

The **EEAG** Report

on the European Economy

2010



EXITING THE CRISIS

ECONOMIC OUTLOOK

REBUILDING TRUST

GLOBAL DEBT

US IMBALANCES

THE EUROZONE

The **EEAG** Report

on the European Economy

2010

EEAG Report on the European Economy ISSN 1865-4568

Publisher and distributor:

CESifo Group Munich

Poschingerstraße 5

81675 Munich, Germany

Phone: +49 (0)89 9224-0

Fax: +49 (0)89 9224-1409

www.cesifo.org

Reproduction permitted provided source is quoted and copy is sent to the publisher

The **EEAG** Report

on the European Economy

2010

Foreword	2
Summary	3
Chapter 1	
The European Economy	11
Chapter 2	
A trust-driven financial crisis. Implications for the future of financial markets	53
Chapter 3	
From fiscal rescue to global debt	71
Chapter 4	
Implications of the crisis for US adjustment needs	101
Chapter 5	
The Financial Crisis: Risks and challenges for the euro area	111
Authors	
The members of the European Economic Advisory Group at CESifo	129
Previous reports 2002–2009	133

FOREWORD

This edition of the Report on the European Economy by the European Economic Advisory Group at CESifo (EEAG), the ninth in the series, dissects the most salient aspects of the financial crisis that swept the world and, in particular, explores what needs to be done to nurture the incipient recovery. While the resolute action taken by the leaders of the affected countries has prevented the patient from dying, a number of chronic ailments still need to be addressed, posing new challenges for economists and policymakers. This is no time for complacency.

We contribute to the discussion by including an extensive analysis on public debt and suggesting measures to rebuild trust in financial markets – pivotal topics in the coming years. Countries all around the world will have to start reducing indebtedness after the sharp increase in public debt resulting from the massive stimulus packages, but the crucial issues will be choosing the right moment to reinstate fiscal virtue, together with devising an effective financial market regulation framework. Equally important will be the enduring problem of global imbalances induced by the United States' long-lasting trade balance and current account deficits. We propose ways for overcoming those issues. The chapter providing a macroeconomic outlook for 2010 also shows in retrospect the uniqueness of last year's economic crisis. We are neither too pessimistic, nor do we predict a flourishing world economy for 2010: the consequences of the expiring fiscal packages and an increase in unemployment will slow down growth. Another chapter of the Report, in turn, gives insights about the role of trust in financial markets and the future of financial regulation. Our country chapter this year is devoted to the whole eurozone, highlighting – eight years after its introduction – the success and weaknesses of the euro in promoting stability during the crisis. Thanks to its non-partisan nature, the EEAG can offer fresh, unconventional views based on sound economic reasoning for policymakers, business leaders and academics.

The EEAG, which is collectively responsible for each chapter of this report, consists of a team of eight economists from seven European countries. This year, the Group is chaired by Gilles Saint-Paul (University of Toulouse) and includes Giancarlo Corsetti (European University Institute, Florence), Michael Devereux (University of Oxford), Luigi Guiso (European University Institute, Florence), John Hassler (Stockholm University), Jan-Egbert Sturm (KOF Swiss Economic Institute, ETH Zurich, vice-chairman), Xavier Vives (IESE Business School) and myself. The members of the Group participate on a personal basis and do not represent the views of the organisations they are affiliated with.

As always, the report benefited greatly from the support of the Ifo Institute, which provided the European economic forecast, as well as from help provided by the Center for Economic Studies of the Economics Faculty of the University of Munich. I wish to thank the members of the group for investing their time in a challenging project and I gratefully acknowledge valuable assistance provided by Maximilian von Ehrlich and Darko Jus (research assistants), Steffen Henzel, Nikolay Hristov, Oliver Hülsewig, Johannes Mayr, Georg Paula and Timo Wollmershäuser (economic forecast), Paul Kremmel (editing), Christoph Zeiner (statistics and graphics) and Elisabeth Will (typesetting and layout). Moreover, I wish to thank Swiss Re for hosting our spring meeting.

Hans-Werner Sinn
President, CESifo Group
Professor of Economics and Public Finance,
Ludwig Maximilians University, Munich

Munich, 20 February 2010

SUMMARY

The magnitude of the crisis caught Western economies off guard, where, despite the large global imbalances that were accruing, a buoyant macroeconomic context prevailed. In the United States, the boom was sustained by an asset bubble and a very low savings rate, which led to the accumulation of trade deficits financed by China and raw materials suppliers. Europe was experiencing a moderate recovery from a period of low growth and was in the middle of painful attempts to reform its welfare state and its rigid labour markets, to address its endangered public finances and its disappointing long-term growth performance. The crisis has put these adjustments on hold as all governments have implemented massive fiscal and monetary stimulus packages. As a result the world economy may emerge from the crisis with the same unresolved imbalances and structural problems that prevailed before the crisis, aggravated by the massive accumulation of government debt in response to the crisis.

This year's EEAG Report addresses the challenges for the developed world to exit the crisis without compromising its long-term prospects.

In addition to the traditional chapter discussing the immediate macroeconomic outlook, we document the adverse effects the crisis had on trust in financial markets. This factor will help determine whether the world economy can be rebuilt on a more stable foundation; indeed we document that the crisis has had substantial adverse consequences on the level of trust, which leaves us in doubt as to whether the financial sector will be able to resume its activity at the pre-crisis level. Chapter 3 discusses the consequences of the large deficits of major developed countries for the sustainability of public finances in the long run. Chapter 4 discusses the impact of the crisis on the long-term sustainability of the US economy in terms of government accounts and the external balance. The crisis has worsened the problems already existing in both areas. Chapter 5 discusses the impact of the crisis on the euro area. We argue

that the euro has shielded member countries from severe balance of payment crises. On the other hand, the euro area faces tough challenges at its periphery as candidate countries face looming balance of payment crises, while developments in Greece suggest that the credibility premium of membership is conditional on sound economic policies.

Chapter 1: Macroeconomic outlook

After the deep economic recession during the winter of 2008/2009 triggered by a US-led financial crisis, many countries went through a stabilisation period and now seem to have entered a recovery phase. Global monetary and fiscal policies have prevented an even worse outcome and have helped bring about the current recovery. This has been reinforced by a positive inventory cycle.

However, we expect a number of factors to dampen the recovery in the developed world. First, the restructuring process within the banking sector is far from complete. Credit constraints may grow tighter during the recovery as an increased demand for funds may come up against banks' reluctance to extend loans. Second, capacity utilisation is low, and investment will not pick up until this margin of slack has been reduced. Third, the labour market situation will not only remain tense, but will slightly deteriorate further – dampening private consumption. Finally, fiscal policy stimulus cannot be prolonged in face of a quickly deteriorating fiscal balance.

Economic conditions will be more favourable in emerging economies, which we expect to become the growth engines for the world economy.

After having experienced a decline unprecedented since World War II — by minus 2.3 percent last year — we expect world GDP to increase by 2.3 in 2010. Hence, world economic growth will stay below potential. Inflation will accelerate somewhat but also stay well below its long-term average.

In the *United States* the deepest recession since World War II has come to an end. GDP in 2009 ended up

2.6 percent lower than in 2008. Private consumption overall fell by 0.6 percent in 2009, whereas the private saving rate has been steadily increasing. The strongest negative growth contribution last year came from investment. The domestic problems led to a sharp fall in the demand for foreign goods and services over the year. The decline in exports, on the other hand, was clearly less pronounced. Consequently, the US trade balance was able to improve substantially, thus contributing to a reduction in global imbalances. After approximately three years, real-estate prices stopped falling in mid-2009. To a large extent, this development can be traced back to the massive subsidies and tax reliefs granted by the US government. Only when state support runs out, however, will it be possible to judge whether the real-estate market recovery is sustainable.

Although the recession has ended, the US economy still has to remedy its structural problems. US consumers have been living beyond their means for too long. To allow for a way back to sustainable growth, US consumers are in a process of curtailing their consumption. This process has already set in but needs to continue during our forecasting horizon. Furthermore, although the worse seems to be over for the banking industry, a continuation of write-offs is highly likely and government intervention in the banking and real estate sectors will consequently remain high. On top of that, fiscal sustainability is an issue that will stay on the agenda for years to come.

After having been hit the hardest amongst the large economies in the world during winter 2008/2009, the economic recovery in *Japan* set in already in the second quarter of last year. The most important drivers for the mild recovery were foreign trade and private consumption. However, this will not prevent the annual growth rate for 2009 from falling to – 5.3 percent. Japan will continue its recovery in the short run, but its medium term prospects are rather bleak. Exports will remain the main driver of growth this and next year. The Japanese export economy benefits from its geographical proximity to Asian emerging markets, which are experiencing a surge in domestic demand.

Over the summer *China* was able to recover to nearly pre-crisis growth levels. To a large extent this was caused by a strong increase in investment activity initiated by huge fiscal and monetary stimulus programmes of the government. The short-term economic prospects for China remain quite positive.

This can be attributed especially to government policy, which succeeded – with a massive stimulus programme – in strengthening its economy without relying on outside impulses. The programme is scheduled to expire by the middle of this year and will not be fully offset thereafter by impulses from the rest of the world. From a structural perspective, economic policy is increasingly putting a burden on the Chinese economy by aggravating unbalanced economic developments. In recent years gross capital formation has accounted for 40 percent of GDP, against only 35 percent from private consumption. In a typical developed country, these figures are around 20 percent and 65 percent, respectively. With its clear focus on investment activity in large, often state-controlled, enterprises, the stimulus package will raise the share of investment further. In the medium term, many of these investments may prove to be misdirected and unprofitable, and may lead to overcapacities in some sectors.

With the sole exception of Poland, all *European Union* member countries went through a deep recession last year. A comparison of the peak in the first quarter of 2008 with the trough in the second quarter of 2009 reveals that the European Union – and with it the euro area – contracted by 5.1 percent over a period of five quarters. The three Baltic States – Estonia, Latvia and Lithuania – were especially hard hit by the economic crisis and saw their GDP drop by approximately 20 percent.

Although the decline in private consumption and investment continued, the European Union started to recover during the second half of 2009. Of the western and southern European member countries, only Cyprus, Greece, Spain and the United Kingdom were still in recession in the third quarter of last year. Similar to the US's, the European recovery is fragile. Although the prospects of firms have improved, problems within the banking sector remain. This is likely to lead to a more restrictive credit supply which, together with continued under-utilisation of production factors, will prevent a strong recovery of investment. Furthermore, worsening labour market conditions, small wage increases and somewhat higher inflation will lead to a reduction in real disposable income, thereby reducing consumption growth. Finally, we also expect fiscal stimulus to be transitory, as in the US. Hence, according to our forecasts, after having sunk by 4.0 percent last year, GDP growth will rise to 1.0 percent this year.

Mainly as a consequence of the drop in oil prices, inflation rates in the European Union fell until summer last year. The increase in prices will accelerate somewhat on the whole, but – given low capacity utilisation rates and stable inflation expectations – remain restrained. The increase in consumer prices will be 1.2 percent in the European Union in 2009 (after 0.7 percent in 2008). In the euro area, the inflation rate will equal 0.9 percent in 2010 (after 0.3 percent last year). The increased indebtedness of European governments, caused by large fiscal stimulus programmes, together with slowly rising interest rates will raise the debt burden. Government interest expenses are certain to rise in the years to come and crowd out other types of government spending. This is already a good reason for governments to prepare and communicate exit and consolidation strategies to return to sound and sustainable public finances again. More importantly, such strategies are needed to strengthen overall macroeconomic stability and to guarantee that any future crisis can again be relieved by appropriate fiscal policy measures.

To summarise, our assessment of the macroeconomic outlook is that while policy has been successful in preventing a new great depression and a deflationary spiral, the recovery remains fragile and future growth prospects are clouded by structural problems. Many of these structural problems were present before the crisis, but some new structural problems may have been spawned by the crisis itself, especially in the financial sector. Chapter 2 of this report discusses one of them, namely the collapse of trust.

Chapter 2: A trust-driven financial crisis

A key ingredient in understanding the financial crisis is a dramatic drop in trust towards financial intermediaries, bankers and financial markets. While many conventional factors have contributed to the emergence and propagation of the financial crisis, they alone cannot fully explain the sudden collapse in economic activity that took place after October 2008.

We argue that starting in summer 2008 something very important was destroyed: the trust that intermediaries have in each other and that investors have in the financial industry. Trust – the belief a person has that a counterpart in a transaction will not take advantage of him – while normally ignored in standard economic analysis, is crucial in many transactions and certainly in those involving financial

exchanges. When trust is missing, financing disappears and economic activity suddenly stops. This is what happened in October 2008 and the subsequent months. The data show that the percentage of people that reported having full trust in banks, brokers, mutual funds or the stock market, which was as high as 40 percent in the late 1970s and around 30 percent just before the crisis hit, dropped to 5 percent and has not recovered since. Similarly, we find that for the first time since the data on trust exist, self-reported trust in banks and bankers has fallen below the trust people have in other, randomly selected, people.

