and 0.15 yield results similar to those report in the paper.



4. **The beneficial spillovers associated with higher German public investment can be meaningful, while those associated with public consumption are limited.** Comparing the two types of stimuli also makes it clear that higher German public investment has greater growth spillovers than higher public consumption (**Figure 1**). Specifically, the peak effect is higher GDP of 0.11 and 0.06 in the OEA and the GIIPS, respectively, in the case of the public investment stimulus, in contrast to negligible increases in the case of public consumption. This reflects the stronger and more persistent effect of public investment on Germany's aggregate demand and the more limited effects on euro area inflation (and thereby less monetary tightening by the ECB). While the model treats the GIIPS as a group, effects vary depending on, *inter alia*, the strength of the trade linkages with Germany, implying larger spillovers to Italy, for example. Spillovers on the current account balance in the GIIPS, however, are smaller regardless of the policy.



B. Accommodative Regional Monetary Policy

5. **The domestic impact of higher German public investment and the associated spillovers are even larger if monetary policy remains accommodative.** The model assumes that before the policies are implemented the economy is operating at full capacity—that is the output gap is zero. Thus, any policy experiment that leads to an expansion of aggregate demand in the euro area leads to an increase in inflation, triggering a tightening of monetary policy because of the central bank's reaction function (the ECB has a price stability objective). However, in the present circumstances, in which there is a sizable negative output gap in the euro area and the ECB stance is constrained by the zero lower bound, it may be more plausible to assume that an expansion in German public investment will not cause a monetary tightening. Accordingly, the simulations are repeated with policy rates kept unchanged for four years (Figure 2). The result is that the positive effect of higher public investment on growth both in Germany, the OEA, and the GIIPS is larger, because of the lower prevailing real interest rates (0.86, 0.35, and 0.30 percent, respectively)—with the marked increase in the beneficial spillovers to the GIIPS, for example, under monetary accommodation especially noteworthy (with GDP increasing by 0.30 percent, instead of 0.06 percent).

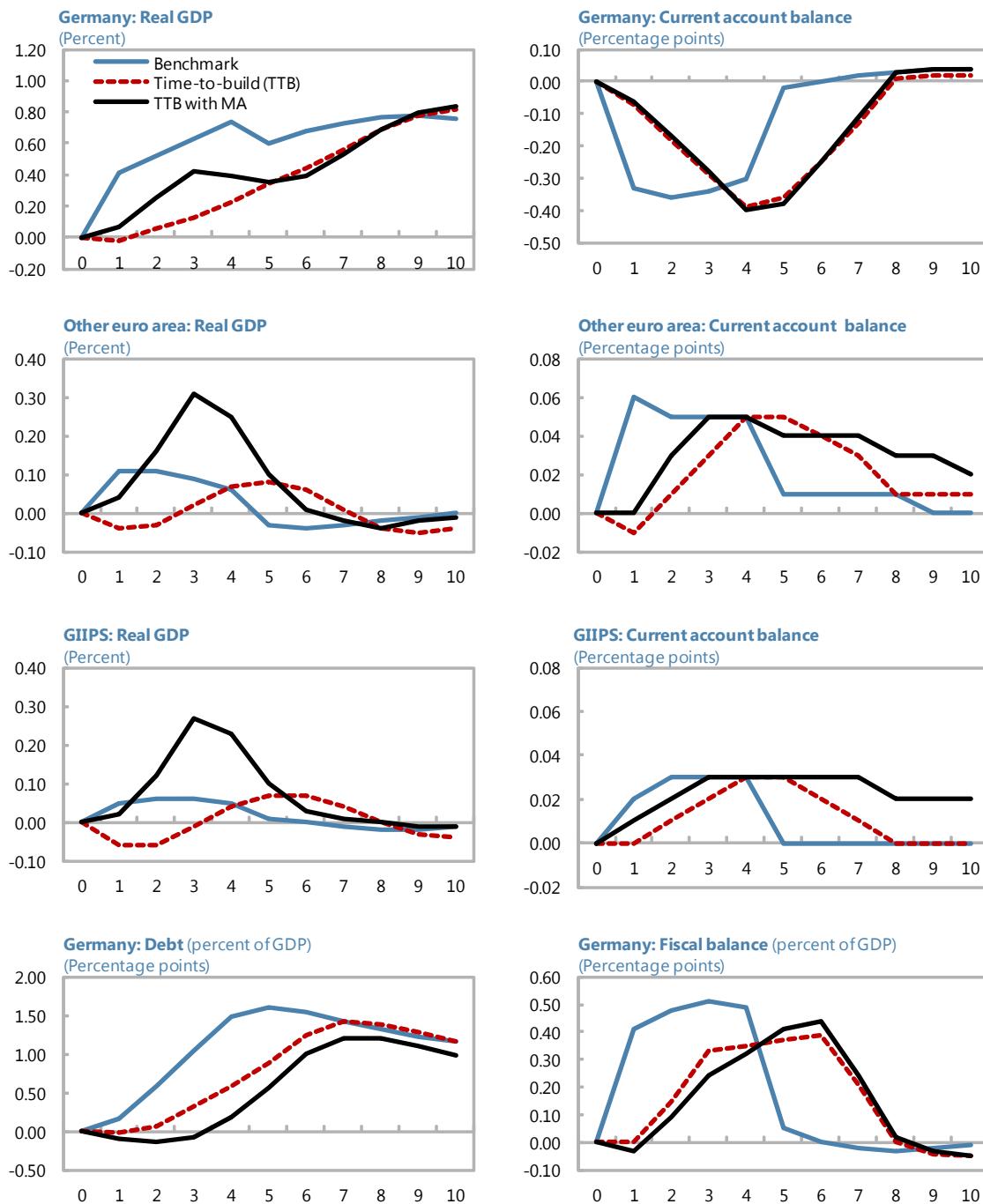
6. **Regional spillovers from higher German public investment could be even larger if there is a credit crunch in the euro area periphery.** While regional financing conditions have generally improved more recently, household access to credit is still tight and corporate spreads are still relatively high. In such an environment (a mild "credit crunch"), spillovers are larger, including

when monetary policy is accommodative (**Figure 2**). Higher growth triggered by the German stimulus helps relax the borrowing constraints in the region, and boosts consumption (especially for liquidity-constrained agents) and investment across the OEA and the GIIPS.

C. Implementation Delays

7. Implementation delays associated with higher German public investment postpone the eventual rise in GDP. Many projects, especially infrastructure, require coordination among federal, state, and local governments and have to go through a long process of planning, bidding, contracting, construction, and evaluation. In fact, as noted in Leeper and others (2010), the amount of government investment authorized often deviates substantially from contemporaneous outlays, even for some projects which are claimed to be "shovel ready." To model these delays, the IMF's GIMF is extended to incorporate a time-to-build setup to characterize the formation of public capital in the spirit of Kydland and Prescott (1982).⁵ The same benchmark increase in German public investment is simulated, but with investment delays (time-to-build), and with monetary accommodation (**Figure 3**). In contrast to the benchmark calibration, the increase in real GDP is more gradual because it takes time to build up the stock of government capital (which only increases the productivity of labor and private capital upon completion). With implementation delays, government investment boosts aggregate demand in the short run, but the productivity gains and higher growth potential associated with a higher stock of public capital occur with a lag. Hence, while the short-run growth implications differ depending on whether or not the simulations incorporate implementation delays, the longer-run output gains are similar. Moreover, even with implementation delays, regional spillovers are appreciable when monetary policy remains accommodative. A byproduct of implementation delays is a deferred and somewhat smoother deficit profile, implying less of an annual budgetary burden.

⁵ In this model, government investment turns into public capital through a time-to-build process, reflecting the lags between project initiation and completion that are observed in reality. The time-to-build process implies a distinction between when spending is authorized for a project, to when it is disbursed, and the investment actually occurs. It is often the case for public spending projects that the proportion of investment that occur each period is a small fraction of the authorized appropriation. As in Leeper and other (2010), this modeling approach differs from others in the literature, which typically assume that authorized spending is immediately implemented and is immediately productive.

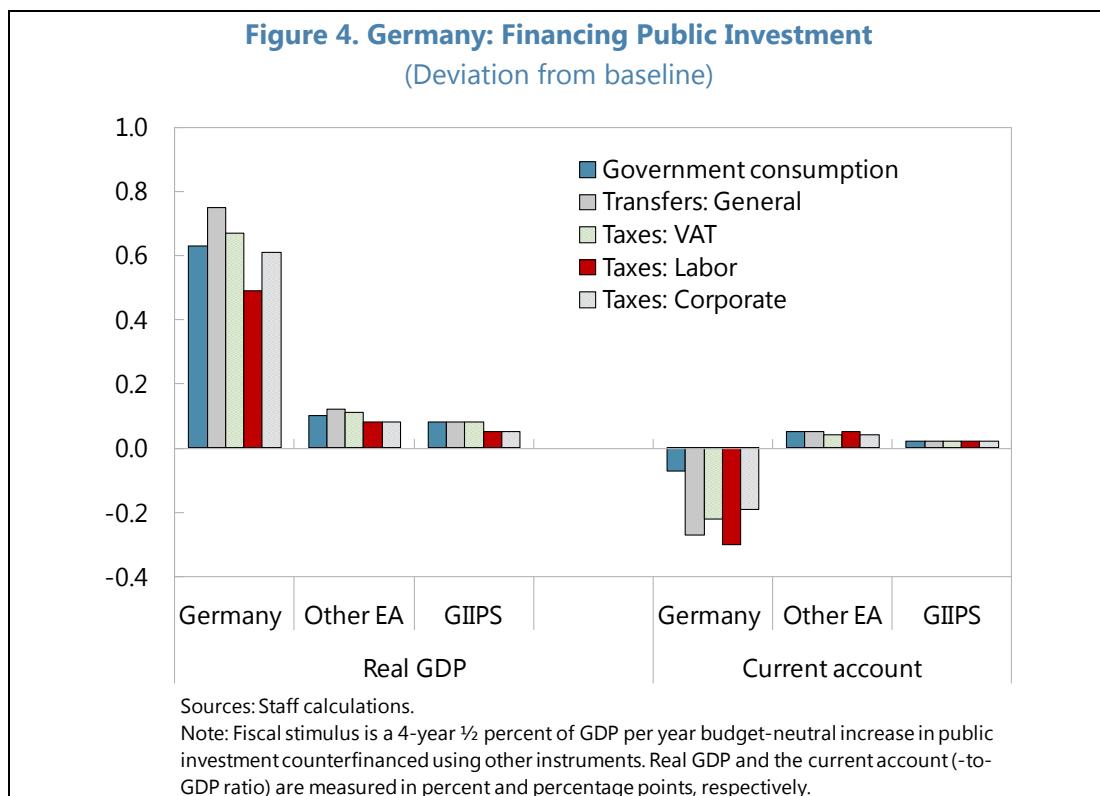
Figure 3. Higher German Public Investment With and Without Time-to-Build

Source: Staff calculations.

Note: Fiscal stimulus is a 4-year $\frac{1}{2}$ percent of GDP per year debt-financed increase in public investment, with and without 4 years of monetary accommodation (MA) with and without a 3-year time-to-build (TTB) feature. Real GDP and the current account (-to-GDP ratio) are measured in percent and percentage points, respectively.

D. Financing

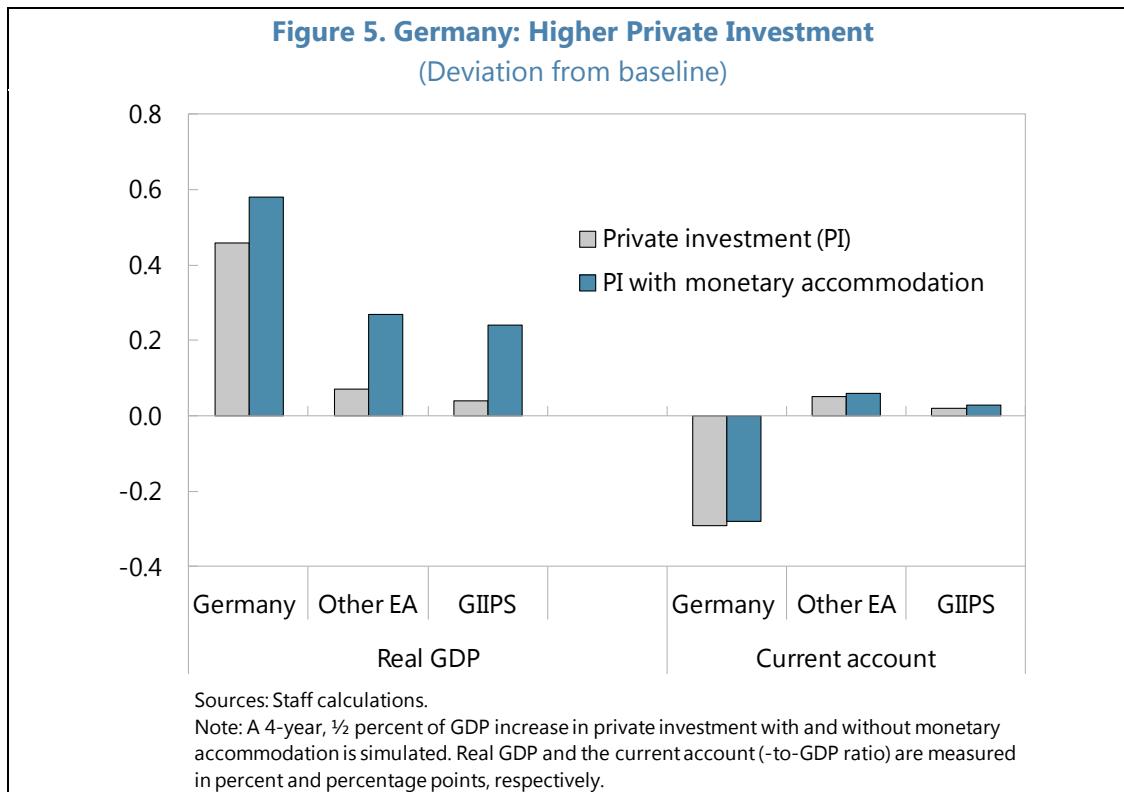
8. **The positive effects of public investment on short-term growth would be smaller if the projects were financed by instruments other than debt.** There are various ways to finance greater German public investment. Because public investment presumably would also benefit future generations, from an intergenerational equity perspective, it appears justified to finance these outlays partly via debt issuance. In addition, the current low-interest rate environment presents a window of opportunity to finance higher investment at historically favorable rates. Alternatively, higher government investment could be financed by a combination of government consumption or transfer reductions, or through higher taxes. Simulations suggest that a budget neutral increase in public investment financed via higher taxes or lower transfers are generally associated with the lowest and highest impacts on real GDP, respectively (**Figure 4**).



E. Higher Private Investment

9. Higher energy sector investment in Germany would boost growth, facilitate rebalancing, and generate positive spillovers. The rising importance of renewable energy (RE) requires substantial investment in the national electrical grid to deliver electricity from suppliers to consumers, which are typically not close. This significant increase of RE in the North and the reduced nuclear capacity in the more industrial South along with a slow pace of network expansion have led to bottlenecks. Accordingly, estimates show that considerable investments are required for the expansion of RE for electricity and heat generation, power grids (transmission and distribution), systems integration (storage), and energy-efficient building. These investments needs correspond to €27–38 billion, or 1-1½ percent of GDP, per year until 2020. While energy sector reforms are planned, public opposition to grid expansion and uncertainty about future costs, exemptions, and the regulatory framework more generally seem to be holding back investment as indicated by industry surveys. Therefore, an earlier resolution of uncertainty associated with energy policy would facilitate future planning and could thereby boost private sector investment within and outside the energy sector. In this context, to assess the implications of higher German private investment, a 4-year, ½ percent of GDP (per year) increase in private investment is simulated (in part to facilitate comparability to the public investment scenarios discussed above, **Figure 5**). German GDP increases by 0.5 percent above baseline, and the current account balance is reduced by 0.3 percentage point (mainly on account of higher imports associated with the more elevated level of domestic demand). Regional spillovers are appreciable and even higher when monetary policy is accommodative.⁶

⁶ The energy sector is not modeled separately in GIMF, so the shock is to aggregate investment.



F. Service Sector Reforms

10. Service sector reforms which lift German potential output would also reduce the current account surplus and could be associated with some positive regional growth

spillovers. While there have been continuous improvements in economy-wide product market competition over the past 15 years, certain sectors, for example, those pertaining to retail and professional service remain relatively overregulated (see Chapter 3, Selected Issues Papers). Therefore, to mimic the implications of a renewed comprehensive reform effort targeting the services sector, the price markup in the non-tradable sector is permanently reduced by 2 percentage points over 4 years from 20 to 18 percent.⁷ These lower markups could be interpreted as the result

⁷ This version of GIMF has two sectors: traded and non-traded (which include non-traded services). The model is calibrated to match the value added of the traded sector which is about 40 percent (comprising agriculture, forestry, and fishing; total industry including construction; and accommodation and food services). For the non-traded sector, reforms are presumed to have an impact on industries outside of public administration and defense, education, and human health and social work (the latter comprising 18 percent of gross valued added). As noted, the simulation is conducted by reducing the baseline non-traded sector mark-up which is set at 20 percent (for a gross mark-up of 1.2). This calibration of the markup seems to be conservative, given the wide range of estimates in the literature. On the lower end, Varga and in t' Veld (2013) use 14 percent for German services sector (citing previous work by the EC for *final*, and not necessarily *non-traded*, goods over 1996–2007). In contrast, other studies find much higher mark-up estimates. For example, the ECB (2006) presents mark-ups for the total economy and non-financial business services

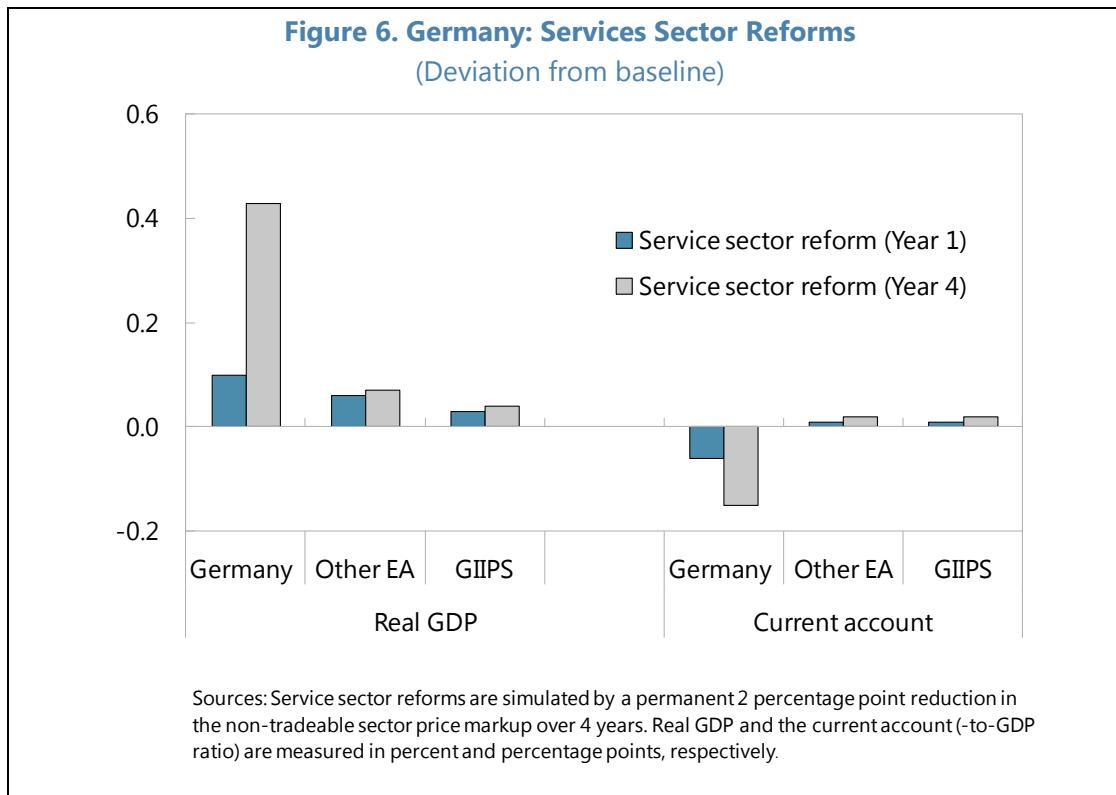
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of lowering entry barriers and therefore decreasing the price-setting power of incumbent firms (which operate in a monopolistically competitive environment). As a result, demand for the factors of production increase, which raises output in the non-tradable sector. Increased labor demand pushes up the real wage, leading to higher household purchasing power, which raises consumption. While the real (effective) exchange rate depreciation promotes export growth, the higher demand for capital stimulates investment, both in non-tradable and tradable sectors, and therefore yields a reduction in the German current account surplus by 0.2 percentage point of real GDP (**Figure 6**).⁸ The corresponding increase in German GDP is appreciable, over 0.4 percent after 4 years, or higher growth of 0.1 percent per year over the four-year period. Similar results would obtain if instead of a reduction in mark-ups, more competition boosted non-traded sector productivity by around 0.1 percent per year over 4 years.⁹ Regional growth spillovers are more modest.

for Germany exceeding 1.5 (that is, 50 percent) and 2.0, respectively, over 1981–2003. Christopoulou and Vermeulen (2008) estimate mark-ups for German market services exceeding 1.5 (1981–2004). Their sector specific mark-ups are also quite revealing. For Germany, mark-ups for financial intermediation (excluding insurance and pension funding), activities related to financial intermediation, real estate activities, other business activities, and other services activities are 1.99, 1.52, 3.27, 1.82, and 2.37, respectively.

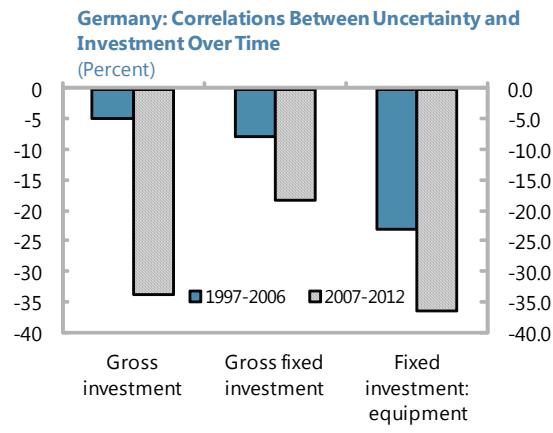
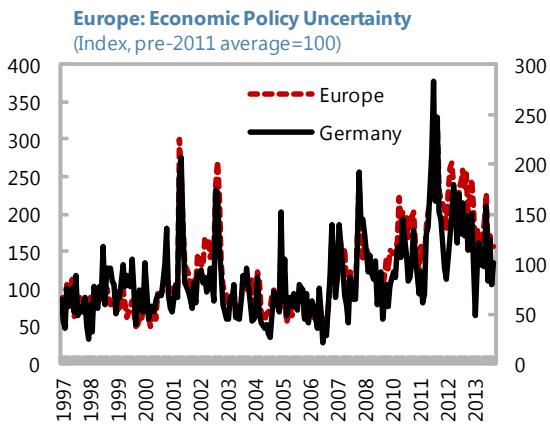
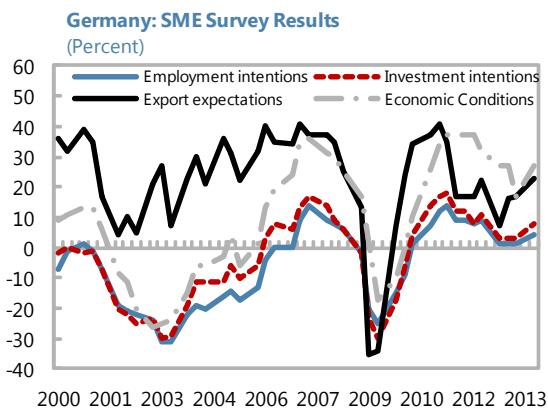
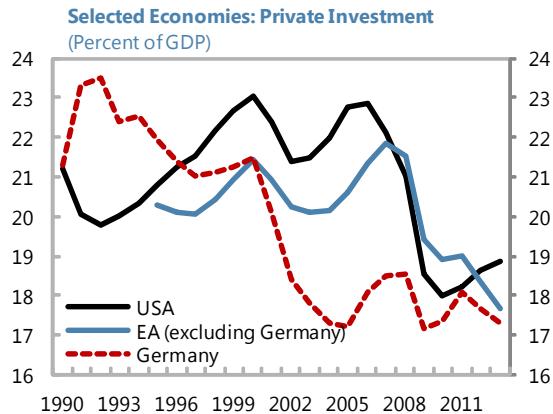
⁸ It may be worth emphasizing that the decline in the current account balance hinges on the higher investment response characterized by the simulated service sector reforms. Moreover, note that in the model, that the non-traded (services) sector is not an input for the tradable sector, which could therefore downplay the full impact on export growth associated with these simulated service sector reforms.

⁹ This is because lower mark-ups or higher productivity affect the wedge between the non-traded sector price and marginal cost in a broadly similar fashion. For concreteness, consider a simplified and linearized representation of the non-traded price, which is a function of the mark-up, μ , marginal cost, MC , and productivity, A : $P_{N,t} = \mu_{N,t} + MC_{N,t} - A_{N,t}$.



11. **In sum, higher public and private investment as well as service sector reforms can raise German real GDP durably.** At the same time, while decreasing Germany's current account surplus temporarily, these policies are associated with positive regional growth spillovers, albeit to a varying degree, which can promote economic recovery in the euro area. These policies are characterized by yielding higher productivity gains in Germany, which result in more durable growth gains than temporary demand stimulus policies alone.

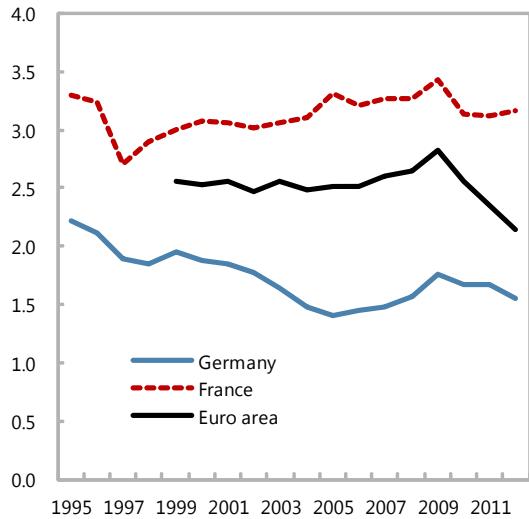
Appendix Figure 1. Private Investment



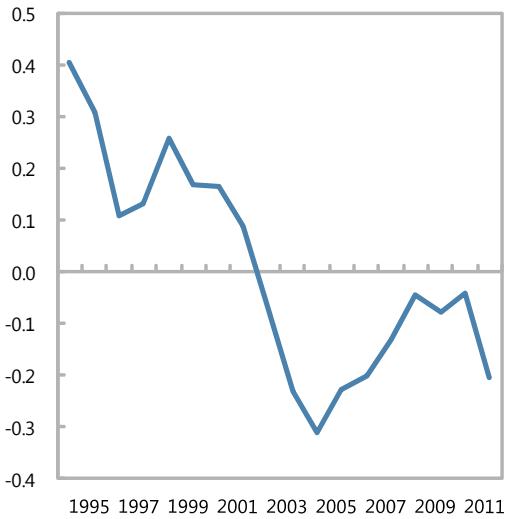
Source: DIHK; Haver Analytics; Baker, Bloom, and Davis (2012); policyuncertainty.com, and IMF staff calculations.