This marked fall in trust was largely provoked by the revelation of the opportunistic behaviour that the unfolding of the crisis brought to light, of which the Bernard Madoff fraud is emblematic, and has contributed to casting a dark light on the whole financial industry. Indeed, we show that in states where the number of victims of the Madoff fraud was higher, the level of trust towards banks, bankers, brokers and mutual funds has fallen more than in states with a lower concentration of Madoff victims. The destruction of trust inherited from the crisis has important implications for the future of financial markets, including the demand for financial products and investors' portfolio choices. Most likely it will result in:

- A drop in investments in risky assets. Such assets lend themselves more easily to opportunistic behaviour than simpler securities. Thus, portfolios will likely be twisted markedly towards safer securities and away from stocks.
- A drop in the demand for complex financial instruments with ambiguous returns. These are assets that are more exposed to the risk of fraud and consequently more easily placed among high-trust investors. When trust dwindles the demand for these instruments declines and investors revert to “familiar” instruments
- Less diversified portfolios and a greater share of domestic assets, the latter being perceived as more familiar and trustworthy. On the other hand, investors will entertain relations with multiple intermediaries in order to diversify the risk of opportunistic behaviour by reducing exposure to each one of them. Both effects are costly: the first because one loses the benefits of diversification, the second because of the cost of setting and maintaining multiple relations.
- Less reliance on and delegation to intermediaries. Our evidence shows that a fundamental ingredient

in the intensity of financial delegation is the level of investors' trust. Since delegation is all the more necessary the more one invests in sophisticated securities, also through this channel there should be a move towards simpler portfolios.

- Finally, since an insurance contract is itself a financial contract and as such is prone to the opportunistic behaviour of the insurance company, the fall in trust should also affect the demand for insurance.

To sum up, the fall in trust towards all segments of the financial industry will give rise to a generalised flight from financial trades, particularly those that are severely exposed to opportunistic behaviour.

Insofar as it results in a shift towards safer assets, it will push up the equity premium and make equity financing more expensive. This may have consequences for fast-growing and innovative firms that depend more heavily on this type of financing. Similarly, if the increased mistrust results in a preference for instruments with shorter maturity, it will raise the cost of long-term financing, hampering projects with high yields but longer maturities. Because of this it is important to understand how trust in financial markets and intermediaries can be rebuilt. The chapter examines two avenues: The first relies on enhanced regulation; the second on a reaction by the industry.

The regulatory approach, so far the only one that has been followed to rebuild trust, is to raise the strength of financial regulation. This approach has been the subject of several of the recent G20 meetings and of the proposals that are being discussed at the Financial Stability Board. Many of the proposals that are under scrutiny go beyond the purpose of rebuilding trust and will most likely affect the perceived *solvency* of the intermediaries, to lower the chance of future crisis. But these measures are likely to have little impact on trust.

From the viewpoint of the regulation of investors' relations with financial intermediaries, the most relevant proposal that can help recover trust is the creation of the consumer protection agency proposed by the Obama administration. The agency would oversee consumer financial products, which have been regulated in the past but whose oversight was exposed as lax. One may also mention the creation in the US of a Financial Fraud Enforcement task force to combat financial crimes.

Because these initiatives are both specifically aimed at protecting investors from abuses they may actually contribute to rebuilding trust. But there are also reasons to believe that by themselves these interventions may have limited impact.

The alternative strategy to rebuild trust relies on the idea that losing investors' trust is very costly for the financial industry. If it is costly, intermediaries could be expected to have strong incentives to take actions to re-build *their* reputation and re-gain the trust of their customers. Unfortunately there are no easy recipes on how A may convince B to reconsider his opinion about the trustworthiness of A. The chapter examines three possible mechanisms.

- A rating system that even the most (financially) illiterate investor can understand. It consists of rating intermediaries on their ability to offer trustworthy services and to limit incentives to exploit conflicts of interest at the expense of the investor. The rating system, offered in an easily understandable metric (e.g., a number from 0 to 10), would allow all investors to distinguish intermediaries on the basis of their integrity, thus reducing the scope for opportunistic behaviour. It would de facto provide intermediaries with incentives to raise their trustworthiness by transferring punishment power to the investors.
- A trust-based compensation scheme. A second, more direct mechanism to rebuild trust is to provide incentives to build it. If the compensation of the investor's manager depends on the level of trust investors have in their asset manager, the latter have strong incentives to behave in a trustworthy manner and this, perhaps slowly, will raise the investors' trust and their willingness to invest.
- Promoting investors' financial education. A third strategy is to take actions that promote the financial education of the investors – for instance by lobbying the government to have financial education taught at (public) school, making financial education material, certified by third parties, available to investors, and other such measures. An intermediary that promotes financial education signals its intention to be willing to deal with experienced and sophisticated investors, with enough nous not to fall victim of financial abuses and distorted advice. This should contribute to improving investors' trust.

Needless to say, investment in financial education pays off in the very long run; however the returns to

the intermediary in terms of increased trustworthiness may be more immediate if the intermediary's commitment to transfer power to the investor through this channel is credible. Credibility would be enhanced if the sponsoring of financial education programmes is part of a broader policy aimed at limiting intermediaries' incentives to deceive investors, such as the trust-based compensation scheme and the bank fairness index.

All the above measures endeavour, from different angles, to limit the scope for intermediaries' opportunist behaviour. In each case, the policy is not imposed; adhering to it is left to the discretion of the intermediary. However, we argue, there is no automatic mechanism that guarantees that intermediaries will agree to adopt these policies voluntarily. Rather, if dishonest behaviour is dominant among intermediaries, even the honest ones may be unwilling to adopt these measures on their own and help the economy move to a better outcome where competition drives out dishonest behaviour. We also argue that regulation by itself, without the involvement of the intermediaries, may fail to restore trust. However, regulatory agencies may play a very important role in coordinating the selection of the "honest" equilibrium. For instance, using moral suasion to persuade even a small but important number of intermediaries to "play the honest game" may be enough to trigger a response of the same type by the dishonest ones and move the whole industry equilibrium.

The next chapter discusses long-run issues associated with the substantial increase in public debt that is currently taking place in most developed countries.

Chapter 3: From Fiscal Rescue to Global Debt

In just over a year, the world has moved from a consensus that the financial and economic crisis necessitated a large and co-ordinated fiscal stimulus to serious concerns about the size of the public debt.

There was certainly a consensus at the end of 2008 that a fiscal stimulus package was needed. The IMF argued that the "optimal fiscal package should be timely, large, lasting, diversified, contingent, collective and sustainable". The European Council of the EU agreed a "European Economic Recovery Programme" (EERP) in December 2008, which called for a discretionary fiscal stimulus of at least 1.5 percent of GDP.

And in April 2009, the G20 stated: "We are undertaking an unprecedented and concerted fiscal expansion, which will save or create millions of jobs which would otherwise have been destroyed."

And there have certainly been large increases in public deficits throughout the EU – and elsewhere – leading to considerable rises in the stock of outstanding public debt as a percentage of GDP. In 2009, the total deficit in the EU was around 6-7 percent of GDP, and it is expected to rise further in 2010. There has been a corresponding increase in outstanding debt, rising to around 72 percent of GDP in 2009, with further increases certain in 2010 and beyond.

However, there are wide variations across countries, both in the size of the deficits in 2009 and 2010, and in the level of outstanding debt. For example, the UK, Ireland and Latvia have particularly high deficits, though in all three cases their outstanding debt is relatively moderate as a proportion of GDP. Italy, Greece and Belgium have much higher outstanding debt, because all three have had high deficits for several years.

These high deficits have generally not reflected discretionary changes by EU governments. While most governments introduced a discretionary fiscal stimulus in 2008 and 2009, these were small relative to the overall deficits. The form of these discretionary changes (and even their sign) has varied considerably between countries.

There is some empirical evidence that a fiscal stimulus has a positive effect on output, although there are many problems in measuring the effect, so that the size of the fiscal multiplier is not known with any certainty. In any case, there is little reason to suppose that effects estimated on historic data are likely to be valid in the midst of a recession. This is particularly the case when interest rates are effectively at zero, and the economy is shaken by an ongoing financial and economic crisis, when there may be very large multipliers for government spending. Indeed, recent theoretical and empirical work suggests that spending expansions and tax cuts supporting current demand may be quite valuable under such circumstances.

The scope for reducing deficits depends crucially on the rate of economic growth achieved over the next few years, and the degree to which real public spending can be curtailed. For example, a simple calculation suggests that if spending is kept constant in real terms

throughout the EU, then economic growth of around 2 percent would see the aggregate EU deficit reduced to zero by around 2017, with outstanding debt reaching a peak of around 100 percent of GDP. Of course, some countries would need a higher growth rate to achieve fiscal balance within this period.

There are costs to maintaining high debt levels, though these should not be blown out of proportion. Especially at low interest rates, the cost of servicing debt is of the order of 3 percent of GDP, though again there is considerable variation across member states. Two factors could increase this cost in the short to medium term. First, interest rates are likely to rise. Second, public debt appears increasingly risky to the market, which implies that higher risk premia could be charged.

Although these risk premia are currently not large for most countries, they may grow in the near future, reflecting doubts about debt sustainability – recent developments in Greece suggest such a possibility is not so remote. Governments must therefore define credible strategies to reduce deficits over the medium term.

A key concern with designing such strategies is that anticipation of future tax rises and/or spending cuts may hamper the economy immediately, as individuals perceive their lifetime income to be lower, and firms anticipate a contraction in demand. This need not be the case. On the contrary, there are ways to design debt consolidation strategies that actually support current stimuli.

One way of reconciling the need for a credible deficit-reduction strategy with the need to avoid harming a fragile economy is to announce rises in taxes on spending – such as VAT – to take effect from some future period, say in one year's time. This would induce individuals to bring spending forward, which would provide a temporary stimulus to the economy.

Another way consists of announcing well-designed measures bringing government spending on goods and services below trend, to be implemented sufficiently far in the future as to avoid the risk of exposing the economy to additional deflationary pressures when policy interest rates are still close to zero. Provided that they are not implemented too early, future spending cuts are beneficial to the recovery, as they contain the rise in long-term inter-

est rates (as well as attenuating concerns about debt sustainability).

A final point concerns coordination. The attempts to stimulate the economy benefited from coordination efforts. For an individual country, a stimulus to spending might be largely reflected in increased imports, creating demand for goods and services produced elsewhere. A coordinated policy reduces this risk. In principle, the same argument also applies (with a different sign) to fiscal adjustment. If all countries implemented a contractionary fiscal adjustment simultaneously and independently, without internalising negative output spillovers abroad, this would be likely to hamper the economic recovery. This adverse effect would be reduced if such policies were introduced in a coordinated way, possibly leading to more gradualism.

However, coordinated gradualism should not interfere with the adoption of measures necessary to preserve stability. The worst-hit countries or the countries with the most fragile public finances should adjust upfront and most deeply, to prevent the spreading of concerns about fiscal sustainability. If gradualism in the name of coordination feeds doubts about debt consolidation, then no coordination is a much better option.

Among all developed countries, the country subjected to the largest imbalances not only in terms of public finances but also in terms of its external position is the United States. Chapter 4 discusses the issues associated with US adjustment.

Chapter 4: US adjustment needs

Given the size of US fiscal and external deficits, a central question is whether the US economy is on a sustainable path and to what extent the answer to this question has changed during the recent macro-financial crises.

We first note that a current account deficit does not necessarily have to be reversed in order to guarantee sustainability. In principle, the same is true for a fiscal deficit. This depends on how large the economy's growth rate is relative to the interest rate on its debt. If the growth rate is larger than the interest rate, the size of the debt relative to GDP shrinks by more than the increase in debt due to additional interest.

Before the financial crisis, the forecast for the coming decade implied clear improvement in the US fiscal balance. The projections of the Congressional Budget Office made just before the crisis implied deficits would move into surpluses and debt to GDP ratios would fall from 2013. However, the longer run forecasts were already much less rosy before the crisis. Due to aging and increased costs in health care, the federal governments spending on Medicare, Medicaid and Social Security were forecasted to grow at an accelerating speed, implying a glaring and alarming inconsistency between government outlays and the electorates' willingness to pay.

The CBO forecasts changed dramatically during the macro-financial crisis of 2009. In August 2009, the forecast was that the US government debt would increase very rapidly. The increasing trend in the debt as a share of GDP during the 1980s is back and perhaps even stronger than before.

Half way into 2009, the forecast had changed to an unprecedented deficit of 11.2 percent. This is almost twice as large as the previous record deficit of 6.0 percent in 1983. Furthermore, the CBO forecast implies that the deficits in 2010 and 2011 will also be above the previous record.

Furthermore, while GDP growth is projected to rebound substantially in 2012, the budget deficit is not expected to go back to the previous track. Rather than turning back to black by the middle of the decade, the forecast now points at deficits in the order of 3 percent of GDP for the whole period. Part of this can be explained by the debt build-up, implying higher interest costs. It is, however, alarming that also when removing the interest payments, the budget is 2 percent of GDP weaker than before the crisis.

Before the crisis, important indicators pointed towards an unsustainable fiscal situation in the long run, i.e. for the period after the current decade. In the medium run, however, there was no direct danger. After the crisis, also the situation in the shorter run is now alarming.