Appendix Figure 2. Public Investment

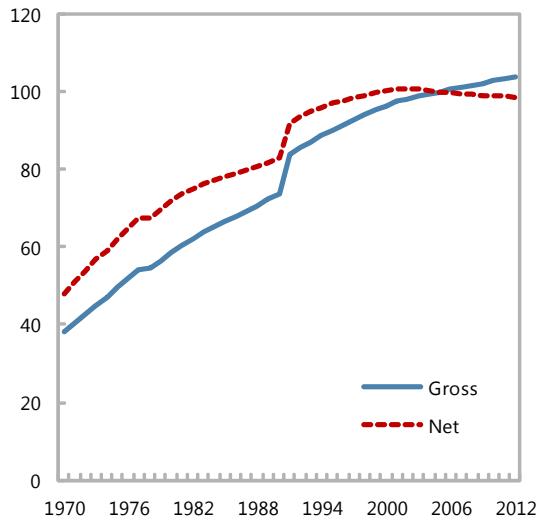
Selected European Economies: Public investment
(Percent of GDP)



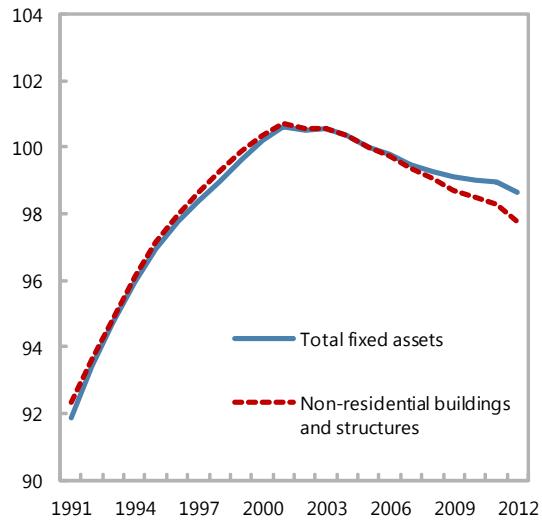
Germany: Net Public investment
(Net; percent of net domestic product)



Germany: Real Government Capital Stock
(Billions of 2005 euros)



Germany: Net Government Capital Stock
(Index, 2005=100)



Source: Haver Analytics and staff calculations.

Note: It is important to note that even within the euro area there can be differences in what is recorded as public versus private investment because the perimeter of general government varies across countries.

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IV. SERVICES SECTOR PERFORMANCE AND PRODUCT MARKET REGULATION¹

1. **The relative performance of the business services sector has improved over the past ten years but productivity growth remains low.²** While growth in the business services sector was trailing that of industry and that of OECD peers in the early 2000's, it increased during 2006-2011 in spite of the global financial crisis and overtook that of Germany's average OECD peer (Figure 1). This favorable outcome is the result of a relatively strong employment performance following the Hartz reforms. Yet at 0.6 percent per year during 2001-2006 and 0.2 percent per year during 2006-2011, labor productivity growth in the business services sector remains modest in absolute terms.

2. **Economy-wide product market regulation is supportive.** According to the 2013 OECD Product Market Regulation indicator, Germany is amongst the least restrictive countries in terms of economy-wide product market regulation. While barriers to entrepreneurship and state control could be further reduced, barriers to trade and investment are low.

3. **However there might still be scope for a fuller transposition of the EU Services Directive.** More than 200 legislative acts at the Federal and Länder levels were passed in order to transpose the Directive, and thousands of legislative acts at the municipalities level were screened and adapted as needed. An example cited by the European Commission as best practice was the revocation of the obligation to register a commercial operation (*Gewerbeanzeige*) for service providers who are temporarily active on a cross-border basis. Yet the official evaluation of the implementation of the Directive performed in 2012 noted that more could still be done in certain areas (EC, 2012). At the time of the evaluation, specific legislation for some sectors foresaw that tacit approval of applications for authorization (i.e. silence from the administration means approval) did not apply. Furthermore, rules seemed to differ across regions: some had foreseen tacit approval in areas where other regions had not. In addition, there were doubts as to whether authorizations applied to cross-border service providers could be justified by one of the four reasons recognized by the Directive (public policy, public security, public health, and the protection of the environment) and whether these requirements were proportionate. A parallel assessment (Monteagudo et al., 2012) found that across fourteen sectors only a minority of restrictions targeted by the Directive were fully abolished.

4. **Sub-sectors with negative productivity growth represent a significant share of the economy and would likely benefit from sector-specific competition-enhancing measures:**

¹ Prepared by Jérôme Vandenbussche (EUR).

² Per the OECD definition, the business services sector includes wholesale and retail trade, transportation and storage, accommodation and food service activities, information and communication, financial and insurance activities, real estate, renting, as well as business activities.

- Barriers to competition are still present in railways. Vertical integration of infrastructure and operations gives incentives to the incumbent to limit its competitors' access to the infrastructure. According to OECD (2014), the incumbent railways operator still provides three quarters of all freight transport, 87 percent of short-distance and over 99 percent of long-distance passenger transport services, and there is evidence of discrimination against competitors. The German Monopolies Commission proposed in June 2013 a liberalization plan that includes a strengthening of the regulator's powers to collect information, regulate prices and investigate potential market abuse (Monopolies Commission, 2013a). The plan also argued for the full ownership separation between infrastructure and transport operators (accompanied by the privatization of the incumbent's operations) although cross-country evidence on the benefits of vertical disintegration in railways appears to be mixed (Drew and Nash, 2011).
- In the area of postal services, the German Monopolies Commission also called in 2013 for the dismantling of the remaining significant barriers to competition and for a more effective regulatory supervision of competition (Monopolies Commission, 2013a). The list of measures includes a sale of the remaining share (23 percent) of the incumbent operator owned by the government as well as the end of the discriminatory VAT exemptions for nation-wide provision of universal postal services.
- In the area of retail trade, while regulation of promotional activities has been made less stringent over the past five years, the threshold surface limit at which regulation of large outlets applies is still restrictive in international comparison³ and existing firms still enjoy a certain degree of protection according to the 2013 OECD PMR indicators.
- Professional services (architects, auditors, engineers, lawyers, notaries, tax consultants) remain highly regulated. Chamber membership (and its associated high fees) is compulsory which represents a significant entry barrier. Price competition is restricted in most areas because of the existence of legally binding prices set by the government. Exclusivity rights are currently granted in several markets. Finally, restrictions on advertisement and ownership, although relaxed in recent years, also act as a barrier to entry.

³ Although they may hurt GDP growth, restrictions on the location of large retail outlets can be justified by urban planning and environmental reasons. In Germany, new large retail shops (above 1200 square meters) have to demonstrate that their presence has no negative effects on the traffic, the environment and urban sprawl.

5. Targeted sectoral measures would likely result not only in lower mark-ups in the targeted sectors but also in higher growth in those sectors and/or in downstream sectors. A simple cross-country scatter plot of annual labor productivity growth in retail over a five-year period versus the initial level of regulation in retail suggests that a less stringent regulatory environment boosts productivity growth in the same sector. Furthermore, cross-country econometric evidence indicates that more competition in the services sector increases value added and productivity in service-intensive downstream industries (Barone and Cingano, 2011; Bourlès et al. 2013).

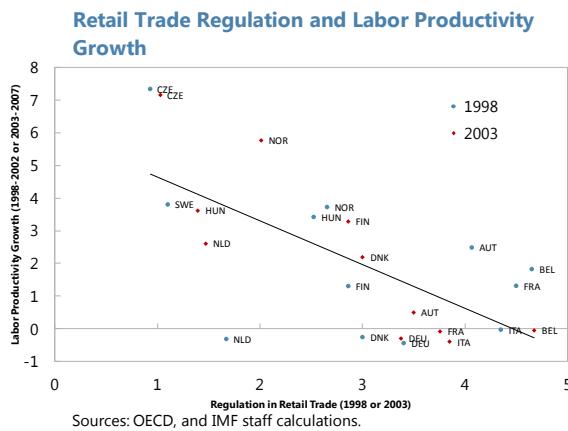
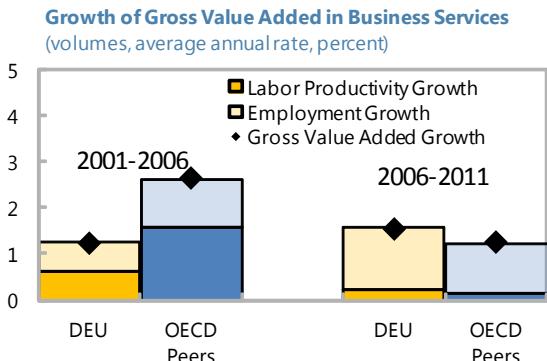
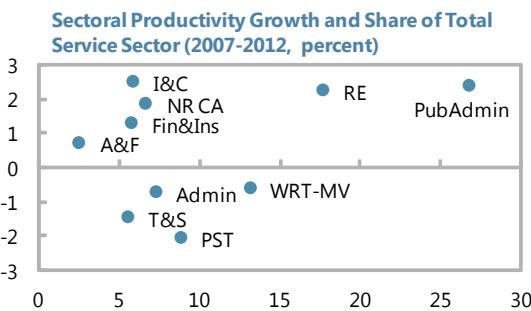


Figure 1. Services Sector Performance

Services sector growth performance has improved relative to peers 1/...



... but productivity growth is lagging in some sub-sectors



Note: WRT- Wholesale & Retail Trade/Motor Vehicle Repair; T&S- Transport & Storage; A&F- Accommodation & Food Services; I&C- Information & Communication; Fin&Ins- Financial & Insurance Activities; RE- Real Estate Activities; PST- Professional, Scientific, and Technical Services; Admin- Administrative & Support Services; PubAdmin- Public Administration, Defense, Education, Health, and Social Work Services; NR CA- Non-Residential Care Activities.

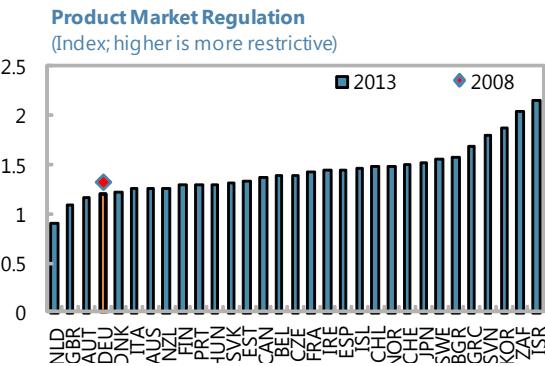
... and retail could be further liberalized...



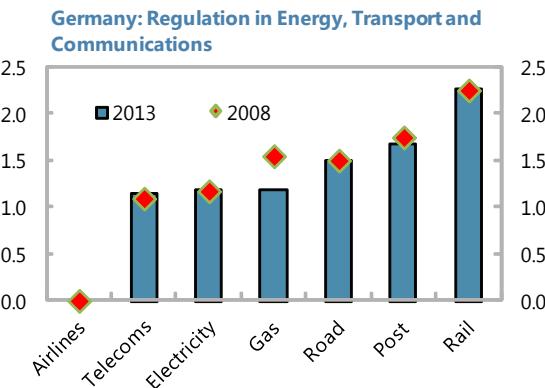
Source: Haver Analytics, OECD, and IMF Staff calculations.

1/ OECD peers: Austria, Belgium, Denmark, Finland, France, Italy, Netherlands, Norway, Sweden.

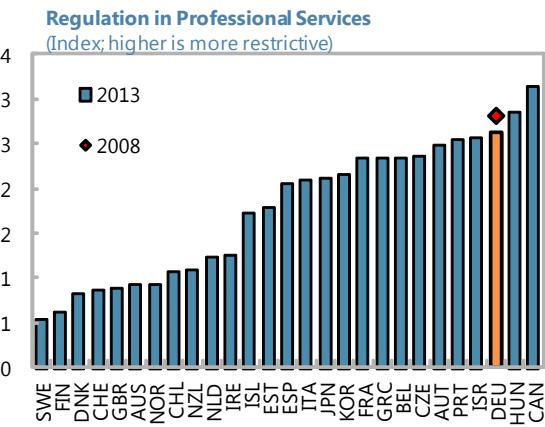
... and economy-wide product market regulation remains supportive...



Competition in rail and postal services is still limited...



... as could professional services



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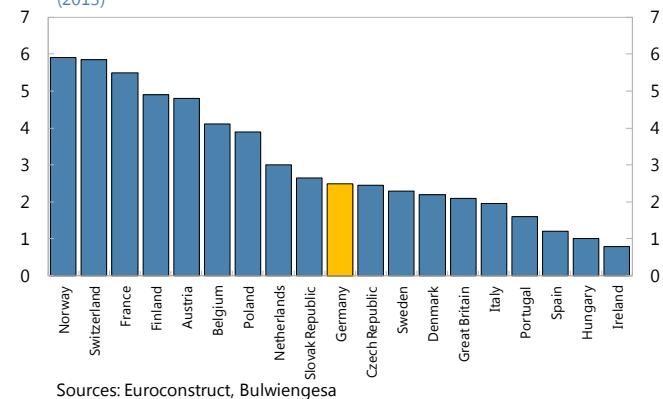
V. RECENT HOUSING MARKET DEVELOPMENTS¹

1. **After several years of stagnation, German housing prices have been picking up, especially in large cities.** They have increased by 18 percent in nominal terms since the trough of 2009:Q2 (Figure 1). Recent housing price inflation has been stronger in the largest cities, in particular Hamburg and Munich where the appreciation since early 2009 has been greater than 50 percent in the apartments segment. Simple valuation measures such as price-to-disposable-income-per-capita and price-to-rent ratios have remained almost flat, except in a few hot spots where an upward trend is evident (Steininger, 2014). Analysis by the Bundesbank suggests that housing prices in Germany as a whole are currently close to their fundamental value, but that apartment prices in large cities may be overvalued by about 25 percent (Bundesbank, 2014).
2. **However the growth of housing loans in the aggregate is barely positive in real terms and lending standards have remained unchanged.** Recent Bundesbank lending surveys suggest that the demand for housing loans has been and is expected to remain relatively strong, but that credit standards have not been loosened. Loan-to-value and loan-to-cost ratios for loans to developers trended up only slightly over the past several quarters (FAP, 2014). Thus at the moment there is no hint of the onset of a spiral between increasing prices and deteriorating lending standards.
3. **Several demand factors contribute to explain the housing market revival.** First, recent developments represent a normalization of prices after the years of decline that followed the post-reunification boom twenty years ago. Second, the decline in the unemployment rate, higher medium-term growth expectations and lower mortgage rates have improved households' solvency. Third, the combination of a very low interest environment, the overperformance of the German bonds and equities over the past several years relative to their EA peers, and a large degree of uncertainty in global capital markets may have triggered renewed interest for investing in the domestic housing market. Stronger immigration flows and foreign investors' interest also help explain the shift in demand.