Regarding the foreign balance we note that there is a substantial discrepancy between different ways of measuring the current account. In particular the returns, including capital gains on the very large stock of foreign gross assets, are underestimated in some official calculations of the current account. The US has foreign gross assets with a value sub-

stantially larger than its yearly GDP. Furthermore, it has for decades earned a higher return on its assets than it pays on its liabilities. This return privilege allows the US to run a trade balance deficit of about 4 percent of GDP without increasing its net foreign debt.

If the return privilege remains, debt build-up is not going to force the US into large adjustments and dollar depreciation. In this respect, the current account deficit is not a big worry. But we do not know why the US enjoys such a return privilege. It seems reasonable that part of it could be explained by a superior financial sector in the US. If so, the financial crisis may well eliminate part of this superiority, which could lead to lower returns and a lower ability of US citizens to generate income by taking on foreign risk. If the return privilege were to vanish, quite dramatic and fast structural adjustments would need to be undertaken, which would have a large impact on the world economy and the value of the dollar.

The final chapter discusses the implications of the crisis for the performance of the euro area.

Chapter 5: Implications of the crisis for the euro area

The current crisis has led many analysts to re-assess the role of the euro. At face value, the euro area has done relatively well in avoiding the massive financial crisis of Anglo-Saxon countries. Does the crisis prove the virtues of the euro, or can it be a source of tensions that strain the viability of the monetary union?

We acknowledge that membership of the euro area has helped to eliminate the possibility of a "twin crisis", i.e. a joint banking and balance of payment crisis, in the member countries. Such crises may occur when the liabilities of financial institutions are denominated in foreign currency. During such a crisis, expectations of a sudden drop in the exchange rate reduce the solvency of those institutions, which makes it more likely that a run may occur. To the extent that these crises are self-fulfilling rather than driven by fundamentals, the euro is unambiguously beneficial. It reduces their likelihood because member countries borrow in euros and even if they were to borrow in foreign currency, it is unlikely that a debt overhang in a particular country could trigger a sharp depreciation of the euro, as that country only accounts for a small part of the entire euro area economy.

On the other hand, the crisis brings about some scenarios that may be problematic. One such scenario is a rapid, excessive appreciation of the euro reflecting a flight out of US assets. Another is a balance-of-payments crisis in Central and Eastern European countries. Despite the fact that these countries are not members of the monetary union, they are expected to join some day, and financial and macroeconomic fragility there affects the euro area. While we consider the first scenario unlikely, although by no means impossible (given our assessment of future US adjustment needs), the second one may leave policymakers in the euro area with tough choices. These may include a bail-out of some Eastern countries that may weaken the euro area, an early entry of Eastern applicants at inadequate parities and under bad macroeconomic conditions, or a balance-of-payments crisis in the East that may delay entry.

Finally, we document a number of asymmetries and imbalances between the core members of the monetary union, in particular with respect to inflation differentials and net foreign asset positions. It is unclear whether the crisis exacerbates or dampens those asymmetries. But the evolution of spreads in government yields during the crisis suggests that the credibility of the euro area is not absolute. It is plausible that the asymmetries, while not accentuated by the crisis, undermine the credibility of the currency zone, which itself becomes more of an issue in times of crisis. That is, a shrinking economic activity may make imbalances such as low competitiveness, high trade deficits or high public debt more problematic, which increases the likelihood of an exit from the euro area or of a default on public debt. The rise of the spreads during the crisis suggests that over a ten-year horizon and for a peripheral country, markets do not consider those possibilities as rare events.

One case in point is Greece: in December 2009, its sovereign debt was downgraded to BBB. The spreads shot up again as debt has grown well beyond 100 percent of GDP, while low competitiveness due to past cumulated inflation differentials makes it difficult to exit the recession. Possible scenarios include outright default, exiting the euro area, or a bail-out from core euro countries. None of those scenarios is favourable for the euro. A bail-out can be especially problematic if it fails to prevent contagion to other, much larger economies with a public debt overhang, such as Belgium or Italy, for which a bail-out would be too costly.

THE EUROPEAN ECONOMY

1. The current situation and the macroeconomic outlook

After a deep economic recession during the winter of 2008/2009, which was triggered by a US-led financial crisis, many countries went through a stabilisation period and now seem to have entered a recovery phase. Global monetary and fiscal policies have prevented a worse outcome and lie at the roots of the current recovery. Furthermore, the search for liquidity during the crisis has created an inventory cycle which will also drive growth for the time being.¹ However, the restructuring process within the banking sector is far from being completed and the too low national saving rate in the US has not reached structurally sustainable levels yet. Consequently, the fading out of fiscal and monetary stimulus measures this year will likely leave the world economy struggling to achieve growth in the years to come. Relatively sound economic conditions allow emerging countries to witness a revival of their economies. Their domestic economies will remain the growth engines for the world economy.

Although the roots of the crisis lie in the US, of the larger economic regions, Japan and the European Union suffered the most. This can partly be explained by the much more pronounced economic policy reactions of US officials and partly by the sharp correction in global imbalances. The US trade account improved substantially, exporting part of its problems to the rest of the world. On the other hand, Japan and Europe saw a clear deterioration of their external balance and thereby acted – together with many emerging markets – as shock absorbers for the world.

¹ When discussing the cyclical situation in the European Union in Section 1.3.6, we clarify what is meant by the inventory cycle.

The European economy will only temporarily experience somewhat higher growth. Although business prospects of firms have improved, problems within the banking sector remain. This will lead to a more restrictive credit supply which, together with continued underutilisation of production factors, will suppress especially investments. Worsening labour market conditions, small wage increases and somewhat higher inflation will lead to a reduction in real disposable income, thereby reducing consumption growth. Overall growth will remain subdued at least this year.

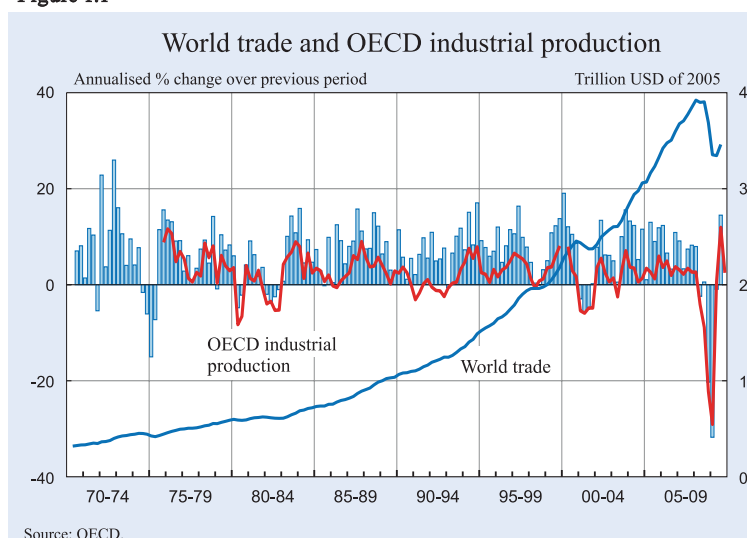
1.1 The current situation

1.1.1 The global economy

The world economy seems to have overcome its worst recession since the World War II. World trade and industrial production having collapsed during winter 2008/2009, both have started to pick up again more recently (see Figure 1.1). Besides massive fiscal stimulus packages and expansionary monetary policy, this process is supported by a still comparatively low oil price and a turnaround in the worldwide inventory cycle.

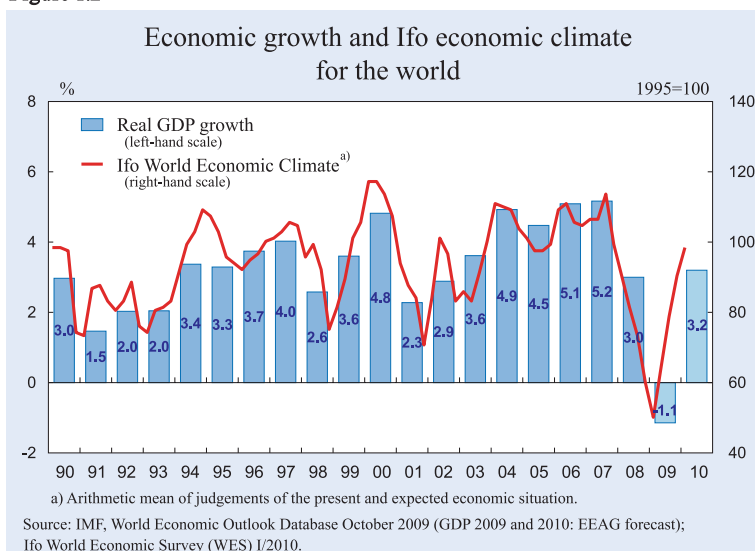
According to the Ifo World Economic Survey, the world economic climate indicator rose in the fourth

Figure 1.1



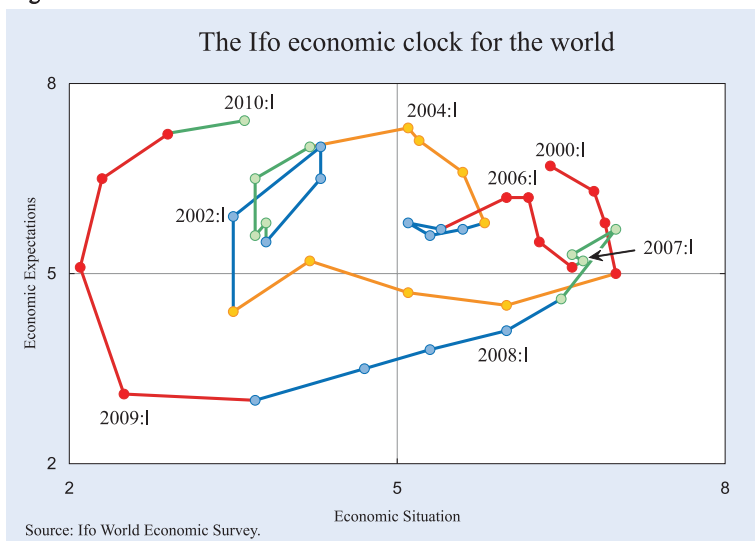
Source: OECD.

Figure 1.2



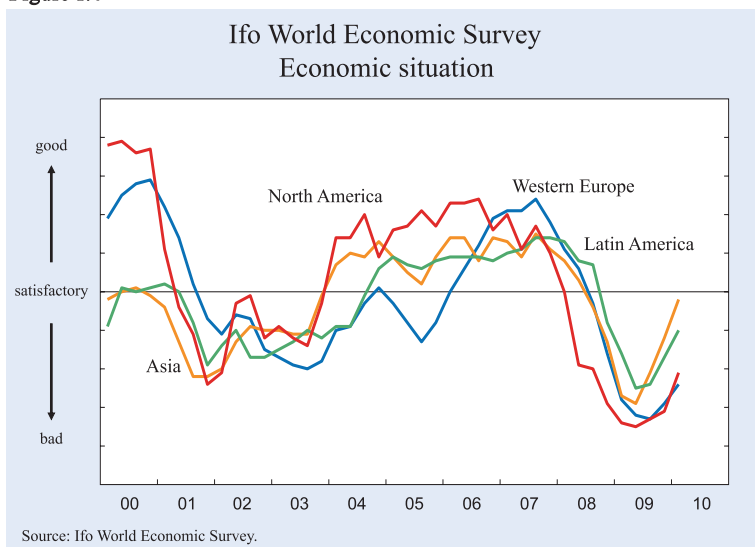
quarter of last year (see Figure 1.2). This was its third consecutive increase. The two underlying components of the Ifo economic climate indicator, i.e. the current assessment and the expectations for the next six months, tend to move in a clockwise manner over the business cycle (see Figure 1.3). As of late, the increase of the overall indicator not only resulted from more favourable expectations for the next six months, but increasingly also from less negative appraisals of the present economic situation. Nevertheless, the current economic situation is still assessed as worse than it was after the attack on the World Trade Center in 2001.

Figure 1.3



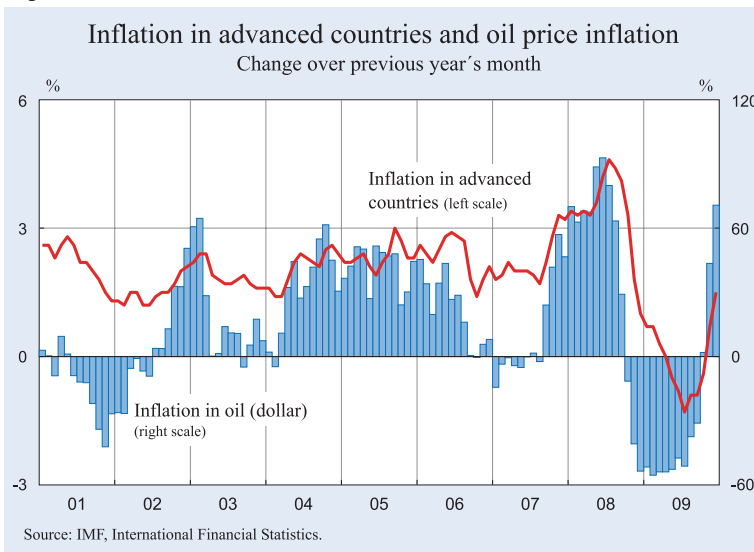
The improvement of the current economic situation took place in all major regions in the world. Especially the assessments in Asia are noteworthy. Not only did that region recover first, but it also has seen the largest improvement in this sentiment indicator since the onset of the crisis. In Western Europe and North America, the assessment of the current economic situation only improved slightly and remained at historically unfavourable levels in the fourth quarter of 2009 (see Figure 1.4).