4. **The heterogeneous price response across regions to the recent shift in demand likely reflects supply factors too.**

Residential construction indicators have rebounded only modestly in the past four to five years following a trough in late 2008–early 2009, suggesting that demand may have outstripped supply. In a broader European

Selected European Countries: Finished Apartments in Newly Built Residential Buildings per 1,000 Inhabitants (2013)



¹ Prepared by Jérôme Vandenbussche (EUR).

perspective, the volume of new construction in Germany still appears relatively modest. The strength of markets in the center of the largest cities, where supply restrictions are the tightest, also points to an important role of housing supply factors.

5. **Macroeconomic effects of housing price inflation are likely to remain limited.** The rate of home ownership is only 46 percent and banks do not offer equity release products, limiting the scope of housing wealth effects. Furthermore the typical down-payment of 30 percent is conservative, which implies that prospective borrowers need to save more when housing price increase (see Table 1). In fact, a recent study finds a small negative effect of real house prices on consumption in Germany (Muellbauer, 2013). The main channel through which housing price shocks affect the German economy is therefore residential investment, which has been picking up, but only modestly.

6. **No policy action is contemplated at the moment.** The Bundesbank is monitoring the situation on the German housing market very closely and is conducting surveys to obtain greater details on the financing of residential property while cautioning banks to stick to conservative lending standards. As discussed in the next chapter, the only macroprudential tool targeting the housing sector currently available is sectoral risk-weights. Complementary tools working through the demand side of the mortgage market such as loan-to-value and debt-service-to-income ceilings are currently not in the toolkit.

Table 1. Institutional Characteristics of Selected National Mortgage Systems

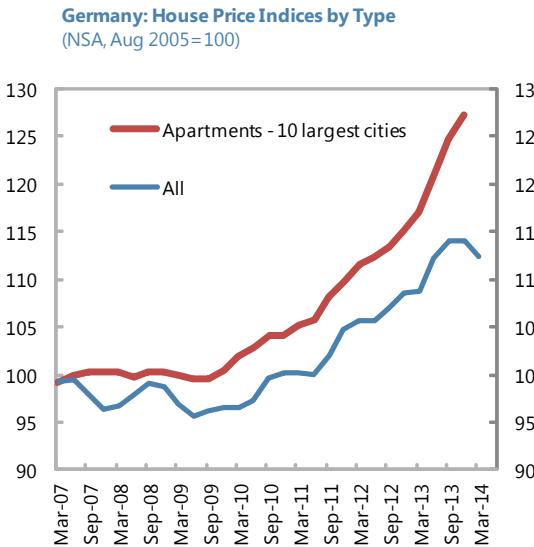
| Country | Typical loan to value ratio | Interest rate adjustment /a) | Typical duration (years) | Equity release products |
|----------------|-----------------------------------|------------------------------------|--------------------------------|-------------------------------|
| Austria | 60% | F(75%) V(25%) | 25 | Not used |
| Denmark | 80% | F(75%) M(10%) V(15%) | 30 | Used |
| France | 75% | F/M/Other(86%) V(14%) | 15 | Not used |
| Germany | 80% | Mainly F and M | 10-15 | Not used |
| Italy | 50% | F(28%) Rest mainly M | 15 | Not used |
| Japan | 70-80% | F(36%) M and V(64%) | 25 | Not used |
| Netherlands | 90% | F(74%) M(19%) V(7%) | 30 | Used |
| Sweden | 80% | F(38%) M(24%) V(38%) | 25 | Used |
| Switzerland | 66% | Mainly V | NA | Not used |
| United Kingdom | 80-90% | M(28%) V(72%) | 25 | Used |
| United States | 80% | F(85%) M(15%) | 30 | Used |

Notes: a) Breakdown of new loans by type. Fixed (F): Interest rate fixed for more than five years or until expiry; Mixed (M): Interest rate fixed between one and five years; Variable (V) Interest rate renegotiable and after one year or tied to market rates or adjustable at the discretion of the lender.

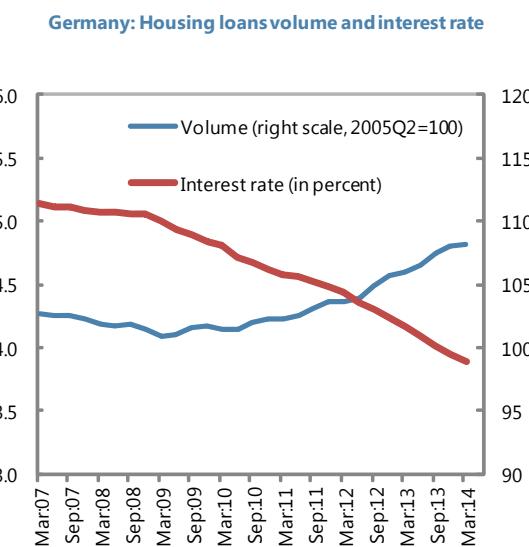
Source: Calza, Monacelli and Stracca (2013) and Deutsche Bundesbank (for Germany data)

Figure 1. Germany: Recent Housing Market Developments

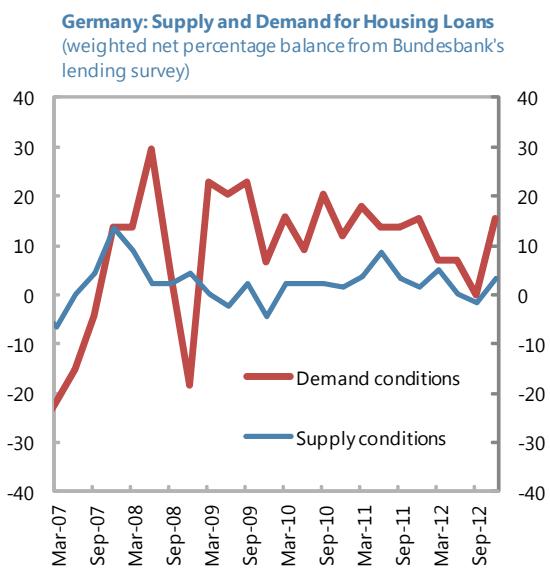
Housing prices are picking up, especially in the largest cities...



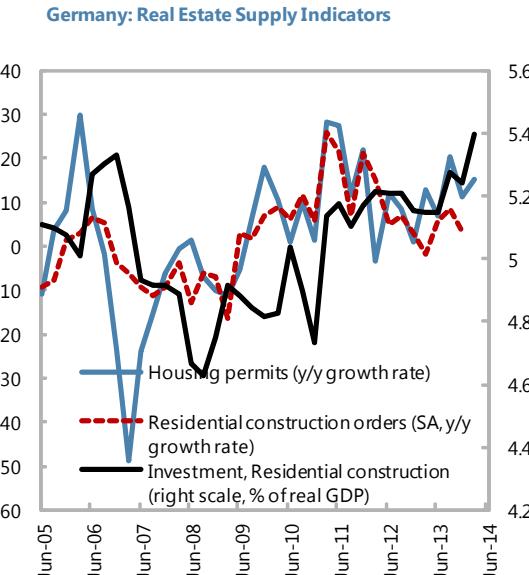
but housing loans growth remains modest, in spite of falling mortgage rates.



Lending surveys suggest that lending standards remain strict...



... and the supply response has been tepid.



Sources: Haver Analytics, and IMF staff calculations.

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VI. THE GERMAN MACROPRUDENTIAL FRAMEWORK

1. **Germany's national macroprudential framework came to life in January 2013 with the entry into force of the Financial Stability Act.** Germany thus implemented a 2011 European Systemic Risk Board (ESRB) recommendation on the macroprudential mandate of national authorities, and broadly addressed the 2011 FSAP recommendations on the macroprudential policy framework. The law delineates statutory responsibilities for financial stability, establishes the Financial Stability Committee (FSC), mandates the Bundesbank to provide the FSC with substantial analytical support, specifies arrangements for cooperation and information exchange between the Bundesbank and the Federal Financial Supervisory Authority (BaFin), and provides for backstop powers to collect additional information from financial institutions.
2. **The FSC brings together the Federal Ministry of Finance, BaFin and the Bundesbank.** Each institution has three voting representatives on the FSC, while the Federal Agency for Financial Market Stabilization has one non-voting representative in an advisory capacity. Within the FSC, the Bundesbank is responsible for macroprudential oversight and risk analysis of the German financial system.
3. **The FSC can publicly voice concern, submit formal warnings, or propose concrete measures to any German public authority but has no direct power over the use of "hard" macroprudential instruments.** The FSC can only recommend the deployment of such instruments by BaFin. As a general rule, decisions regarding warnings and recommendations should be taken unanimously, and the Bundesbank representatives have veto power on these decisions.
4. **The German macroprudential toolkit for credit institutions is imported from the European Union Capital Requirements Directive IV (CRD IV) and Capital Requirements Regulation (CRR) which became applicable in January 2014.** It includes the countercyclical capital buffer, capital surcharges for "other" systemically important institutions¹, the systemic risk buffer, and risk-weights for exposures secured by residential or commercial mortgages (see Box 1). The first two instruments are scheduled to be introduced on a step-by-step basis, starting in 2016, while the latter two have been available since January 2014. The Bundesbank has been working on establishing the analytical foundations for the practical implementation of these instruments. The ESRB is to be notified prior to the use of macroprudential instruments defined in EU legislation and provide "opinions" or "recommendations" regarding the proper use of proposed measures.
5. **Under the Single Supervisory Mechanism (SSM) the ECB will acquire macroprudential powers in Germany (and other SSM countries) from November 2014.** The ECB will be tasked with the macroprudential oversight of all credit institutions in SSM countries. While macroprudential

¹ This is in contrast to *global* systemically important institutions.

interventions remain the responsibility of each SSM country national authorities, they are required to inform the ECB in advance of the introduction of any measure. Furthermore, the ECB may, if deemed necessary, apply more stringent measures aimed at addressing systemic or macro-prudential risks than the ones established by the FSC (“topping-up power”). Neither the obligation to notify the ECB nor the ECB’s topping-up power apply to instruments implemented at national discretion.

Box 1. Germany's Current Macroprudential Toolkit

Since the European Capital Requirements Directive IV and the Capital Requirements Regulation for credit institutions became applicable in January 2014, the German supervisory authorities have access to the following macroprudential instruments:

- **Countercyclical capital buffer (CCCB).** This instrument requires banks to build up capital when aggregate growth in credit is judged to be associated with a build-up of system-wide risk. The buffer can then be drawn down to absorb losses during stressed periods. An increase in the CCCB provides a larger cushion to absorb losses and provides incentives for banks to avoid excessive or underpriced exposures. A release of the CCCB when threats to stability are judged to have receded could help mitigate a contraction in credit supply. An ESRB recommendation outlining the CCCB’s concrete design is expected in mid-2014.
- **Systemically Important Institutions capital surcharge.** Besides the capital surcharge that will be applied to global systemically important financial institutions (G-SIIs) as identified by the Financial Stability Board, the German authorities will be able to apply a capital surcharge to other systemically important institutions (O-SIIs). The surcharge will amount to up to 2 percent of risk-weighted assets. The European Banking Authority (EBA) is expected to publish a set of guidelines on identifying O-SIIs in early 2015.
- **Systemic risk capital buffer.** This capital surcharge can be used to deal with non-cyclical risk exposures and can be directed at both credit institutions as a whole and at certain groups of institutions. The buffer can be set at a minimum of 1 percent or higher.
- **Changing sectoral risk-weights.** The risk-weights on exposures secured by mortgages on immovable property can be increased up to 150 percent. The choice of risk-weights should be based on loss experience and take into account forward-looking market developments and financial stability considerations. EBA is expected to propose regulatory technical standards to specify these conditions by the end of 2014.

6. There is currently no national legal basis for the use of other macroprudential instruments than those in the CRR – CRD IV package. Experience from other countries suggests that other tools that those contained in the CRD IV / CRR may be better-suited to address certain types of systemic risk, are less prone to circumvention, and/or can have a reinforcing effect (IMF, 2013). For example, loan-to-value ratios (LTV), debt-to-income (DTI), and debt-service-to-income ratios (DSTI), which target the demand side of credit, have been effective at managing housing price inflation and mortgage growth in some East Asian countries (IMF, 2013b and Box 2). Other tools to be considered include leverage ratio, stable funding requirements, and liquidity buffers (ESRB, 2014). The Bundesbank has been analyzing other countries' experiences with the use of some of these instruments. As the legislative process necessary to deploy a new tool may be time-consuming, in particular in times of financial excesses or financial stress, it can be useful to define ex ante the full contour of the macroprudential toolkit and to ensure that its legal underpinnings are sound. Another reason to act sooner rather than later is that, as discussed in Bundesbank (2013) and the 2014 Germany Article IV Report, the current low interest rate environment in Germany may persist and foster the build-up of systemic risk.

Box 2. The usefulness of LTV, DTI and DSTI instruments

As discussed in IMF (2013a), the international experience justifies a particular emphasis on macroprudential tools that can contain vulnerabilities in residential housing markets. Because the pass-through of an increase in risk-weights on mortgage loans to loan growth can be limited when strong increases in asset prices and credit feed each other, the use of additional tools that act on credit demand and directly increase the resilience of borrowers to shocks can be useful. An LTV ratio introduces a cap on the size of a mortgage loan relative to the value of a property, thereby imposing a minimum down payment. A DTI ratio restricts the size of total debt to a fixed multiple of household income, while a DSTI ratio restricts the size of annual debt payments to a fixed multiple of annual household income. Both thereby contain unaffordable and unsustainable increases in mortgage debt. Papers surveyed in IMF (2013b) suggest that these tools can reduce feedback between credit and prices in an upswing, as well as improve resilience to shocks, thereby reducing default rates and supporting recovery values when the housing market turns. However, they are more intrusive and calibration can seek to soften their impact, for example by exempting certain types of borrowers or differentiating by geographical areas.

7. The March 2014 FSB Review pointed at other elements of the German framework that could also be strengthened. The Review encouraged the authorities to promptly develop and implement a comprehensive macroprudential strategy, and to make it operational (FSB, 2014). According to the Review, several aspects of the FSC's institutional design remain unclear, including the following four points. First, the types of issues that are within the scope of the FSC for discussion and/or for decision-making purposes could be clarified as each member institution still has the mandate and authority to act if the need arises. Second, whether FSC members act as official representatives of their institutions or in personal capacity also could be specified. Third, protocols

and procedures for reconciling the diversity of views in decision-making could be developed. Fourth, the FSC could reflect on its communication strategy, identify its target audiences, and ensure that appropriate communication tools to each audience are available.

8. **The FSC will soon have an opportunity to publicly address some of these issues.** By law, the FSC is required to present a report to the Bundestag once a year. The first such report is expected to be delivered in the middle of this year and will provide an opportunity to explain its analytical and operational frameworks in detail.² Beyond that immediate horizon, per an April 2013 ESRB recommendation, the FSC will have to define its intermediate objectives and assess its available macroprudential instruments by end-2014, and to fully articulate a policy strategy by end-2015.

² As envisaged at the time of writing of the Staff Report, the FSC presented its first report to the Bundestag on June 16th, 2014.

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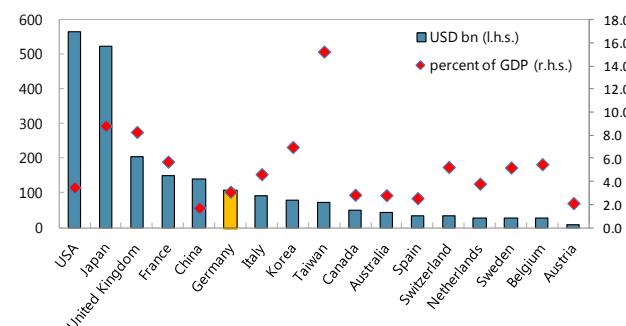
VII. THE GERMAN LIFE INSURANCE SECTOR: CONFRONTING THE CHALLENGE OF LOW INTEREST RATES

On February 28, 2013, the European Insurance and Occupational Pensions Authority (EIOPA) issued an Opinion warning about the risk of a prolonged low interest rate environment to the European Union insurance industry. In its latest Financial Stability Report (May 2014) it emphasized the prominence of this risk, which puts particular pressure on life insurers' ability to pay guaranteed rates of return and to maintain adequate profitability and financial profiles in the long-run. This risk looks particularly acute in Germany where sovereign interest rates are the lowest in the region and guaranteed rates of return in life insurers' portfolios are relatively high. It has been recognized by the German authorities since at least 2011, and the government's coalition program agreed in November 2013 promises that "appropriate measures to strengthen the risk-bearing capacity and stability of the life insurance sector" will be taken. Against this backdrop, this note takes stock of the situation of the German life insurance industry and discusses how it is positioned to confront the risk from a low interest rate environment.¹

A. The German Life Insurance Sector

1. **The German life insurance market is a mature market with little organic growth.** At end-2012, it accounted for about 48 percent of the premium income and about 62 percent of the total investment of the German primary insurance market. There were a total of 113 companies operating in the market at end-2012 of which 95 were supervised by the Federal Financial Supervisory Authority (BaFin).² The premium income of primary life insurers supervised by BaFin was €83.7 bn in 2012, making Germany a market of average size relative to GDP for an industrialized country but the sixth largest in the world in absolute terms. The

Selected Countries: Premium Income of Primary Life Insurers



¹ Occupational pension schemes are also impacted by the low interest rate environment through similar mechanisms, but represent a smaller share of German financial assets. At the end of 2012, occupational pension entitlements amounted to €444 bn (or 9 percent of German households' financial assets).

² The other companies are branches of EU/EEA countries and are supervised by their home country authorities.

GERMANY

growth in premiums was 2.2 percent a year on average between 2005 and 2012 with the period 2010-2012 showing a small decline in the context of the EA sovereign debt crisis. About 80 percent of premiums go to non-unit-linked products.

2. **Market concentration appears moderate.** The top five companies represent a combined 37.4 percent market share (Table 1), although the market share of the top five insurance groups is larger because they own multiple subsidiaries. The dominant player is Allianz Leben, a subsidiary of Allianz Group, the largest German insurance company and one of the nine global systemically important insurers. The persistently low interest rate environment and regulatory changes discussed below are expected to act as catalysts for consolidation. All of the top ten life insurers are part of diversified insurance groups. Two are ultimately owned by German banks.

Table 1. Germany: Life Insurance Market Shares, 2012

| Rank | Insurance Company | Ultimate Parent | Market Share (in percent) | Financial Strength Rating (as of April 1, 2014) | Rating Company |
|------|------------------------|-------------------------|---------------------------|--|----------------|
| 1 | Allianz Leben | Allianz SE | 17.4 | AA | S&P |
| 2 | R+V Lebensversicherung | DZ Bank | 5.7 | AA- | S&P |
| 3 | AachenMuenchener Leben | Generali | 5.4 | A- | S&P |
| 4 | Generali Leben | Generali | 4.8 | A3 | Moody's |
| 5 | Zurich Dtsch. Herold | Zurich Insurance Group | 4.4 | A1 | Moody's |
| 6 | Debeka Leben | Debeka Leben 1/ | 4.2 | N/A | Moody's |
| 7 | Ergo Leben Ag | Munich Re | 3.9 | Aa3 | Moody's |
| 8 | Cosmos Leben | Generali | 3.3 | A3 | Moody's |
| 9 | Nuernberger Leben | (dispersed ownership) | 2.9 | A | S&P |
| 10 | Bayern-Versicherung | German Savings Banks 2/ | 2.7 | A+ | S&P |

Source: BaFin, Moody's (December 2013), SNL, Companies' websites.

1/ Debeka Leben is a mutual insurance company.

2/ 72 savings banks from Bavaria, and 26 savings banks from Rhineland-Palatinate

3. Gross technical provisions and equity have grown somewhat faster than premiums.

Total gross technical provisions were €813 bn at end 2012 after increasing by 3.5 percent a year on average since 2005. At the same time, capital and reserves plus bonuses and rebates provisions amounted to €13 bn and had grown at a yearly rate of 3.2 percent since 2005 (Table 2). Total eligible own funds amounted to about EUR 55 bn

Table 2. Germany: Gross Technical Provisions, Capital, and Reserves, 2005-2012
(Billions of Euros)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|-------|-------|-------|-------|-------|-------|
| Gross technical provisions | 697.3 | 696.5 | 730.8 | 768.0 | 777.9 | 813.1 |
| o/w for life assurance policies where the investment risk is borne by the policyholders | 41.2 | 31.5 | 45.0 | 55.8 | 54.6 | 65.1 |
| o/w for bonuses and rebates 1/ | 58.9 | 54.8 | 55.4 | 55.5 | 54.0 | 51.7 |
| Total of capital and reserves | 11.3 | 11.7 | 12.1 | 12.1 | 12.1 | 13.0 |
| o/w profit or loss for the financial year | 0.9 | 0.7 | 1.0 | 1.3 | 0.9 | 0.9 |

Source: EIOPA (2013)

1/ Most of bonus and rebate provisions are eligible as own funds

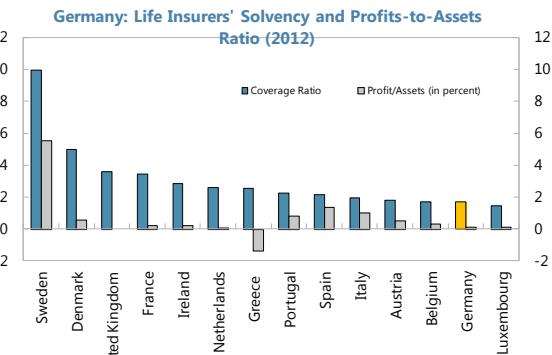
4. Life insurers' portfolios are geared towards loans, fixed income securities, and investment in funds. The total investment portfolio amounted to €936 bn (or 35 percent of GDP) at end-2012. The weight of fixed income securities has been trending up over the past several years while the weight of units in unit funds (together with shares and other variable-yield securities) has been stable (Table 3). The steady increase in the share of investments for the benefit of life-insurance policyholders who bear the investment risk reflects the growth in unit-linked policies.

Table 3. Germany: Life Insurers' Investment Assets, 2005-2012
(Share of total, unless otherwise indicated)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|------|------|------|------|------|------|
| Lands and buildings | 2.0 | 1.9 | 1.7 | 1.8 | 1.7 | 1.6 |
| Investments in affiliated enterprises and participating interests | 4.4 | 4.6 | 4.4 | 4.5 | 4.5 | 4.3 |
| Shares and other variable-yield securities and units in unit trusts | 25.7 | 23.6 | 23.8 | 25.0 | 24.4 | 25.7 |
| Debt securities and other fixed income securities | 30.7 | 32.6 | 32.9 | 32.5 | 34.3 | 35.4 |
| Loans guaranteed by mortgages | 8.1 | 8.3 | 7.7 | 7.2 | 7.1 | 6.6 |
| Other loans | 22.1 | 23.0 | 22.2 | 20.8 | 19.7 | 17.8 |
| Deposits with credit institutions and other financial investments | 1.1 | 1.3 | 1.1 | 1.0 | 1.3 | 1.2 |
| Deposits with ceding enterprises | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Investments for the benefit of life-assurance policyholders who bear the investment risk | 5.6 | 4.3 | 5.8 | 6.8 | 6.5 | 7.0 |
| Total investment assets (in bn euros) | 740 | 729 | 776 | 820 | 843 | 936 |

Source: EIOPA (2013)

5. The coverage ratio is significantly higher than one but is lower than most European peers' while profitability is poor. The coverage ratio—i.e., the ratio of own funds to the regulatory minimum¹—has been on a declining trend since 2007 and stood at 169 percent at end-2012, which looks poor in international perspective. Profitability measured by profits over total assets has been stable but low since 2005.

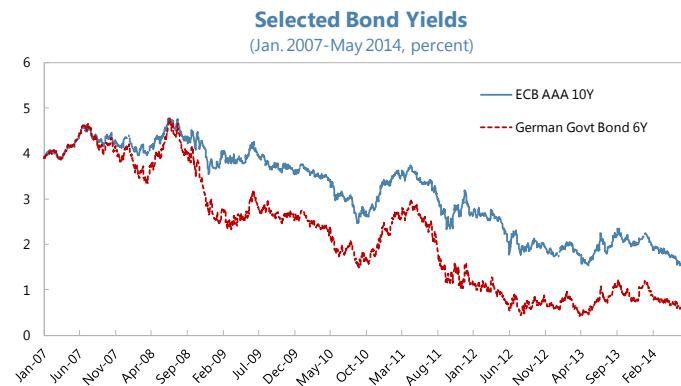


Source: EIOPA

¹ The regulatory minimum is called the solvency margin.

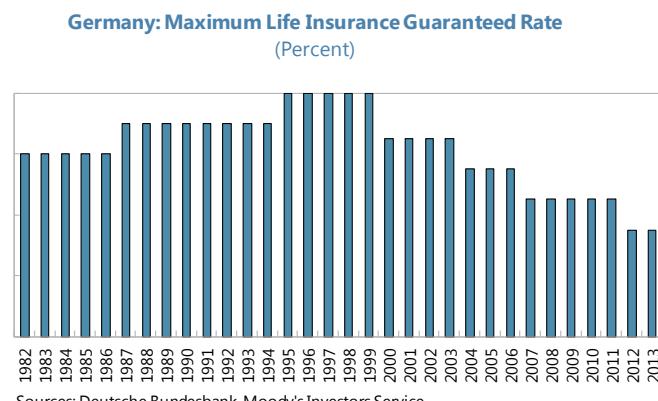
B. The Challenge of Low Interest Rates¹

6. **The German life insurance industry stands out in international perspective for its heavy exposure to low interest rates.** Interest rates have fallen to the lowest levels in a generation which has brought down investment income.² Weak economic conditions across the euro area and an inflation rate projected to remain below the ECB's target over a three year horizon imply that monetary conditions are likely to remain very accommodative for the foreseeable future. Although large insurers are in general well diversified in geographical and business terms and many have also already significantly adjusted their business models to the new environment, some life insurers may be squeezed by a thin or even negative margin between investment returns and minimum guarantees made to policyholders in the past. A similar phenomenon took place in Japan in the late 1990's and led to several failures (see Box 1). Low yields also constitute a key medium-term solvency risk through liability valuation.



7. **More specifically, the vulnerability of German insurers to prevailing low rates is due to:**

- *High historic guarantees relative to reinvestment yields.* Reinvestment yields have been declining over the past several years and hover now around 3 percent. German life insurers provided guarantees to their policyholders above 2.75 percent until 2006. Although guarantees on policies underwritten since 2007 have fallen substantially, the average guaranteed rate on the in-force business remains high, at 3.2 percent at year-end 2012 (Bundesbank, 2013). As shown in Table 4, this is one of the highest levels of guarantees in Europe.



¹ This section draws from Moody's (2013).

² The Figure attached to this paragraph shows the yield on Bunds with a residual maturity of six years because this yield has the greatest explanatory power with regard to developments in the net return on investment of the life insurers according to Bundesbank (2013).

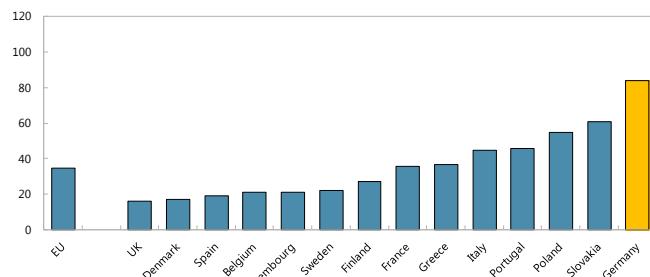
Table 4. Selected European Countries: Guaranteed Rate in Life Insurance Policies, 2013
(Percent)

| | UK | France | Italy | Switzerland | Germany | Netherlands |
|---|----|--------|-------|-------------|---------|-------------|
| Average in-force business guaranteed rate | ~0 | ~1 | ~2.5 | ~2.75 | ~3.3 | ~3.5 |
| Average new business guaranteed rate | ~0 | ~0 | ~1.5 | ~1.5 | ~1.75 | ~3 |

Source: Moody's.