Figure 1.4



After having fluctuated steadily around 2 percent since the mid-1990s, inflation in the advanced countries strongly picked up to well above 4 percent in summer 2008 before subsequently dropping to -1.3 percent in July last year. Besides the economic upswing up until mid-2008 and the economic crisis afterwards, mainly oil and other raw material price have caused these strong fluctuations in inflation rates (see Figure 1.5). Whereas the oil price

Figure 1.5



peaked at around 130 US dollars per barrel in summer 2008, it fell to about 40 US dollars in winter 2008/2009. This winter it is fluctuating around 75 US dollars again.

1.1.2 United States

In the US the deepest recession since the World War II has come to an end in the third quarter of 2009. With an annualised increase in GDP of 2.2 percent in the third and even 5.7 percent in the fourth quarter the overall economic dynamism was as high as last seen two years ago. Nevertheless, due to the sharp decline during the winter of 2008/2009, GDP in 2009 ended up 2.4 percent lower than in 2008 (see Table A.1).

In particular, a strong increase in private consumption was responsible for the positive development in the third quarter of last year. Private consumption expanded by 2.8 percent. Its contribution to overall growth was 2 percentage points – the biggest among all demand side components (see Figure 1.6). The increase in private consumption was largely driven by the sharp rise in public transfer payments as part of the government stimulus packages. In particular, the “Cash for Clunkers” program, which ran in summer, temporarily led to a substantial increase in car sales and thereby can explain around half of the GDP increase

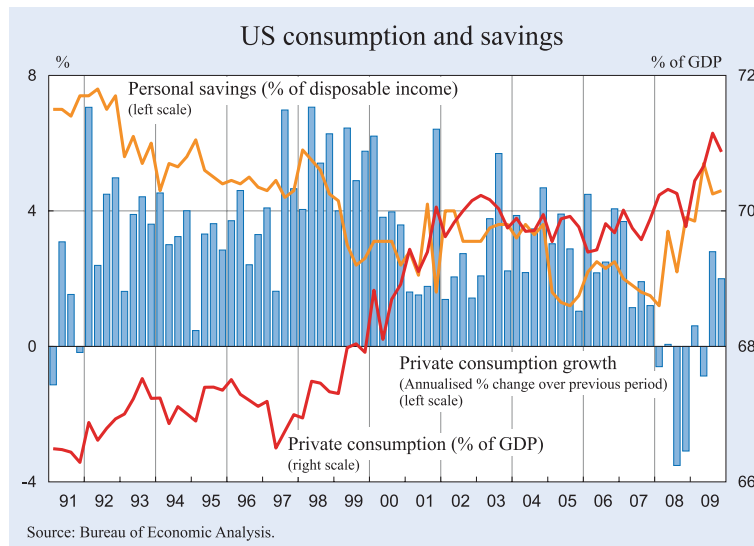
in the third quarter. With the program running out at the end of August, car sales broke down again. The uplift in private consumption in the third quarter can only partly compensate for its loss throughout the year; private consumption overall fell by – 0.6 percent in 2009.

The private saving rate has been steadily increasing from 1.2 percent of disposable income in the first quarter of 2008 to up to 5.4 percent in the second quarter of 2009, before it subsequently fell somewhat to 4.5 percent in the third quarter.

This pattern is also apparent in the falling credits granted to households, in particular in the area of credit cards. Despite these developments, the share of consumption in GDP rose substantially in 2009. Whereas the consumption share hovered around 62 percent in the 1960s and 1970s, moved up to 67 percent in the 1990s, and increased to about 70 percent in the 2000s, it has even surpassed 71 percent in the third quarter of 2009 and thereby reached its highest level at least since World War II (see Figure 1.6).

The strongest negative growth contribution last year came from investment (see Figure 1.7). Gross fixed capital formation plummeted by around 18 percent; when including the sharp drop in inventories, the

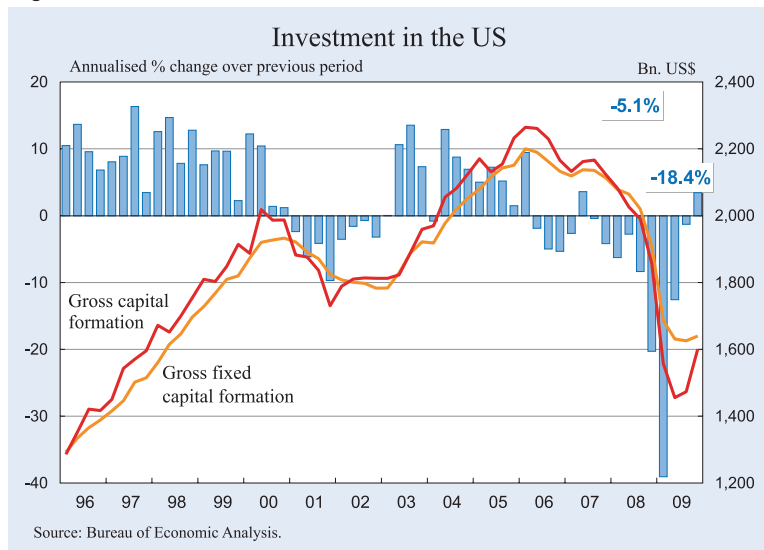
Figure 1.6



resulting gross capital formation even fell by close to 24 percent. Quite different from 2008, this decline in investment was more or less similar across its different components. Whereas in 2007 and in 2008 only residential investment put a burden on total investment, investment in non-residential structures and equipment and software took a similar blow last year as did residential investment. The turn in the inventory cycle allowed total investment growth to turn positive again in particular during the fourth quarter of last year. Investment in equipment and software, which accounts for more than half of total investments, no longer shrunk, but still remained weak. In particular, the extremely low capacity utilisation rate in industry is responsible for this. Although capacity utilisation reached its trough in June last year with 68.3 percent, it remains, with 71.3 percent in November, at a historically low level (its long-run average equals 81.1 percent). For basically the same reason, non-residential construction investment is still reporting substantial negative growth (an annualised – 15.4 percent in the fourth quarter). The only component of gross fixed capital formation that appears to have bounced back is residential investment. After 14 quarters of strong negative growth, it contributed for the first time positively to US growth again and rose with an annualised 18.9 percent in the third quarter.

The domestic problems led to a sharp fall in the demand for foreign goods and services over the year. The fall in exports on the other hand was clearly less pronounced. Consequently, the US trade balance was able to improve substantially last year; its contribution to GDP growth was approximately one percentage point. In that sense, the US economy was able to partly export its domestic crisis to the rest of the world and in that way contributed towards reducing global imbalances. As com-

Figure 1.7



pared to the pre-crisis period (2007QI–2008QI), it was able to improve its trade balance by around 2.5 percentage points (see Figure 1.8). On the absorbing end of this shock stood, amongst others, Japan and the euro area. Looking at exports and imports individually, after having fallen for respectively 4 and 7 quarters in a row, both made a sharp turnaround in the third quarter of last year.

Due to the economic crisis, the unemployment rate in the US has doubled from 5 percent in spring 2008 up to 10 percent in autumn last year, the highest rate since 1983 (see Figure 1.9). The business cycle recovery so far has hardly led to a relief on the labour market. The number of employees continued to decrease up until the end of last year, albeit at a slower pace.

Figure 1.8

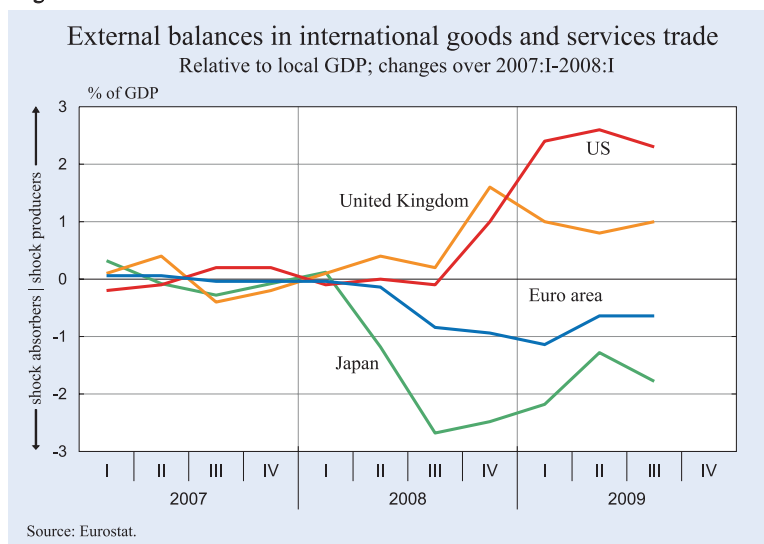
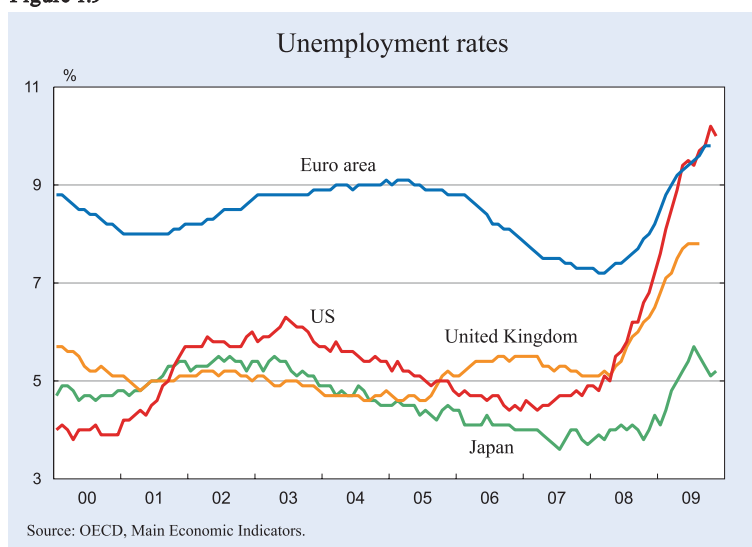


Figure 1.9



After eight months of negative inflation, the price level started to increase again in November relative to the year before. The inflation development was determined above all by the recovery of energy and raw material prices. Nevertheless, the increase in the core index for personal consumption expenditure – which is the preferred inflation measure of the Federal Reserve – remained in October last year, with 1.4 percent, at a low level.

After approximately three years, real-estate prices stopped falling in mid-2009. Since its peak in spring 2006, house prices fell by more than 30 percent. Since summer last year, some moderate price increases have been observed. To a large extent, this development can be traced back to the massive subsidies and tax reliefs of the US government. During the fiscal year 2009, the fiscal support to the real-estate market, for instance the First-Time Home Buyer Credit, added up to about 300 billion US dollars. Only when state support runs out, however, will it be possible to judge whether the recovery on the real-estate market will remain sustainable. A continuation of the drop in real-estate prices would lead to additional write-offs on mortgage-backed securities and again endanger the stability of the banking system.

Since early summer, the interbank market increasingly shows signs of relaxation. The risk premia banks have to pay to get unsecured money, as measured by the difference between the 3-month LIBOR Euro-dollar rate and the Federal Reserve's Fed Fund rate, at the end of last year reached a pre-crisis level of 10 basis points again. Consequently, the Federal Reserve has started drawing back its liquidity support

continuously. Nevertheless, as a result of increasing its massive intervention programs to lower long-term lending rates, in particular for mortgages, its balance sheet is still expanding further. Furthermore, whereas the Federal Reserve in October of last year stopped purchasing US government bonds, it still continues to buy bonds of state-owned mortgage suppliers and mortgage-backed securities during the first quarter of this year.

Supported by the extensive measures of the Federal Reserve, mortgage interest rates have

clearly fallen since the end of 2008. Accordingly, since the second quarter of 2009, banks have started to register an increase in the number of mortgage loan applications. Nevertheless, on account of the high unemployment rate and the rising loan failure rates, banks remain reluctant to grant these requests. In spite of improved conditions on the interbank market, the climax in loan failures has not yet been reached. This will put further strains on the capital base of the banking system.

The US government budget registered a record deficit in 2009. At the end of the fiscal year in September the budget deficit amounted to 1.4 trillion US dollars or 9.9 percent of GDP (as compared to 3.2 percent in fiscal 2008) and thereby reached its highest level since 1945. The increase is just as much due to a decline in revenues as to an increase in expenses. On the expenditure side, especially spending to rescue banks (TARP) and the financial support for the state-owned mortgage suppliers stand out. The stimulus package (ARRA), which was decided in February last year, is a burden to both the expenditure as well as the revenue side.

1.1.3 Japan, China, India and other Asian countries

After having been hit the hardest amongst the large economies in the world during winter 2008/2009, the economic recovery in Japan set in already in the second quarter of last year. Nevertheless, with modest annualised growth rates of 2.7 and 1.3 percent in the second and third quarters, respectively, only part of the more than 10 percent annualised drop during the winter could be made up for. The most important dri-

vers for the mild recovery were foreign trade and private consumption. Favoured by the strong increase of exports, the growth contribution of net exports to GDP growth mounted to 6.1 percentage points in the second quarter and to 3.0 percentage points in the third quarter. Private consumption increased by an annualised 4.8 and 3.8 percent in respectively the second and third quarter. On the other hand, investments continued to fall at double-digit rates throughout the year.

The favourable developments since the second quarter of last year have likely continued throughout the rest of last year. Although no quarterly national accounts statistics for the fourth quarter of last year are available at the time of writing, other economic data point in this direction. Here especially the results of the Tankan business tendency survey, according to which the business and profit situation of Japanese manufacturers have further improved, are to be mentioned. However, also at current levels, the indicators are still at historically low levels. This matches the positive developments in industrial production, which has meanwhile risen seven months in a row, but remains well below its long-run average. The recovery is not only felt by industry, but is also reflected by indexes on developments in the service sector and in the economy as a whole, which have improved strongly. In addition, consumer sentiment surveys send out similar signals. Nevertheless, to a large extent, these positive developments are based upon government stimulus measures to promote in particular purchases of durable consumption goods. Hence, Japan is likely to show a further increase in GDP in the fourth quarter of 2009. This can, however, not prevent the annual growth rate for 2009 from falling to – 5.3 percent.

The unemployment rate at the beginning of last year still was still at about 4 percent, but it subsequently rose sharply into the summer, reaching a peak of 5.7 percent in July due to the economic crisis. Ever since, it has shown signs of a gradual decline again reaching 5.1 percent in October last year. However, according to survey results, firms are still planning to cut back employment. Furthermore, part of this positive development is caused by an increase in government subsidised employment. The unemployment rate is likely to be much higher without these measures.

As the uncollateralised overnight call rate in Japan hover around 0.1 percent since the end of 2008, leav-

ing hardly any room for manoeuvre, the Japanese central bank has introduced a number of additional measures to stabilise the financial markets and to improve the supply of credit to the economy. These include buying up government and firm bonds as well as stocks.

To counteract the economic crisis, the Japanese government has introduced several economic stimulus packages with a total volume of approximately 5 percent of GDP. The associated additional spending together with the cyclical reduction in revenues has caused the budget deficit to increase to 8 percent of GDP in 2009.

Over the summer *China* was able to return to nearly pre-crisis growth levels. GDP grew by an annualised 7.9 and 8.9 percent in the second and third quarter of last year, respectively. A comparison of the first three quarters with those of 2008 reveals an impressive growth rate of 7.7 percent. Therefore, it appears likely that the self-assigned goal to achieve an annual growth rate of about 8 percent in 2009 will nearly be reached. We assume that it will amount to 7.8 percent in 2009. To a large extent this performance is caused by a strong increase in investment activity initiated by huge fiscal and monetary stimulus programs of the government. Besides stimulating private consumption, the government stimulus programs above all concentrated on investments in public infrastructure, with a special focus on transport infrastructure, the health sector and the underdeveloped western part of the country.

The quick stimulus measures that fuelled imports of commodities together with a hesitant stabilisation of the world economy caused the trade surplus of China to shrink during the first part of last year. During the second half of last year also the revival of exports, due to improved economic conditions around the world as well as the weakness of the renminbi against most currencies as a result of the weakness of the dollar, the trade surplus has recovered and contributed positively to economic growth. Although the Chinese authorities allowed for a steady nominal appreciation of the renminbi between July 2005 and July 2008, it has since returned to close to a fixed exchange rate vis-à-vis the US dollar.

After the favourable developments in the second and third quarter of 2009, the outlook for the fourth quarter also remains positive. As compared to the year before, industrial production increased by 16.1 per-

cent in October which once again was substantially stronger than in September in which its growth rate amounted to 13.9 percent. In addition, the positive outlook is underpinned by different survey results on the business situation in manufacturing. Furthermore, retail trade also managed to report increasing growth rates during the second half of last year. This was partly due to government support, i.e. increased subsidies on consumer goods. The positive picture is completed by exports statistics, which show that total exports in October lay only just 13.8 percent below its level a year before and thereby recovered clearly from its nadir reached in summer last year.

India experienced a strong increase of economic activity in the second and third quarter of last year. After during winter 2008/2009 GDP only expanded by about 4.4 percent as compared to the year before, year-over-year growth was able to increase to 6.0 and 6.7 percent in respectively the second and third quarter of last year. Early indicators suggest that especially in the last quarter of 2009 production will expand strongly. Overall the annual GDP growth rate for 2009 is expected to be 6.1 percent.

While the important agricultural sector for the Indian economy could – on account of the late start of the monsoon rains – not contribute as much as expected to the economic recovery, this was more than compensated for by the developments in the manufacturing and above all the services sector. Industrial production increased by 8.3 percent in the third quarter as compared to the year before; the services sector even showed an increase of 9.3 percent. These economic developments have likely continued during the last months of last year. Business sentiment indicators for the aggregate economy and the manufacturing sector show an unbroken upward trend. Also the clear increase of retail- and wholesale prices confirm a continuation of these dynamics.

The relatively stable economic development of India explains itself, on the one hand, by the fact that its economy is less open than many other emerging economies. On the other hand, services play an important role for Indian exports. Trade in services show less of a cyclical pattern than those in industrial goods.

The other East Asian countries of *Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan* and *Thailand* benefited from the favourable business cycle developments in China. In spring 2009 these

economies started a swift recovery. Before, this region was also struck by the global recession. As most of these economies are export-oriented, they were especially hard hit by the massive reduction in world trade.

A comparison of the economic developments in these countries shows the close link between the recession and the fall in world trade. Those countries which are hit the hardest, i.e. Taiwan and the two trade centres, Hong Kong and Singapore, are also the most open economies in this region. The recessions in some of the bigger countries, most notably Indonesia, were somewhat milder.²

However, the fall-out in industrial production and foreign trade only lasted for a short time. Production reached its trough already at the beginning of last year and thereby earlier than elsewhere in the world. Since then, economic activity regained pre-crisis levels in many countries, with the strong momentum of the high-tech industries and terminating inventory adjustments as the key drivers. The strong recovery was also supported by expansionary monetary and fiscal policy as implemented worldwide. The fact that economic policy in Asia was more effective, quicker and stronger than elsewhere can, on the one hand, be explained by a banking system that was largely spared from the financial crisis that hit the US and Europe. On the other hand, the substantial current account surpluses built up in the past lessened the impact of reduced capital flows as compared to other emerging countries.

1.1.4 The rest of the world

After the economic crisis during the winter of 2008/2009, the Latin America countries of *Argentina, Brazil, Chile, Colombia, Mexico* and *Venezuela* managed to stabilise their economies relatively early. They benefited from the recovery in raw material prices that started in the beginning of 2009. The region managed to get over the financial crisis better than other regions. After a dramatic increase in risk premia on most government bonds during the winter, they have quickly fallen again. Presently they are moving again around levels that prevailed before the start of the crisis. More or less the same holds for the exchange rates of most currencies: they depreciated sharply during the winter. However, since then they have basically recovered again. Latin America managed to escape a

² A similar pattern is discussed in Chapter 5.

more severe impact of the worldwide trust crisis by not having high current account deficits and therefore by not being very dependent upon large net capital inflows. On top of that, the financial sectors in these countries are less connected to those centres that were at the core of the financial crisis. Furthermore, by historical standards the macroeconomic fundamentals appear in general quite healthy and the public finances in order.

Nevertheless, the individual countries developed quite heterogeneously. Mexico is having difficulties overcoming a recession that has lasted for more than a year. Its economy is heavily dependent upon developments in the US. In particular, industry in the northern part of the country is closely intertwined with the US market. Furthermore, the decline of transfer payments of migrants has led to income losses in Mexico. Also the impact of swine flu, the fall in oil revenues and the hard-hit car industry should not be ignored. The position of Brazil, the second largest economy in the region, is more favourable. The export sector is more diversified on a regional level; China has become the most important trading partner even before the US. Furthermore, international trade plays a less important role in Brazil as compared to Mexico. Although Brazil was also hit by a sharp recession in the winter of 2008/2009, it has already been on an expansion course again since spring last year based on its robust domestic demand. All together, GDP in 2009 is expected to turn out 2.2 percent lower than in 2008 in Latin America as a whole.

The global economic and financial crisis hit *Russia* full force. The global drop in the demand for raw materials and the associated fall in raw material prices led to a massive decline in export revenues. In addition, domestic factors, including problems in the financial industry and the bursting of a speculative bubble in the real-estate market, contributed to a sharp fall in investments.

Rising unemployment and falling real incomes dampened private consumption. Although the Russian economy started to stabilise by the summer of last year, a clear recovery as in other emerging markets does not appear to have set in. Industrial production has freed itself from its low in May last year, but has not regained pre-crisis growth levels. Also growth in retail trade has been low throughout 2009. Real gross domestic product shrank by 8.0 percent in 2009 compared to 2008.

Nevertheless, the economic environment has visibly improved. With the recovery of raw material prices, the withdrawal of foreign capital decreased, and the rouble, which had lost up to 40 percent of its value to the US dollar, appreciated clearly again. Against this background and in view of falling inflation rates, the central bank has loosened its monetary policy stance gradually since the beginning of last year. However, firm credit rates are still high and the supply of credit by the banks remains restrictive. The government has counteracted by granting interest subsidies and state guarantees. However, the approval process of authorities runs slowly, and the beneficiaries are primarily big enterprises in strategically important sectors.

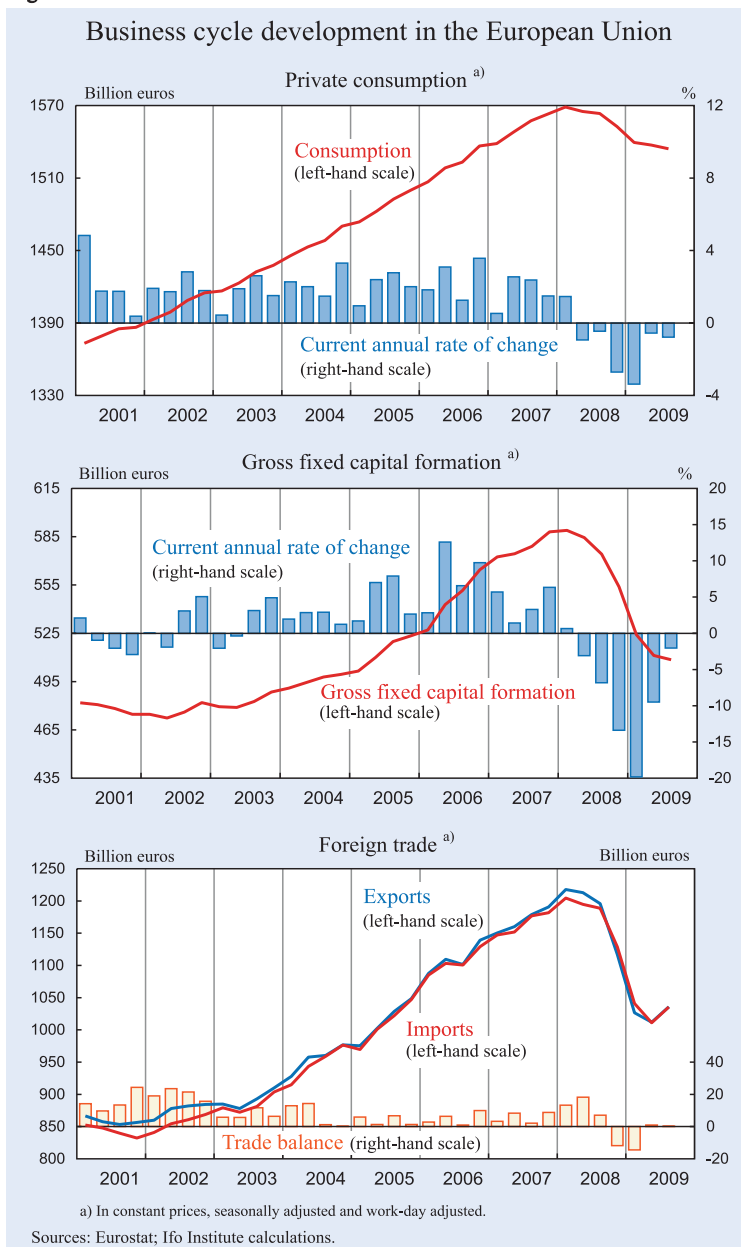
1.1.5 The European economy

After a drop of 5.1 percent from its peak in the first quarter of 2008, GDP in the European Union started to recover during the second half of 2009. Real economic growth reached an annualised 1.0 percent in the third quarter as compared to the second quarter of last year. Nevertheless, private consumption continued to fall and also overall gross fixed capital formation remained on the decline, albeit at a slower pace (see Figure 1.10). Hence, besides government consumption, foreign trade and changes in inventories were able to contribute positively to economic growth (see Figure 1.11).

Due to the unwinding real estate prices, for instance in Ireland, Spain and the United Kingdom, residential investment has been falling sharply since the second quarter of 2008 and has now reached levels last seen in 2002. After a substantial drop in 2008, other construction investments, however, roughly stabilised last year. Since the third quarter, investment in machinery and transport equipment also seems to have stopped falling further and is showing first signs of recovery. Especially, transport equipment has benefited substantially from several stimulus programs of governments throughout Europe.