- *High duration gap between assets and liabilities.* German life insurance liabilities only achieve total run-off over more than 60 years, and only around 50 percent of the total cash flows are served before 20 years. Moody's (2013) estimates a weighted average maturity for German life liabilities cash-flows of around 20 years versus a weighted average maturity for assets of around 6 years. Therefore the duration of German life insurers' assets is significantly lower than the duration of their liabilities. As a result, they are subject to a large reinvestment risk.

Germany: Insurers' Cash Flow Mismatch Ratio 1/
(2011, Percent)



Source: EIOPA (2013)

1/The mismatch ratio is defined as the discounted value of yearly cash flows shortfall divided by best-estimate liabilities. Numbers are based on the results provided by only 38% of the undertakings participating in the EIOPA Long-Term Guarantee Assessment exercise.

8. **This vulnerability is heterogeneous across market players.** Although the characteristics of the guaranteed liabilities are likely to be similar for most companies, asset-liability management practices are likely to differ across several key dimensions:

- *The duration of the assets.* Three large players (Allianz, AXA, and ERGO) reported asset duration of between 8 and 9 years at end-2012 (or end-2013H1), which was higher than the Moody's estimate for the average of the market (6 years), resulting in a lower risk for these large companies.
- *The weight of deferred profit participation reserves and of capital in the balance sheet.* German life insurers' balance sheets include, in addition to conventional policyholder reserves, deferred profit participation reserves that are not yet allocated to policyholders and which do not bear any specific guarantee. These buffers can bolster insurers' ability to meet policyholders' guarantees. Deferred profit participation reserves represent on average between 5 and 6 percent of an insurer's assets, but this varies by individual insurer.
- *The risk and expense results.* According to German profit sharing rules, risk results (premiums received to cover mortality, disability and other insurance risks minus the amount of claims related to these risks) and the expense results (the part of premiums used to cover expenses

minus administrative expenses) can offset pressure on investment margins and as such be available to serve interest guarantees.

9. Stress tests suggest that several life insurers could face difficulties in coming years.

The Bundesbank estimated in November 2013 that in a severe stress scenario with a prolonged period of low interest rates³, more than ten percent of life-insurers would breach regulatory own funds requirements (under Solvency I) by 2018, and more than one third by 2023. Measured in terms of their premium revenue, this latter group holds a market share of 43 percent. Separately, Moody's (2013) estimates that the German life insurance industry would ultimately suffer economic losses on in-force business if reinvestment yields remained permanently below 2.6 percent. A small number of companies closed their new business operations and are in run-off mode.

10. The forthcoming implementation of Solvency II may accelerate the process. The current capital requirement framework (Solvency I) is mainly based on historic cost accounting and is not risk-based. As a result, the immediate potential solvency impact of low interest rates under Solvency I is limited. However, the implementation of a new EU-wide framework (Solvency II) from January 1, 2016 (with a phase-in period of 16 years) will see a gradual move to a market value and a risk-based solvency requirement that will explicitly calculate the interest rate risk capital surcharge and will discount insurance liabilities using risk free rates as a basis. As a result, any problem in meeting own funds requirements owing to low interest rates will come to light sooner.

11. The German authorities have taken an important policy action in 2011. They introduced the interest rate reserve (Zinszusatzreserve, or ZZR) which works as follows. If a life insurer holds reserves associated with a technical interest rate above a given reference rate (the rolling 10 year average of the ECB AAA 10-year rate), then the insurer has to constitute an additional reserve. The ZZR represents the difference between the value of the liability cash-flows (for the next ten years) discounted with the reference rate and the value of the liability cash flows (for the next 15 years) discounted with the technical interest rate. In 2011, funds had to be set aside in additional provisions for the first time as the reference interest rate, at 3.92 percent, was lower than the guaranteed return for certain outstanding policies. A sum of €1.5 bn was thus allocated to additional provisions. In 2012, the reference rate fell to 3.62 percent, leading to further inflows of €5.7 bn to the additional interest provisions. A similar level of accrual is expected in 2013.

12. However, this new reserve may prove insufficient. The ZZR accelerates the recognition of the expected loss. In practice, insurers have offset the negative accounting impact of the ZZR requirement by realizing capital gains. The current low interest rate environment has generated unrealized capital gains amounting to around €100 billion at the end of 2012 and this amount is expected to decrease as investments mature. Furthermore since 2008 German life insurers have to

³ In the Bundesbank scenario, the yields on 6-year Bunds are extrapolated using historical yields on Japanese government bonds from 2003 onward and excess returns (i.e. returns on investment higher than the interest paid on 6-year government bonds) converge to their historical minima.

share part of their unrealized capital gains with policyholders terminating their contracts, via the policy holder profit-sharing mechanism, which over time will further erode the amount of unrealized gains available for insurers to finance the ZZR. As pointed out by the Bundesbank (2013), this requirement is economically unsound as the valuation reserves are computed using a market interest rate while no allowance is made for hidden losses as the technical provisions are determined using the original maximum technical interest rate.

13. Policy-makers are aware that further action is needed and the government has proposed a policy package in early June. The Bundestag started working on amendments to the provisions governing the participation of policy holders in the valuation reserves in November 2012, but the issue was postponed soon after. The amendment originally discussed by the Bundestag would have eliminated the current mechanism for automatic participation in the valuation reserves so as to be able to safeguard the interests of the remaining policyholders. A new Finance Ministry proposal presented in June 2014 has four main components: (i) adjusting the participation of exiting policyholders in hidden reserves of fixed-income investments; (ii) prohibiting dividend payments if guarantees are not yet fully funded; (iii) reducing the guaranteed interest rate for new business (as recommended in January 2014 by the German Association of Actuaries); and (iv) adjusting acquisition costs. This set of measures need legislative approval before they can be implemented.

14. Until a policy package is approved , insurers can keep making adjustments to their strategy, including:

- raising fresh equity, although the uncertainty about their ability to pay dividends under the latest policy proposal may make that option difficult to implement in practice.
- lowering the rate offered on new business and promote new types of policies, with, for example, a reset of the guaranteed rate according to market conditions at certain dates, or with a guarantee only on a portion of the premium.
- adjusting asset duration and search for higher yields. However, the yields available on longer maturity assets in the current environment may still be lower than the average guaranteed rate and insurers may not want to lock in such low rates. Increasing yields may also come as a result an increase in asset risk, which could be associated with a higher level of impairments in the future.
- changing the profit sharing policy. An increasing number of insurers are reducing or deferring the policyholders' participation in profits in order to build long-term buffers. German insurers have to share at least 90 percent of their investment margins with policyholders. In practice, the share of profits distributed to policyholders has been higher than the required minimum because of competitive pressures. In addition, insurers in recent years have used their stock of deferred profit participation reserves to boost returns credited to policyholders and offset declining investment margins.

- using the flexibility in the profit sharing rules regarding when profits can be allocated to policyholders. Hence insurers can decide either to distribute these profits immediately or at a later stage.
- reducing their discretionary bonuses. The total return offered in the market for endowment insurance contracts was 3.51 percent on average in 2013, lower than 3.8 percent in 2012 and 3.95 percent in 2011.
- reducing the sales force and other costs.

15. **Forthcoming supervisory measures will also help bring greater clarity about individual insurers' vulnerability to a low interest environment.** BaFin will launch an exercise this summer that will run in parallel with the preparations for the Fall 2014 EIOPA stress tests. BaFin will ask insurers to compute and report their solvency ratio under Solvency II at end-2013 and end-2015, and ask them to discuss the adequacy of their capital position based on these calculations. Periodic supervisory reports are also being analyzed with greater scrutiny.

16. **A guarantee scheme for life insurance has been in place since 2003.** In case a distressed company is not able to propose a credible recovery plan, its assets and liabilities can be transferred to the German Insurance Guarantee Scheme for life insurance. There is currently one company run down by the Scheme. The Scheme is financed by annual membership fees. According to its rules, these fees amount to 0.02 percent of the net technical provisions and are to be collected until a total of 0.1 percent of net technical provisions is reached. The scheme has been fully funded since 2010. Should these funds prove insufficient, special contributions could be levied up to an additional amount of 0.1 percent of net provisions. If this amount were still insufficient, the Scheme could borrow additional funds because the German life insurers have voluntarily committed to make 1 percent of their net technical provisions (i.e. ten times the amount required under the Scheme's rule) available in case of need. The Scheme should therefore be able to safeguard the financial stability of the sector should problems remain contained to a few small institutions. In case a problem of larger proportions developed, BaFin could decide to make use of its statutory powers that allow it to impose a reduction in guaranteed rates.

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VIII. REGULATORY AND SUPERVISORY ISSUES¹

1. **Context.** The German financial sector is at a critical juncture. The international, European and domestic regulatory frameworks have progressed substantially since the last consultation. The FSB just completed its "Peer Review of Germany." The ECB has started the Comprehensive Assessment process (CA), and will assume direct supervision of the twenty-one² largest German banks in November 2014.
2. **Important progress on the financial reform agenda.** Major elements of the regulatory, supervisory and resolution frameworks are now in place, both at the European and domestic level. Efforts have been stepped up since the 2011 FSAP Update, even if some reforms are still ongoing. EU initiatives will continue to shape the direction and pace of German reforms.
3. **Capital regulation.** A milestone is the entry into force on January 1, 2014 of the Capital Requirements Directive (CRD IV) and Capital Requirements Regulation (CRR), which transposes Basel III in the European Union³. The largest cross-border German banks should also be impacted by the Basel III leverage ratio, whose features are being finalized at the global and European levels, and by the U.S. Fed's rules on Foreign Banking Organizations (FBO)⁴ that could increase capital, leverage and funding requirements for foreign banks active in the United States. Recent confirmation on the tax deductibility of coupons on some types of eligible additional Tier 1 (AT1) capital instruments provides welcome clarity and should allow banks to issue capital instruments to replace AT1 instruments being phased out, and comply with higher leverage ratio requirements.
4. **Domestic supervision.** Supervisory efforts have been stepped up since the 2011 FSAP Update. Staffing at the supervisory authorities has been selectively expanded. The rigor of stress testing for banks has strengthened and now covers various types of scenarios. The number of on-site inspections has increased. Yet there is room for further progress. External auditors continue to play an important role in assessing credit risks, and in on-site inspections, which should not preclude the development of in-house expertise. Supervision could better incorporate the analysis of banks' business models, risk culture and qualitative aspects in general. As highlighted by the 2011 FSAP Update and the 2014 FSB Peer Review, granting formal recommendations powers to supervisors on

¹ Prepared by V. Le Leslé (SPR) and J. Vandebussche (EUR).

² The number initially announced by the ECB was twenty-four, but it was later decided that three out of these twenty-four banks would remain under direct domestic supervision.

³ A phased-in implementation starts in 2014 for the minimum risk-weighted capital ratio, including the introduction of Common Equity Tier 1 (CET1) ratio. The implementation of the Liquidity Coverage Ratio (LCR) will also be phased in and will start in 2015. The full implementation of the Directive and Regulation will be complete in 2019.

⁴ The Federal Reserve Board issued final rules on FBO in February 2014. Implementation will start on July 1, 2016, except for the leverage ratio requirement that will be introduced on January 1, 2018.

major acquisitions would be an important step. Stress-testing would be further enhanced by incorporating liquidity risk.

5. **European supervision.** The direct supervision of the largest euro area banks will be transferred to the ECB under the Single Supervisory Mechanism (SSM) this coming November. Germany should benefit from this re-enforced surveillance of systemically important banks (SIBs), as the cross-borders risks they generate are better monitored at the euro area level than at the domestic level. The coexistence of national and centralized supervisory frameworks is particularly striking in Germany. BaFin and the Bundesbank will remain very involved, assisting the ECB for the largest German banks in the context of Joint Supervisory Teams, and retaining direct supervision for some 1,800 smaller and domestically-focused banks. While supervisory responsibilities will be shifted to the central level in only a few months, responsibilities for resolution will remain at the national level until the Single Resolution Mechanism (SRM) is fully in place in 2016. This will give additional incentives for national supervisors to remain closely involved in the surveillance of all banks during that period of time.

6. **Domestic recovery and resolution.** The adoption in August 2013 of the Act on Ring-fencing and Recovery and Resolution Planning for Credit Institutions and Financial Groups⁵ (the "Act") provides a framework for recovery and resolution planning for financial institutions, as well as resolvability assessments. Together with the 2011 Bank Restructuring Act, it serves as the key framework for managing crises, restructuring weak banks and resolving non-viable banks. Another important aspect to enhance the resolvability of banks is the drafting of recovery and resolution plans. In April 2014, BaFin and the Bundesbank published details of the legal requirements for recovery plans in the Minimum Requirements for the Design of Recovery Plans.⁶ This circular will be the basis for the revision of the first recovery plans that were submitted to the supervisors by the end of last year. Beyond recovery plans written by the institutions themselves, BaFin will develop resolution plans which will be discussed with the Federal Agency for Financial Market Stabilization (FMSA) and the Bundesbank. BaFin has the power to transfer the assets and liabilities of the institution (e.g. to a bridge bank), and to request financial assistance from the German Restructuring Fund managed by the FMSA.⁷ The Restructuring Fund is building up, and has raised approximately €1.8 billion from the banks between 2011 and 2013. Up to €20 billion are available to the Fund as a federal loan in cases, if needed, and the Fund also has access to liquidity guarantees of up to €100 billion.

7. **European recovery and resolution.** The adoption of the SRM in April 2014 is an important step toward a complete Banking Union. The SRM will cover all banks in countries that participate in

⁵ Gesetz zur Abschirmung von Risiken und zur Planung der Sanierung und Abwicklung von Kreditinstituten und Finanzgruppen

⁶ Mindestanforderungen an die Ausgestaltung von Sanierungsplänen - MaSan

⁷ Based on the German Banking Act, all credit institutions have to contribute to the Restructuring Fund.

SSM. It consists of (i) a Single Resolution Board (SRB) and a Single Resolution Fund (SRF). The €55 billion SRF, to be financed by bank levies raised at the national level, will be built over eight years. During the transition, the SRF will comprise national compartments, the resources accumulated in which will be progressively mutualized, starting with 40 percent of these resources in the first year of operation, and 60 percent by the end of the second year. The Bank Recovery and Resolution Directive (BRRD) will enter into force on January 1, 2015. It introduces the "bail-in" tool, which allows authorities to write down and convert some of a distressed bank's liabilities, and which has to be made available by January 1, 2016.. The agreements on the SRM and the BRRD pave the way for renewed talks about the European Stability Mechanism (ESM) direct bank recapitalization after the SSM becomes effective, even if the process is yet untested and complex, and it remains unclear how this instrument would work.