Both exports and imports plummeted during the winter of 2008/2009. Since the third quarter of last year, both started to pick up again. The trade balance worsened over the course of the year as the fall in exports surpassed those in imports. Hence, net trade contributed negatively to GDP growth. If one views the net demand shock around the world in terms of changes in the trade balance, then it becomes apparent which countries have had a “shock-producing” effect on the rest of the world. Within the euro area,

Figure 1.10



these include above all Spain, Malta and Ireland. By contrast, in Finland, Germany, Belgium and the Netherlands imports have fallen less sharply than exports (see Figure 1.12). This group of countries helped alleviate or absorb the shock within the euro area. This was possible inter alia because these countries did not have to correct a real-estate bubble. With the exception of Slovenia, all East European member countries of the European Union have seen clear improvements in their external balances during the crisis. Especially those countries which kept the exchange rate vis-à-vis the euro stable, i.e. Bulgaria, Estonia, Latvia and Lithuania were also those that experienced the strongest improvement in their external balance. To do this, however, they had to stick to a relatively restrictive monetary policy stance thereby suppressing their domestic economies. As discussed in Chapter 5, this is especially true for Latvia which, on the verge of a balance of payments crisis, has no alternative other than abandoning its peg.

Mainly as a consequence of the drop in oil prices, inflation rates in the European Union fell until summer last year (see Figure 1.13). In the euro area even the price level – as measured by the harmonised index of consumer prices (HICP) – fell slightly between June and October. Although in the last months of the year, inflation picked up again somewhat, core inflation has not yet stopped falling. In November the latter remained at 1.0 percent.

With the sole exception of Poland, all countries went through a deep recession last year, and the

Figure 1.11

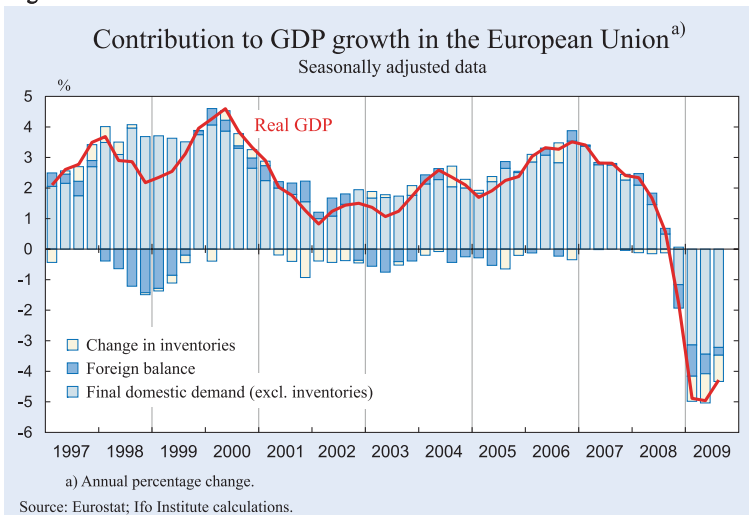


Figure 1.12

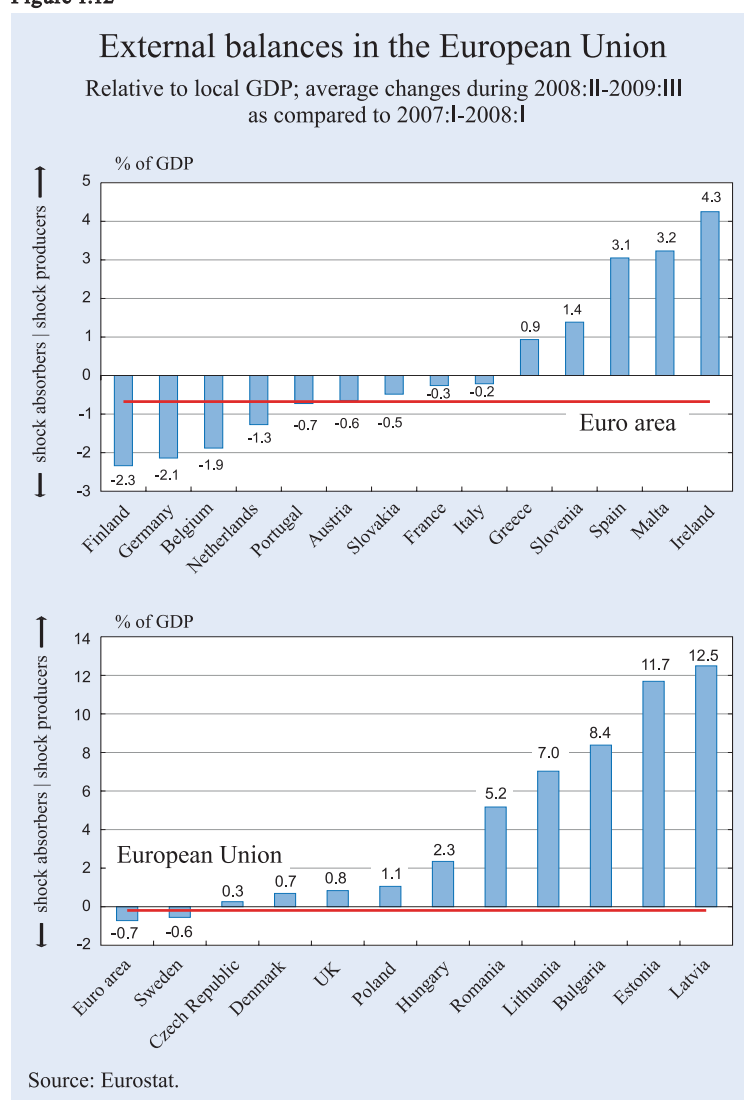
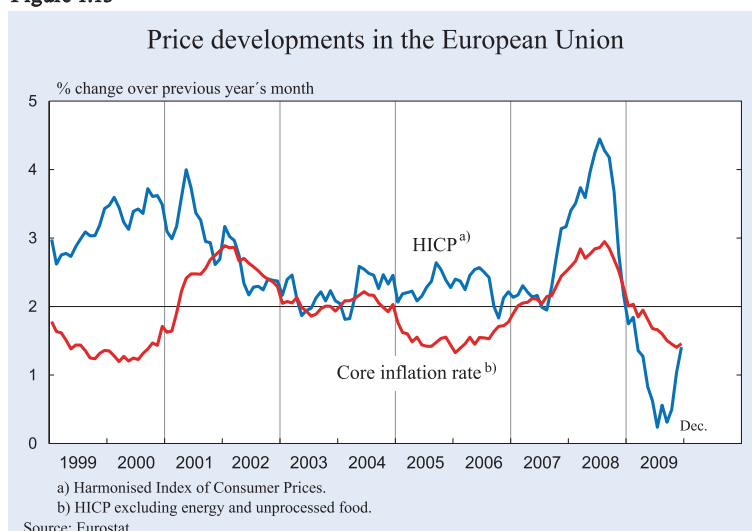


Figure 1.13



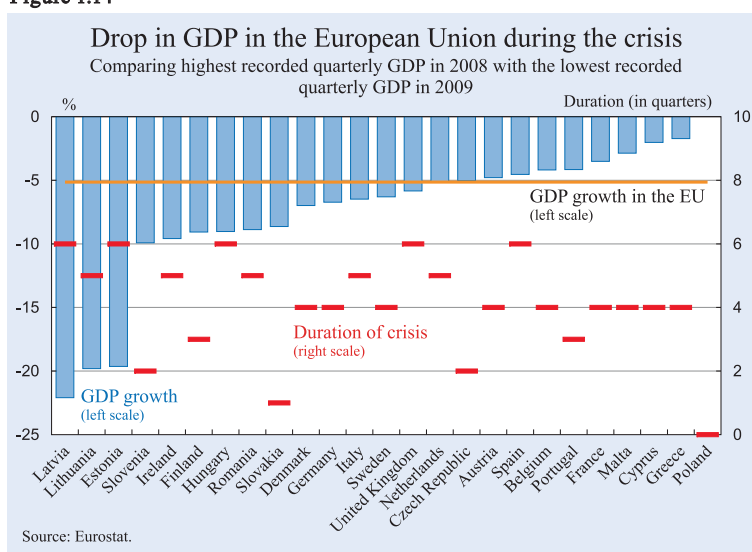
regional differences within the European Union were substantial (see Figure 1.14). A comparison of the peak in the first quarter of 2008 with the trough in the

second quarter of 2009 reveals that the European Union – and with it the euro area – contracted by 5.1 percent over a period of five quarters. Especially the three Baltic States – Estonia, Latvia and Lithuania – were hit hard by the economic crisis and saw their GDP dropping by approximately 20 percent. Whereas Lithuania came out of recession in the third quarter of last year, the situation has not yet improved markedly in the other two Baltic States. These economies have already been shrinking for six quarters in a row. The only other central and eastern European member country having such a prolonged recession phase is Hungary.

Of the western and southern European member countries, only Cyprus, Greece, Spain and the United Kingdom were still in recession in the third quarter of last year. All other countries returned to positive growth. For instance, in Austria, Belgium, Germany, Italy and Portugal the turnaround was relatively strong (with annualised quarterly growth rates above 2 percent), whereas Finland, France, Ireland, Malta and the Netherlands were nevertheless able to report annualised growth rates between 1.0 and 1.7 percent.

In *Germany*, the economy stabilised in spring last year. In the second quarter, real GDP expanded by an annualised 1.8 percent, in the third quarter this was even 2.9 percent. On account of the drop during the preceding winter semester of nearly 6 percent, overall economic activity – and in particular that in the export-oriented industries – remained, however, all in all, at a low level. Capacity utilisation in manufacturing is still approximately 10 percentage points below its long-run average.

Figure 1.14



Decisive for the German economic recovery was first of all the improved state of the world economy. German exports, which were especially hard hit by the worldwide drop in confidence and international trade due to Germany's specialisation towards investment goods and durable consumption goods, were able to grow in the second half of 2009. In many of Germany's trading partner countries, expansionary fiscal and monetary policies became effective and inventories were built up again. Secondly, domestic investment – stimulated by fiscal packages directed towards public construction – started to recover. Furthermore, inventory developments gave a strong positive impulse to growth as well. However, private consumption, which was boosted by numerous expansionary stimulus measures during the first half of 2009, declined sharply. As the government subsidies for scrapping older cars stopped, especially car sales dropped. The overall increase in domestic demand was associated with a decline in the external balance. Although exports strongly increased, imports went up even more during the second half of 2009 as a consequence of the inventory impulse. As compared to the first half of last year, GDP managed to increase at a rate of 1.2 percent during the second half. However, and as a consequence of the strong decline during the winter of 2008/2009, GDP still fell by 5.0 percent in 2009 as compared to 2008.

Although the economic crisis has become apparent in the labour market as well, its consequences have, however, remained remarkably moderate. Job losses were above all registered in the manufacturing sector. Important for the moderate decline in employment were the strong expansion of short-time work

and the depletion of credits on working hour accounts. In addition, while full-time employment has sunk, part-time employment has increased. In the course of 2009, the average number of working hours sank by 2.2 percent after already having been reduced by a similar order of magnitude in 2008. At the same time – due to a fall in labour productivity – unit labour costs rose sharply (see Table 1.1). The unemployment rate increased somewhat during the first half of 2009. Since July, it seems to have stabilised at 7.6 percent, leading to an average unemployment rate of 7.5 percent in 2009.

Whereas most European economies left the recession behind them in the third quarter of last year, quarterly GDP growth in the *United Kingdom* was still negative. Nevertheless, also here the signs are improving. During the second half of 2009, private consumption and gross fixed capital formation stopped falling and exports started to pick up. Private consumption, which during the first half of last year sank by an annualised 4.8 percent was able to stabilise basically thanks to the UK version of the “Cash for Clunkers” program. However, the increased car purchases led to a quicker increase of imports as compared to exports, which in turn prevented GDP from growing during the second half of last year. Government spending continued to contribute positively to economic growth, albeit at a slower pace.

The economy of *France* expanded with restraint during the second half of last year. GDP rose by an annualised 1.1 percent in the third quarter, after having increased by the same amount the quarter before. Private consumption stagnated and investments kept falling at a higher pace. Although the decline in non-residential investment started to slow down, residential investment continued its descent in an unbroken manner. However, the external balance improved somewhat as exports grew more than imports. In addition, the increase in GDP during the second half of last year was promoted by a further increase in government spending.