8. **Deposit insurance.** Germany has harmonized the level and scope of deposit guarantee protection with EU standards, by instituting a harmonized and legally binding deposit guarantee of €100,000, backed by adequate prefunding⁸. However, it is not expected that amendments would lead to a unification of the statutory German deposit insurance schemes. Statutory and voluntary protection schemes are likely to continue to coexist, in spite of FSAP recommendation to reduce fragmentation.

9. **Structural measures.** On 29 January 2014, the EC proposed a draft regulation on structural measures improving resilience of EU credit institutions (the "Draft") that adopts the main proposals by the High-Level Expert Group on reforming the structure of the EU banking sector (aka "Liikanen Report")⁹. The Draft proposes to ban proprietary trading and exposure to hedge funds, and ring-fence some risky trading activities. In Germany, the 2013 Act amounts to a domestic interpretation of the Draft, and will fully be effective by July 2016, ahead of the expected European timeframe. The Act is separate, but broadly similar to the Draft (with some small differences on the treatment of market-making activities). The general principles applicable to the ring-fencing of certain types of risks and the financing of the trading entity are the same. In some instances, the scope of prohibitions is stricter under the German framework, and BaFin enjoys discretionary powers to decide on the applicable thresholds¹⁰.

⁸ The amendment to the Act on Deposit Guarantee and Investor Compensation, which entered into force in June 2009

⁹ The proprietary trading ban would apply as of 1 January 2017 and the effective separation of other trading activities would apply as of 1 July 2018.

¹⁰ Additional analysis on the various national and regional initiatives for structural reforms is available in IMF SDN/13/13 "Creating a safer financial system: Will the Volcker, Vickers and Liikanen structural measures help?"

IX. CHALLENGES FOR THE BANKING SECTOR AND THE ECB COMPREHENSIVE ASSESSMENT¹

1. **Progress under way.** The German banking system has strengthened further in 2013. Last year's earnings were supported by historically low loan loss provisioning, due to a favorable macroeconomic environment in Germany, and an improving European outlook. Profitability, however, varied, as did one-off charges. Nonetheless, the improvement in capital adequacy continued, and virtually all German banks are expected to be ready to implement stricter regulatory requirements in a timely manner. Many banks are also restructuring their balance sheets, and making progress in addressing legacy and non-performing assets, cutting costs, and accelerating impairment charges in the income statement.
2. **The ECB is conducting a comprehensive assessment (CA) the outcome of which will be a milestone for European banks in general and German banks in particular.** This exercise is taking place before the transfer of supervisory power to the ECB in November of this year in the context of the Single Supervisory Mechanism (SSM - see Chapter VIII). The CA has been and is likely to remain the most prominent theme of 2014 for the German banking sector. The process started in November 2013 and results are expected to be available by October 2014. The assessment comprises three phases: (i) *a risk assessment*, which covered all significant bank risks; (ii) *an asset quality review (AQR)*, which is ongoing at the time of writing and focuses on the quality of the main assets and their valuation, and (iii) *forward-looking stress-tests* coordinated with the European Banking Authority (EBA), which will examine banks' resilience under adverse economic conditions. Germany has the highest number of banks involved in the exercise. Together, these banks hold about 65 percent (€5 trillion) of German banking sector assets. The SSM national supervisory authorities and the ECB are expected to closely cooperate on the implementation of the CA and are supported by independent consultants and auditors. The CA may uncover provisioning shortfalls and, in a few relatively weaker banks, capital shortfalls.
3. **Against that background, the core of our analysis focuses on the 23 largest German banking groups subject to the EBA stress tests.**² German averages shown in our Figures are based on this sample while European averages are based on the full EBA sample of 124 European banking groups. In the text and charts, we also discuss recent developments in the narrower group made of the largest 10 German banking groups with an international focus³

¹ Prepared by V. Le Leslé (SPR) and J. Vandenbussche (EUR), with research assistance from M. Maneely (EUR).

² 23 out 124 banks are German in the EBA sample, while 24 out of 128 banks are German in the ECB sample. SEB AG is a subsidiary of Sweden-based SEB Group. Because Sweden is part of the European Union but not part of the Single Supervisory Mechanism, SEB AG is included only in the ECB sample.

³ All the information in this chapter comes from publicly-available sources, primarily SNL, Bloomberg and individual bank reports.

Profitability reflects low provisions, rather than strong operating revenues

4. **Low operating income.** Aggregate net earnings in our sample of 23 banks remained flat in 2013 at €4.8 billion. They stood at €4 billion in the smaller group of 10 banks, a small decline relative to 2012 (Figure 1). Profitability remained subdued, as top line revenues were adversely affected by a reduction in net interest income, which accounted for over half of operating income. Net interest margins (NIMs) are structurally low in Germany and are below European peers', mainly due to intense domestic competition, sometimes described as "overcapacity."⁴ The low interest rate environment is adding further pressure on NIMs. Universal banks with a diversified revenue mix are less exposed to this challenge, but some were affected last year by the significant slowdown in investment banking revenues, primarily in fixed income. Furthermore the largest German bank booked litigation expenses of 2.5 bn euros last year as a result of several legal and regulatory challenges that are still ongoing and may be a drag on its profitability this year again. German banks' return on equity (RoE) and return on assets (RoA) compared favorably to European peers on average, but single digit RoEs may not be sufficient to cover the cost of capital over time. Sustained cost-cutting measures over the last few years have helped bring down German banks' cost-to-income ratio more in line with their peers in the rest of Europe.

5. **Low provisions helped earnings.** Net earnings were supported by historically low loan loss provisioning due to a favorable macroeconomic environment in Germany, and the recovery across Europe. With cross-border claims lower, German banks are less exposed to a deterioration of the outlook outside Germany. Provisioning may have bottomed out, and it is likely to increase again, particularly in the face of a deterioration of economic prospects in some parts of the world, including emerging markets. Tensions between Ukraine and Russia might also have an impact on asset quality should there be an escalation of sanctions.

Capital positions have improved, but leverage ratios are still too weak in selected banks

6. **Good progress towards Basel III implementation.** According to the FSB⁵, the results of the Basel III quantitative impact study showed that, the 42 German banks participating in the exercise complied on average with a fully loaded Basel III common equity tier one capital requirement of 7 percent as of year-end 2012. The sum of individual capital shortfalls for the seven largest and most internationally active banks declined to €14 billion at year-end 2012, and decreased further in 2013. This overall improvement is attributable to increases in regulatory capital as well as a reduction in risk-weighted assets.

7. **Risk-based capital ratios are at historical highs.** The average Tier 1 ratio for the sample of 23 German banks improved from 14.9 percent in 2012 to 16.4 percent in 2013, above the European

⁴ Bundesbank, Financial Stability Review (FSR) 2013, page 49.

⁵ March 2014 Peer Review of Germany, annex 1.

average of 14.8 percent (Figure 2). Capital positions have improved, as banks have divested non-core assets, and dealt with some expensive legacy assets. Ongoing restructuring and de-risking efforts have led to a reduction that is more pronounced in risk-weighted assets (RWAs) than in total assets. Some banks also issued equity in 2013, which helped rebuilding capital, but organic capital generation may be slowed down by subdued profitability going forward. These higher capital ratios are justified in light of forthcoming stricter regulatory requirements, and to provide a buffer available to cushion possible capital needs identified by the ECB comprehensive assessment.

8. **Leverage ratios, however, continue to lag behind.** At end-2013, some large German banks fell short of the 3 percent minimum threshold fixed by Basel III, while the majority of smaller banks are expected to comply easily with the forthcoming minimum requirement. The leverage ratio is likely to have a significant impact on global diversified German banks, particularly in comparison to European and even more in comparison to American peers that are already taking steps to comply with stricter domestic requirements. It is worth noting that the leverage ratio definition is not fully settled yet, that reporting will not be required until 2015 and that implementation of the ratio is scheduled for 2018⁶. Issuing additional Tier 1 (AT1) instruments would help timely convergence towards the expected minimum leverage ratio requirement and gradually build buffers more commensurate with levels observed with global peers. Of the ten banks in our core sample, the two with the lowest leverage ratio were in the middle of capital raising exercises at the time of writing.

9. **Reliance on state aid has diminished.** Capital injected by the federal government came down from a peak of €29.4 billion and accounted for €17.1 billion at end-2013 while Public guarantees provided by the federal government have been fully phased out from their €168 billion peak. Several Landesbanken still benefit from risk-shields provided by their public owners. The repayment of state aid as required by the European Commission may be a drag on the capital of select banks and may offset any improvement in regulatory capital for some time. In addition, full exit conditions are not mapped out yet. The outcome of the asset quality review (AQR) and stress tests may also result in further needs for public assistance in vulnerable banks.

Funding has improved overall, but a few banks need to make further progress

10. **Liquidity is robust, but a few banks' funding is still relatively weaker.** German banks built strong liquidity buffers ahead of the implementation of the Basel III liquidity coverage ratio (LCR). According to the 2013 Bundesbank FSR, the 12 largest banks' liquid assets exceeded short-term liabilities by 22 percent in mid-2013. The average loan-to-deposit ratio in the sample of 23 banks (132 percent) is about 10 percentage points above the European average, but with a wide dispersion, as some Landesbanken remain very dependent on wholesale sources (Figure 3).

⁶ The leverage ratio shown in Figure 2 is constructed as tangible common equity divided by total tangible assets.

Wholesale funding on average represents a bigger *share of funding in Germany, even if this is partially offset by the low reliance on borrowing from the Eurosystem.*

Asset quality remains robust overall, with pockets of vulnerabilities

11. **German banks' assets are of higher quality than European peers'.** Non-performing loans (NPLs) are low, reflecting robust economic performance in Germany. At end-2013, NPLs averaged 5.8 percent for the largest 23 banks, or less than half the European average (11.9 percent)⁷. Coverage of NPLs appears to be in line with European standards (Figure 4).

12. **Credit risk appears to be concentrated in specific sectors which will be a focus of the AQR in Germany.** Shipping loans, loans for foreign commercial real estate (CRE) and legacy assets, including securitizations and exposures to selected European countries remain particularly vulnerable to default risk. Exposures to the GIIPS⁸ amounted to €338 billion, or 9.4 percent of GDP at end-2013. For the twelve major banks with an international focus, the aggregate exposures to the shipping industry and securitizations at end-2013 represented 42 percent and 46 percent of Core Tier 1 respectively, while exposure to foreign CRE represented 68 percent of core capital at end-2013:Q1.

13. **Asset quality, NPL coverage, and exposures to troubled sectors are very heterogeneous across banks.** For the largest banks, shipping and CRE exposures are modest relative to their total loan portfolio but the combined exposure to shipping and CRE reaches multiples of Core Tier 1 for some of the other banks. In particular, shipping exposures account for up to 20 percent of assets in some Landesbanken. Thus, while NPL ratios are low on average their dispersion is notable as they range from 1 percent to 20 percent. The coverage of NPLs shows a similar dispersion, with one Landesbank enjoying the strongest coverage (115 percent), and two Landesbanken showing the lowest, at 27 percent and 36 percent respectively. The AQR will pay particular attention to the consistent treatment of the classification of loans in forbearance across countries and across financial institutions, and some reclassification may be needed as a result in a few cases.

14. **The CA may uncover additional capital needs in vulnerable banks.** At an aggregate level, improved capital ratios should provide an adequate buffer against stressed conditions. Still, significant disparities among banks are likely to be identified. While in the aggregate exposures to troubled assets seem manageable and many banks appear to have excess capital at the moment or the ability to access markets, these exposures tend to be concentrated in a few vulnerable banks already under restructuring and further provisioning needs cannot be ruled out. The CA may therefore force a reexamination of some current restructuring plans.

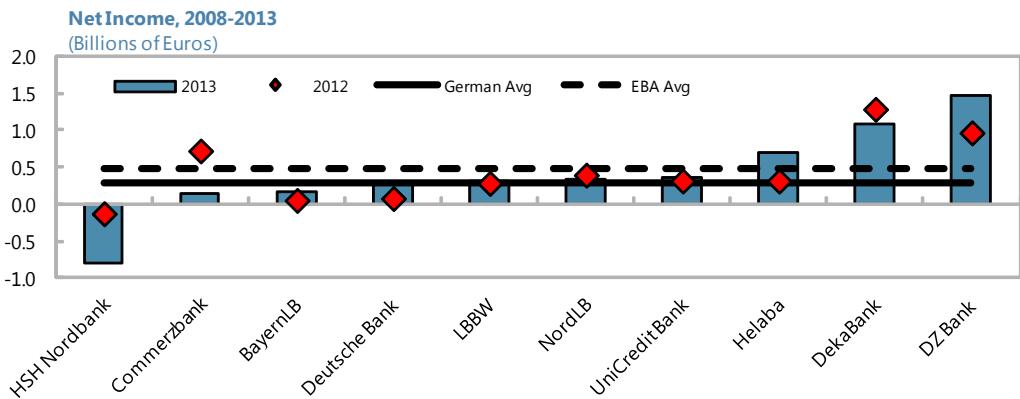
⁷ Only 5 banks had reported NPLs and coverage ratios as of mid-2013. At end-2012, NPLs averaged 5.6 percent, and coverage ratio 46.1 percent. Both metrics have improved in 2013.

⁸ Greece, Ireland, Italy, Portugal and Spain.

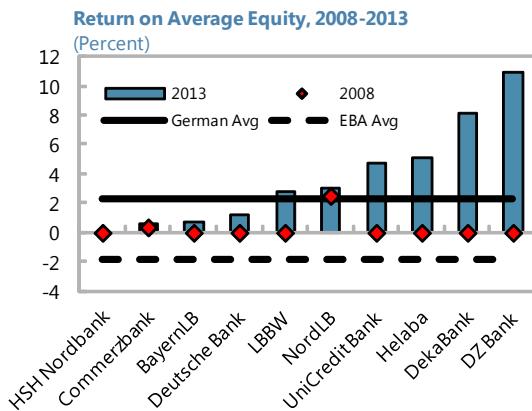
15. **Several avenues to address possible capital shortfalls identified by the CA could be considered.** Some German banks could reduce the nominal of their silent participations should they report a full-year loss according to German GAAP. They could raise also raise capital (as done by two of the largest banks at the time of writing), convert debt into equity, and/or reduce risk-weighted assets. Should private sources of equity not be available or sufficient and public sources be needed, the European Commission state aid rules would be applicable (e.g. on holders of subordinated debt). Creditor bail-ins for systemically important banks, if deemed necessary, would be expected to be applied with due consideration given to financial stability concerns.