During the second half of last year, the *Italian* economy revived unexpectedly strongly. GDP rose in the

Table 1.1

Labour costs

	Compensation per employee ^{a)}		Real compensation costs ^{b)}		Labour productivity ^{c)}		Unit labour costs ^{d)}		Relative unit labour costs ^{(d)(e)}		Export performance ^{f)}	
	2006-08	2009	2006-08	2009	2006-08	2009	2006-08	2009	2006-08	2009	2006-08	2009
Germany	1.5	-1.1	0.2	-2.1	1.1	-4.8	0.4	4.3	-3.1	1.4	1.4	-0.5
France	3.0	1.2	0.5	0.2	0.7	-1.2	2.2	2.5	1.3	-1.8	-3.8	1.8
Italy	2.2	-0.5	-0.1	-2.9	-0.3	-4.0	3.2	5.2	2.9	10.1	-4.7	-7.7
Spain	3.8	3.1	0.5	2.8	0.7	2.9	4.0	1.4	3.4	0.6	-1.7	-1.5
Netherlands	3.1	2.5	1.1	2.8	1.0	-3.4	2.0	6.3	1.0	3.0	-0.5	4.0
Belgium	3.5	0.0	1.4	-1.3	0.6	-2.6	3.0	3.0	1.4	1.5	-2.3	-0.9
Austria	3.1	2.6	1.1	1.9	1.2	-3.8	2.1	5.9	-1.0	1.8	-1.6	-0.3
Greece	4.1	5.1	0.9	3.3	2.2	0.1	3.1	4.9	2.4	0.3	-2.7	-2.4
Finland	3.7	2.5	1.5	1.5	1.4	-4.4	2.4	6.7	-3.2	7.3	0.3	-12.0
Ireland	3.9	-2.7	2.7	1.2	0.4	0.1	3.6	-2.9	0.1	-5.1	-0.3	11.9
Portugal	2.9	3.5	0.2	2.9	0.6	-0.4	2.5	3.7	-0.6	-1.2	-0.3	-1.5
Slovak Republic	8.8	3.4	6.5	4.0	5.9	-3.6	2.1	4.6	7.8	5.9	4.1	-6.0
Luxembourg	3.0	0.2	-1.9	1.5	-0.2	-4.4	3.5	5.6	6.0	12.7	2.5	1.3
Euro area	2.4	0.8	0.2	-0.2	0.6	-2.4	2.1	3.8	0.7	4.4	na	na
United Kingdom	3.5	0.5	0.6	-0.7	1.2	-2.6	2.3	3.9	-1.8	-9.5	-2.9	1.8
Sweden	2.6	1.2	0.0	-1.0	0.7	-2.4	2.4	4.1	0.1	-0.8	-1.1	0.6
Denmark	3.9	4.4	1.2	4.9	-0.6	-1.7	4.5	5.5	3.6	1.5	-1.8	4.2
Poland	4.2	5.2	1.3	1.8	2.1	1.1	4.1	4.1	0.8	-18.3	2.0	5.8
Czech Republic	6.7	1.5	4.7	-1.6	3.2	-2.7	3.0	3.8	4.5	-2.1	4.5	0.4
Hungary	5.8	5.9	1.2	3.5	2.2	-2.6	4.5	6.3	1.0	-5.1	5.2	4.6
United States	3.5	-0.8	0.7	-2.1	1.1	1.3	2.6	-1.1	-4.5	9.7	0.6	2.6
Japan	-0.2	-2.7	0.6	-2.7	1.1	-3.6	-0.2	1.3	-5.0	8.5	-0.2	-15.8

^{a)} Compensation per employee in the private sector. – ^{b)} Compensation per employee deflated by GDP Deflator. – ^{c)} Total Economy. – ^{d)} Manufacturing sector. – ^{e)} Competitiveness-weighted relative unit labour costs in dollar terms. – ^{f)} Ratio between export volumes and export markets for total goods and services. A positive number indicates gains in market shares and a negative number indicates a loss in market shares

Source: OECD Economic Outlook 83 and 84 databases.

third quarter by an annualised 2.4 percent after it had shrunk by an annualised 1.9 percent in the second quarter. The development in industrial production confirms that the Italian economy has surpassed its trough. Besides an improvement in the external balance also increases in private and public consumption contributed to this turnaround. Investments, on the other hand, kept on falling throughout the year. In spite of the improved situation after summer, GDP will shrink on account of the very weak first half of the year and the severe drop in private investments by 4.8 percent in 2009.

Nevertheless, Italy continues to face structural factors which reduce its international competitiveness. Labour productivity declined faster as compared to other euro area member countries. Consequently, unit labour costs rose markedly, reducing the competitiveness of many Italian firms even further.

From the second quarter of 2008 onwards, economic activity in *Spain* has been falling – albeit since the first quarter of 2009 at a reduced pace. The positive impulses set by public consumption and the external balance could still not outweigh the reduction in investments. Private consumption stabilised during the second half of the year.

As measured by labour market developments, Spain numbers amongst those European countries in which the economic crisis has been most painful. This is caused in particular by the breakdown of its real-estate market. The bursting of the real-estate bubble induced above all two negative effects on the Spanish economy. On the one hand, households and firms are confronted with a negative wealth effect which dampens their consumption and investment demand and at the same time limits their access to loans. On the other hand, it led to massive lay-offs in the construction sector. Consequently, unemployment increased from 9 percent in early 2008 to close to 20 percent at the end of last year. This rise in unemployment was furthermore aggravated by rigidities in the labour market. Due to the indexation of many wages, the increased inflation in 2008 has led to upward adjustments of nominal wages, outpacing those in many neighbouring countries. However, nominal wages turned out to be too rigid to be substantially lowered during the crisis. To circumvent a substantial gap between real wage and labour productivity growth, firms were forced to reduce employment more than otherwise would have been the case.

The East European member countries of the European Union were hit hard by the world economic crisis. Over the year, real GDP of the new member countries that are not part of the euro area fell by 3.5 percent (see Table A.2). Although a quick recovery is not in sight, stabilisation tendencies can be observed here as well. For instance, industrial production did not sink further – or even increased slightly in some countries – during the third quarter of 2009. With respect to investment the rate of decrease is falling. Firm expectations have improved since the beginning of last year in nearly all of these countries, and also consumer confidence has brightened somewhat despite the rise in unemployment. As imports fell more strongly than exports throughout the region, the current account deficits have been reduced quite clearly. After several years of deficits, the Baltic States even registered a current account surplus in 2009. Inflation has strongly decreased in all countries, but is – with 5.6 percent last year – still relatively high in Romania.

1.2 Fiscal and monetary policy in Europe

1.2.1 Fiscal policy

The economic crisis induced governments all over the world to pursue expansionary fiscal policies. While government expenditures rose as a result of the massive economic stimulus packages, government revenues fell on account of the sharp recession, the tax breaks as well as the reduction in employment. Consequently, the public finance situation in the member countries of the European Union has deteriorated sharply. The deficit to GDP ratio has consequently increased from – 2.3 percent in 2008 to – 6.9 percent last year (see Table 1.2).

The current year will be a challenging and decisive year for euro area policy-makers and the euro area economy. Looking back on 2009, solid groundwork was put in place to go forward. The European Economic Recovery Plan (EERP), launched in December 2008, helped cushion the collapse of economic activity. Without the EERP, the contraction of euro area GDP would have been deeper. Designed for a two-year period, it will continue to provide valuable support this year.

Part of the government responses to the crisis are automatic, in the sense that without direct government action revenues fall relative to GDP, e.g. due to the progressive tax system, and expenditures rise, e.g.

Table 1.2

Public finances

	Gross debt ^{a)}				Fiscal balance ^{a)}			
	2001–2006	2007	2008	2009	2001–2006	2007	2008	2009
Germany	64.0	65.0	65.9	73.1	-3.2	0.2	0.0	-3.4
France	62.3	63.8	67.4	76.1	-2.9	-2.7	-3.4	-8.3
Italy	105.8	103.5	105.8	114.6	-3.4	-1.5	-2.7	-5.3
Spain	47.6	36.1	39.7	54.3	0.2	1.9	-4.1	-11.2
Netherlands	50.8	45.5	58.2	59.8	-1.2	0.2	0.7	-4.7
Belgium	97.0	84.2	89.8	97.2	-0.4	-0.2	-1.2	-5.9
Austria	65.0	59.5	62.6	69.1	-1.6	-0.6	-0.4	-4.3
Greece	99.6	95.6	99.2	112.6	-5.1	-3.7	-7.7	-12.7
Ireland	30.1	25.1	44.1	65.8	1.2	0.3	-7.2	-12.5
Finland	42.2	35.2	34.1	41.3	3.5	5.2	4.5	-2.8
Portugal	58.7	63.6	66.3	77.4	-3.9	-2.6	-2.7	-8.0
Slovakia	40.1	29.3	27.7	34.6	-4.4	-1.9	-2.3	-6.3
Slovenia	27.3	23.3	22.5	35.1	-2.4	0.0	-1.8	-6.3
Luxembourg	6.4	6.6	13.5	15.0	1.5	3.7	2.5	-2.2
Cyprus	66.4	58.3	48.4	53.2	-3.5	3.4	0.9	-3.5
Malta	66.3	62.0	63.8	68.5	-5.3	-2.2	-4.7	-4.5
Euro Area	68.9	66.0	69.3	78.2	-2.4	-0.6	-2.0	6.4
United Kingdom	40.0	44.2	52.0	68.6	-2.4	-2.7	-5.0	-12.1
Sweden	51.2	40.5	38.0	42.1	0.9	3.8	2.5	-2.1
Denmark	42.2	26.8	33.5	33.7	2.4	4.5	3.4	-2.0
Poland	44.6	45.0	47.2	51.7	-5.0	-1.9	-3.6	-6.4
Czech Republic	28.9	29.0	30.0	36.5	-4.7	-0.7	-2.1	-6.6
Hungary	58.8	65.9	72.9	79.1	-7.3	-5.0	-3.8	-4.1
Romania	19.8	12.6	13.6	21.8	-1.9	-2.5	-5.5	-7.8
Lithuania	20.4	16.9	15.6	29.9	-1.5	-1.0	-3.2	-9.8
Bulgaria	42.8	18.2	14.1	15.1	1.0	0.1	1.8	-0.8
Latvia	13.4	9.0	19.5	33.2	-1.3	-0.3	-4.1	-9.0
Estonia	5.0	3.8	4.6	7.4	1.2	2.6	-2.7	-3.0
EU27	61.5	58.7	61.5	73.0	-2.3	-0.8	-2.3	6.9

^{a)} As a percentage of gross domestic product; definitions according to the Maastricht Treaty.

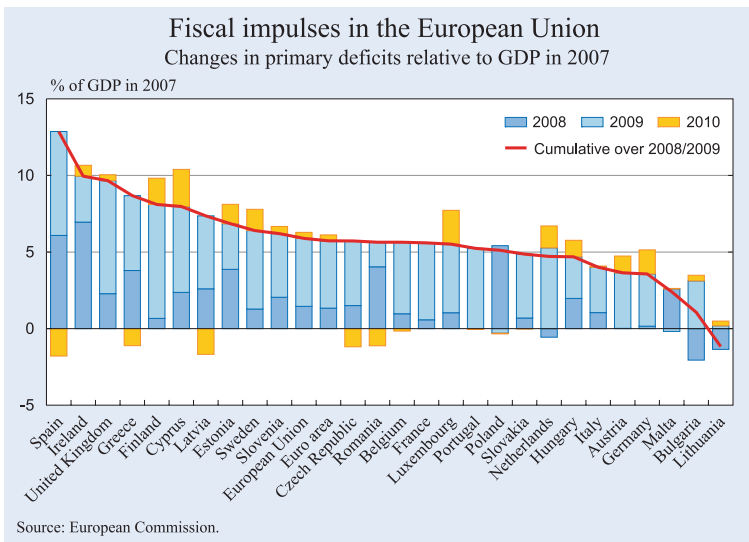
due to increased unemployment and welfare benefits. The severity of the economic crisis and especially the near meltdown of the financial system in autumn 2008 created a situation in which most governments agreed that it would not be sufficient to rely solely on these so-called automatic stabilisers. However, as the output smoothing capacity of automatic stabilisers varies substantially across countries (see Girouard and André, 2005) – many measures came in the form of guarantees and the actual size of many individual programs are hard to determine – it is quite challenging to come up with comparable estimates of the fiscal impulses given by the public sector during the crisis across countries. A relatively straightforward summary measure, however, is the change in the primary deficit of the general government throughout the crisis. It includes both discretionary measures taken by the general government as well as the automatic stabilisers. Furthermore, as it is generally believed that changes in interest payments by the government do not have a strong impact on the economy and are not intended as such, the primary balance – which ex-

cludes these – is likely to be a better measure than the change in the fiscal balance per se.

Compared to their share of pre-crisis GDP (i.e. in 2007), the primary deficit in both the euro area and the European Union increased by 4.4 percentage points in 2009, after already having increased by, respectively, 1.3 and 1.5 percentage points in 2008 (see Figure 1.15). The differences across countries and the two crisis years are substantial. Whereas the governments in Spain and Ireland already stimulated their economies in 2008, those in Finland and the United Kingdom became more active in 2009. In Italy and Germany government actions were – relative to the rest of Europe – more conservative.

Structural deficits – that part of the deficit which cannot be attributed to automatic stabilisers, i.e. the business cycle – also increased substantially around the world. This indicates that to a considerable extent the increase in deficits was induced by discretionary policy. Compared to the US and Japan, its increase in the

Figure 1.15



euro area was slightly less dramatic last year. Also for 2010, the increase in the structural deficit in the euro area is expected to be less than in the US and Japan (see Figure 1.16).