Figure 1. Mixed Picture on Profitability

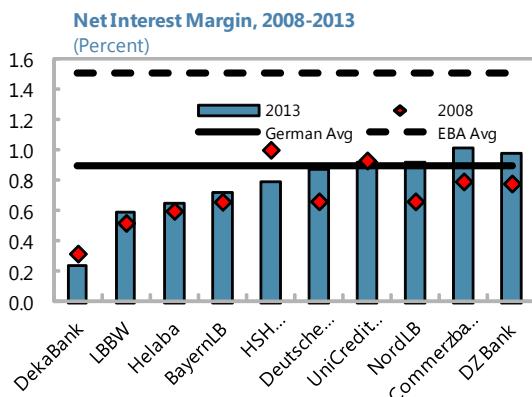
Stable 2013 net income over 2012.



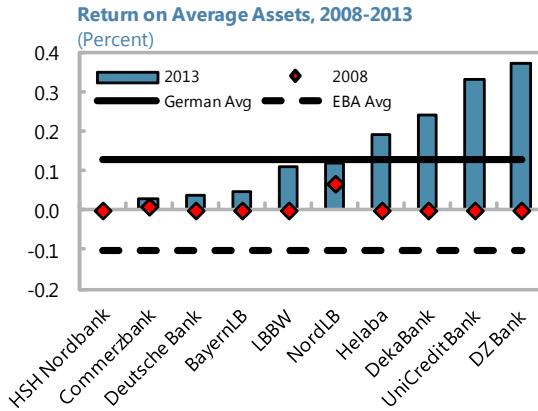
RoEs higher now, and above 2008 levels...



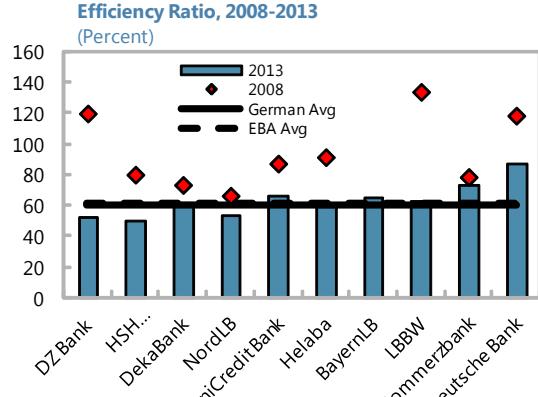
NIMs remain structurally lower than peers.



...but wide dispersion of RoEs and RoAs.

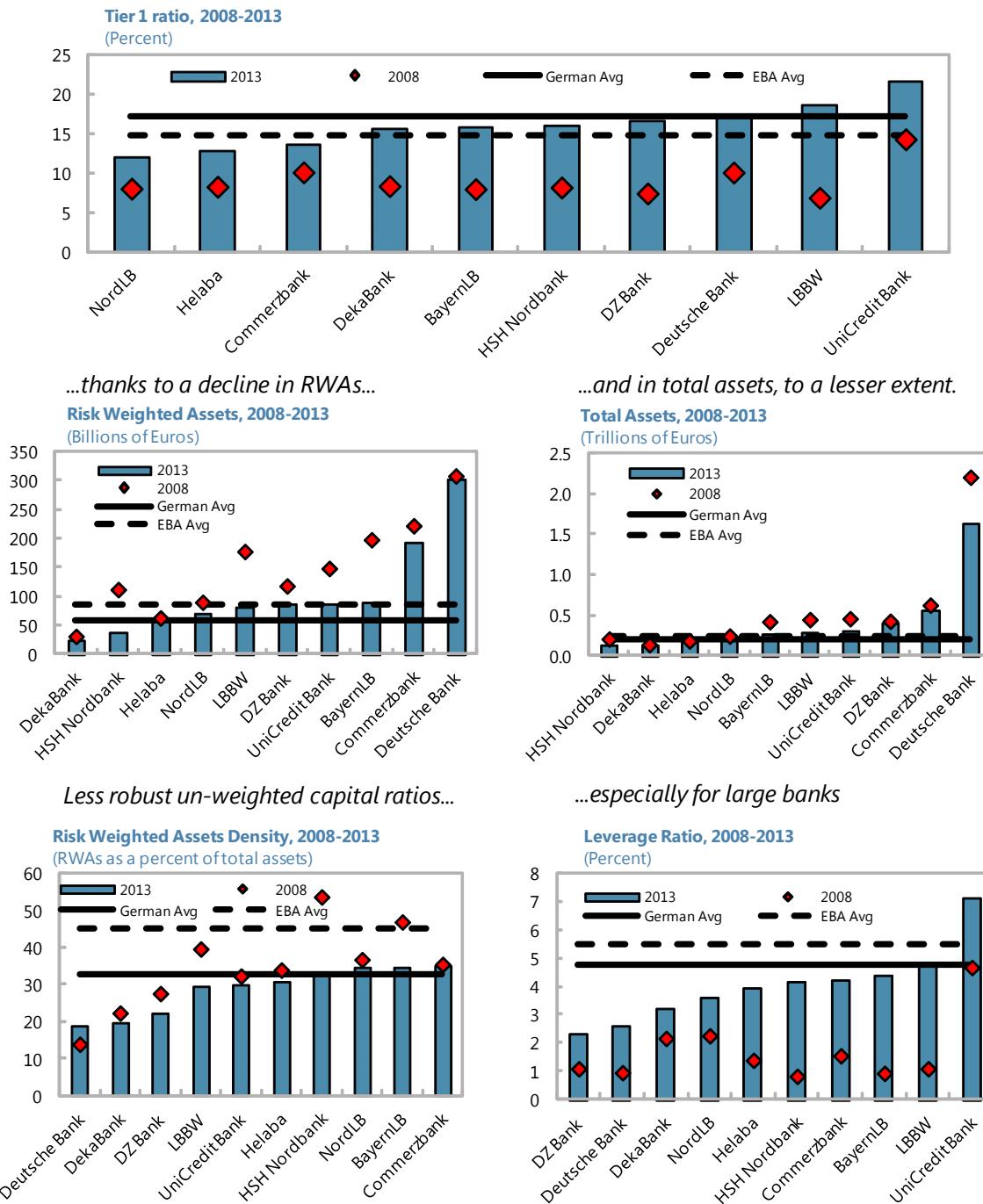


Cost-to-income ratios have improved.



Source: SNL Financial.

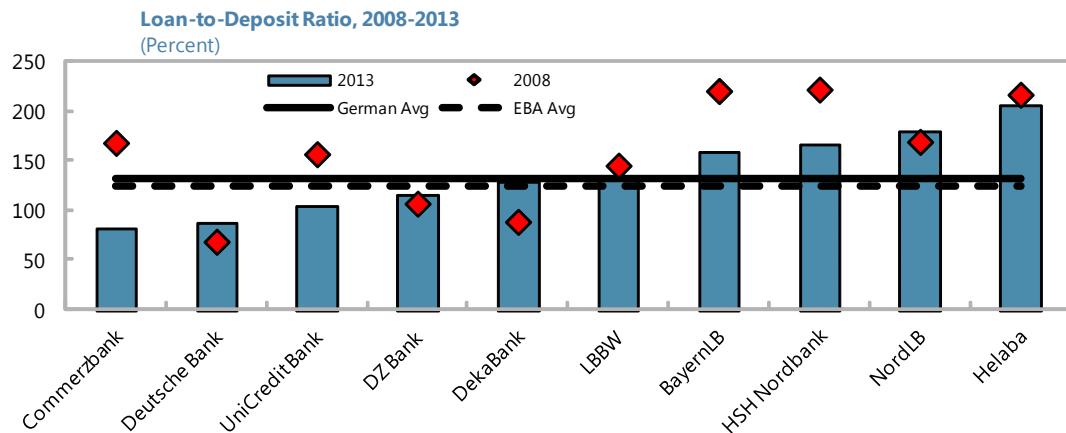
Figure 2. Robust Risk-Based Capital Ratios, But Weaker Leverage Ratios
Robust risk-based capital ratios...



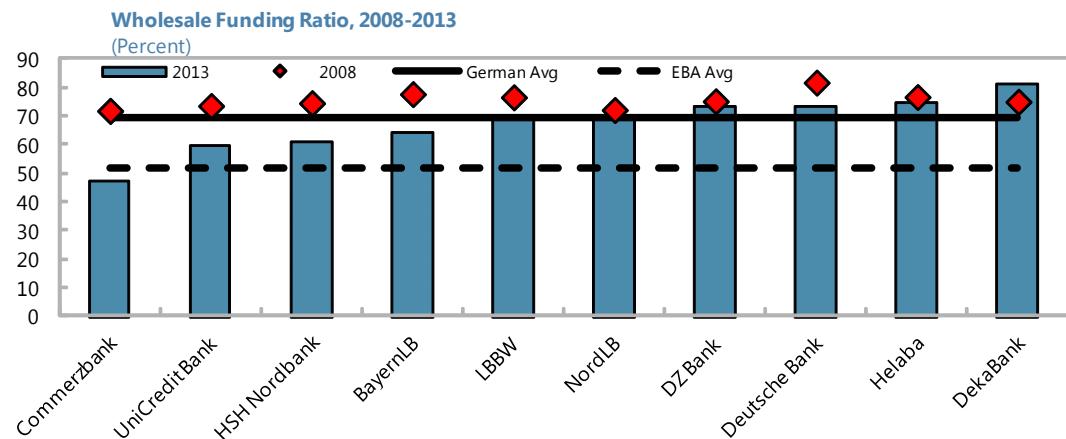
Source: SNL Financial.

Figure 3. Mixed Picture on Funding

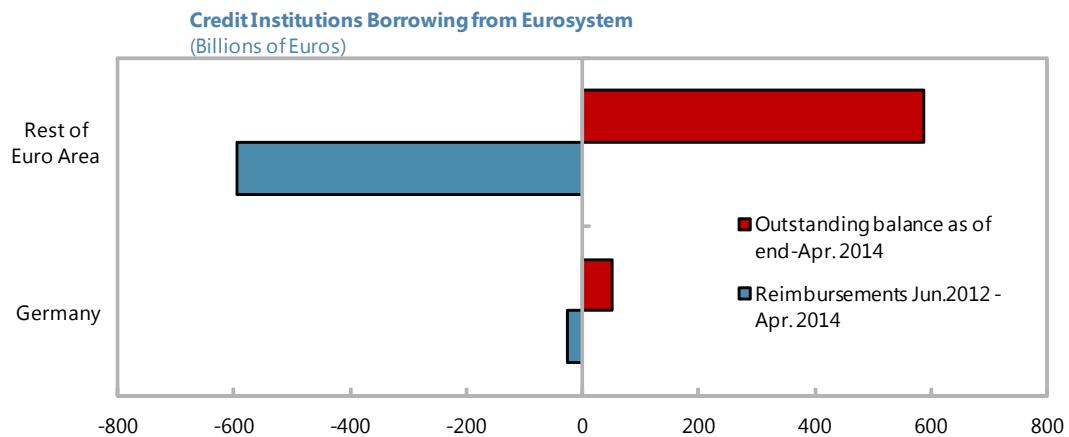
Improved LtD ratios, but wide dispersion.



Reliance on wholesale funding remains high overall, and excessive in some banks...



...but minimal reliance on ECB borrowing is a positive factor.

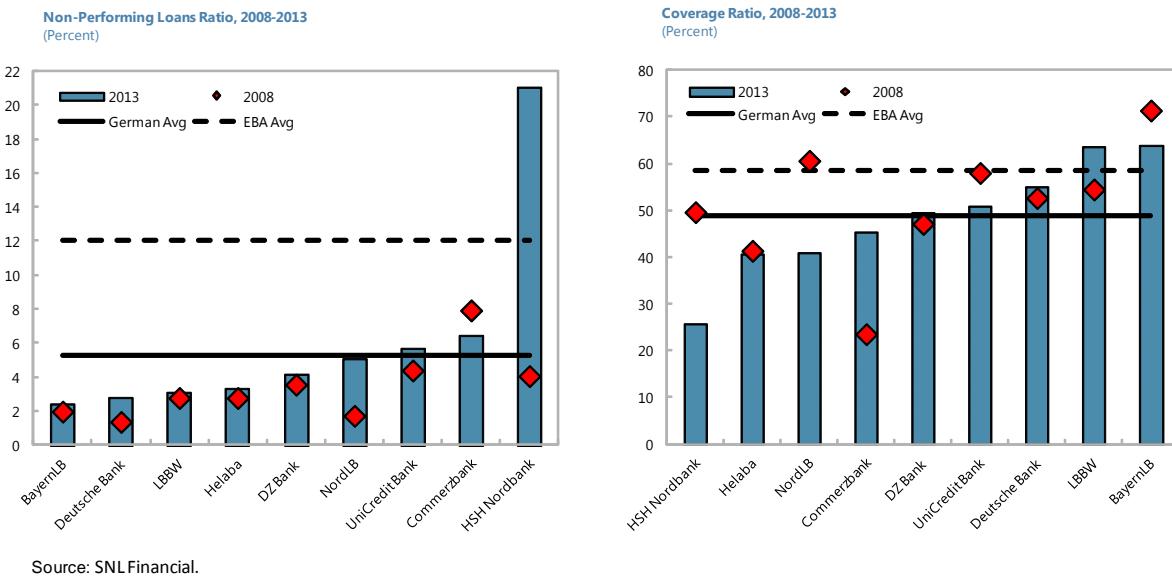


Source: Haver Analytics, SNL Financial, and IMF staff calculations.

Figure 4. Relatively Strong Asset Quality Overall

The banking system has lower NPLs than European peers, with some exceptions.

Provisions for impaired loans are somewhat below the European average.



Source: SNL Financial.