The public finance situation will worsen in the years to come. Last year, only Finland and Luxembourg, as members of the European Monetary Union (EMU), managed to keep their deficits below 3 percent of GDP. However, it is to be expected that all EMU member countries will breach this deficit criteria this year. As a consequence the European Commission has opened new deficit procedures against many countries, including Austria, Germany and Italy, while deficit procedures are already running against France, Greece, Ireland, Malta and Spain. Its purpose is to start reducing budget deficits

from 2011 onwards and to suppress it below 3 percent of GDP by 2013. Given the weakness of the European economy, it is to be expected that the deficit-to-GDP ratio will reach 7 percent this year (see Table A.3).

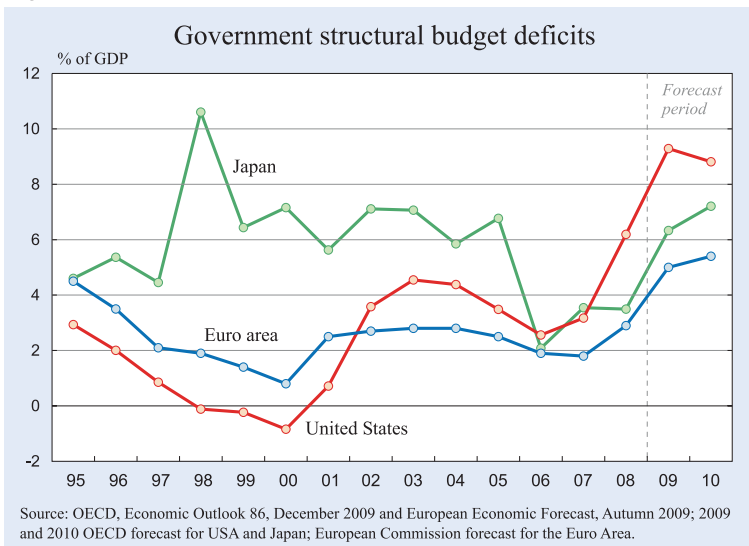
The increased indebtedness of European governments together with slowly rising interest rates will raise the debt burden. Government interest expenses are bound to rise in the years to come and crowd out other types of government spending. This is already a good reason for governments to prepare and communicate

exit and consolidation strategies to return to sound and sustainable public finances again. More importantly, such strategies are needed to strengthen overall macroeconomic stability and to guarantee that any future crisis can again be relieved by appropriate fiscal policy measures.

After several years of consolidation, public finances in *Germany* ran into difficulties in 2009. Whereas the fiscal balance had improved from an average of - 3.2 percent during 2001-2006 to + 0.2 percent in 2007, it is calculated to be - 3.4 percent last year. Mainly due to lower tax receipts, government revenues sank by 2.0 percent in 2009. In addition to the economic crisis, the reduction in tax receipts was also partly caused by the tax revision for firms in 2008. Government expenditures increased by 4.8 percent in

2009. The reasons for this substantial increase are manifold. First, the deterioration of the labour market has led to higher expenditures on unemployment benefits and short-time work. Second, due to new arrangements with hospital and general practitioners, health expenses went up. Third, personnel expenses of the state expanded after substantial wage hikes. Fourth, transfer payments increased substantially, also due to the old-car scrappage program, which has cost the German government approximately 5 billion euros. Finally, triggered by the

Figure 1.16



economic stimulus packages, public investment increased by 7.5 percent.

The financial situation of the German government is expected to deteriorate further also this year – albeit at a lesser pace. The burden falls on both the income side – as a result of an income tax reform and cyclical reductions in tax revenues – as well as the expenditure side – caused by increased transfers and public investments.

Fiscal policy will start to have a dampening effect on economic development in the *United Kingdom*. The immense increase of the deficit-to-GDP ratio to 12.1 percent last year will force the government to curtail expenditures and raise taxes. Already at the start of this year the temporary reduction of the value added tax from 17.5 percent to 15 percent has ended. This will restrain private consumption at least temporarily.

The public finance situation in *France* has worsened noticeably not only as a result of the massive economic stimulus measures but also on account of the cyclically reduced tax revenues and social security contributions. Furthermore, the cost to support banks has taken its toll. The public deficit rose to 8.3 percent of GDP last year. Although the European Commission has already initiated a deficit procedure for France, concrete consolidation measures have not been decided. The fiscal budgets only indicate a moderate reduction of deficits with the goal of fulfilling the deficit criterion of the European Stability and Growth Pact again by 2013 at the earliest.

On account of an already high debt-to-GDP ratio exceeding 100 percent before the crisis, the Italian government did not have much room to manoeuvre. Accordingly it limited itself to a small economic stimulus package in 2009. Even so, its deficit rose to 5.3 percent of GDP last year. In the absence of clear consolidation plans by the Italian government, the European Commission decided in November last year to open a deficit procedure against Italy. The public deficit should be reduced to less than 3 percent of GDP by 2012 at the latest. The required reforms will dampen the economic recovery in the years to come.

The tense economic situation and the large-scale stimulus programs initiated by the government have worsened the fiscal position of Spain dramatically. A deficit of 11.2 percent of GDP resulted in 2009.

Induced by the deficit procedure initiated by the European Commission, the Spanish government decided to begin with the necessary consolidation of its finances already in 2010. In September last year, Spain presented a package of tax increases which will amount to 1.1 percent of its GDP. It contains the cancellation of various tax breaks, the increase of the value added tax by two percentage points to 18 percent, as well as a rise in capital income taxes. In spite of these restrictive measures, the economic situation will not allow the deficit-to-GDP ratio to fall substantially anytime soon.

1.2.2 Monetary conditions and financial markets

Monetary conditions

After September 2008, monetary policy in the western world was first of all directed towards securing the refinancing of private banks. After the bankruptcy of Lehman Brothers, trust in especially the banking system was devastated and only cutting interest rates would not have been sufficient to prevent a meltdown of the financial system as we know it. Hence, a series of unconventional measures were undertaken which basically implied that central banks turned into the main providers of liquidity on interbank markets.

Whereas the Federal Reserve and the Bank of England cut their key policy rates from 2.0 and 5.0 percent to 0.25 and 0.5 percent, respectively, since October 2008, the ECB reduced it from 4.25 percent to 1.0 percent in May 2009 (see Figure 1.17). More importantly, all three introduced non-standard measures to combat the crisis. For instance, the ECB embarked on a policy of fully accommodating banks' liquidity and extended the range of open market operations to include euro operations with maturities of one month, six months and one year, as well as operations providing US dollar and Swiss franc liquidity. In addition, the ECB has started purchasing euro-denominated covered bonds in July last year – a program which is targeted to buy up to 60 billion euros by June 2010.

As a consequence, the average maturity of these credits to the banking system increased further and the share of the once “main” refinancing operations with a maturity of one week only reached 8 percent in November of last year. This caused the overnight interbank rate to be, on average, only 0.4 percent and hence substantially below the interest rates to be paid

Figure 1.17

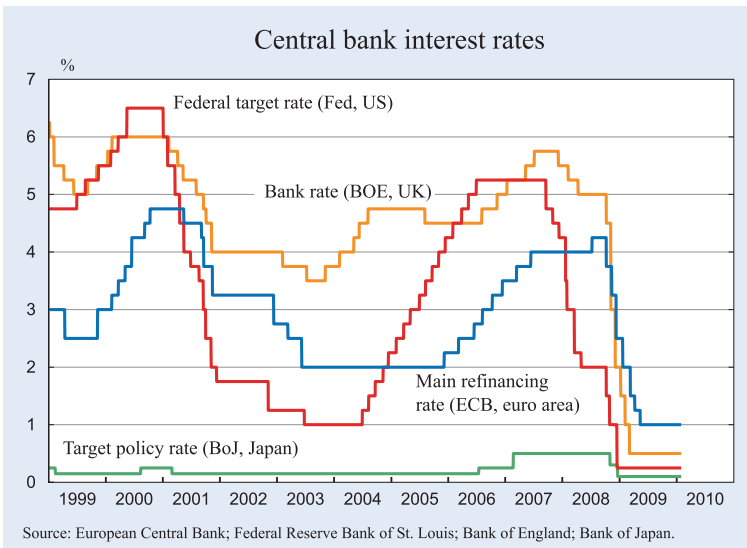


Figure 1.18

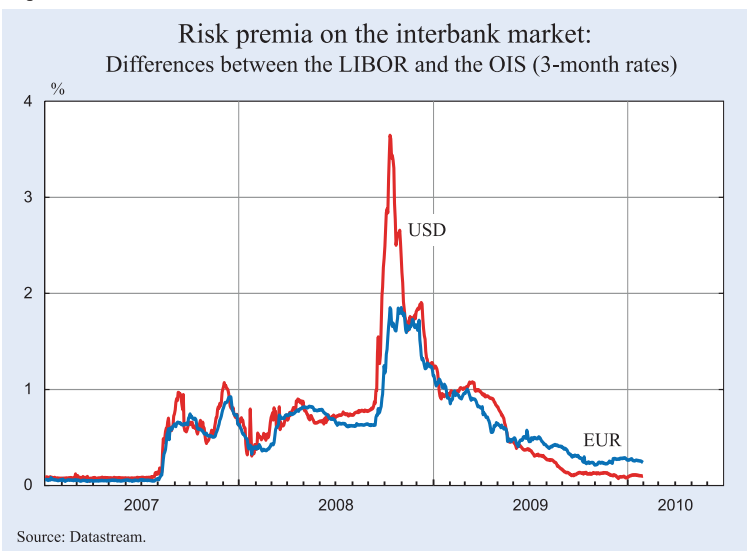
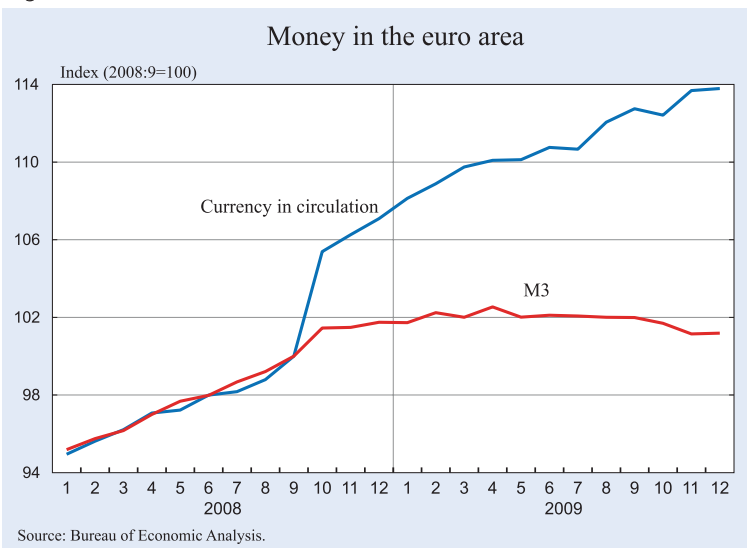


Figure 1.19



to the ECB for its open market operations. Also the 3-month unsecured interbank rate (Euribor) decreased substantially throughout the year and reached an average of 0.7 percent during the last two months of 2009. Furthermore, these unconventional measures were successful in steadily bringing back the risk premium in the interbank markets for unsecured money to close to pre-crisis levels (see Figure 1.18).

The unconventional measures have not only caused central banks' balance sheet to blow up since the start of the crisis, but the narrowly defined concepts of money, which are under close control by the central banks, have also been expanded substantially. In the euro area, the narrowest concept of money, i.e. currency in circulation, went up by closed to 14 percent since September 2008 (see Figure 1.19). Similarly, the monetary aggregate M1 grew by over 15 percent over the same period. A look, however, at broader concepts of money, which stress the role of the banking sector in the money creation process, gives a completely different picture. Since October 2008 there has practically been no movement in the most commonly used money supply measure, M3. In a year-on-year comparison, M3 shrank by 0.6 percent in December last year. Hence, although the ECB has provided the banking sector with ample liquidity to circumvent further problems within that sector, this additional liquidity has not been fully passed on to the private economy but merely prevented M3 from falling. This is not only observed in the euro area and can explain why central banks all over the world have changed their focus

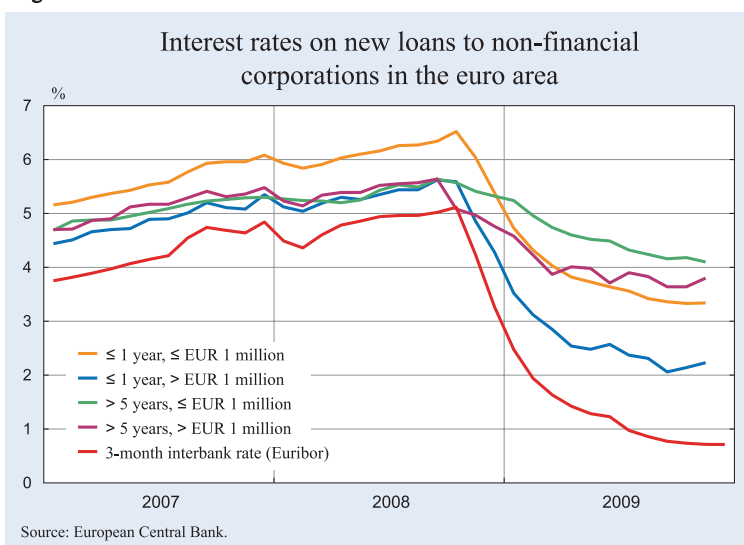
slowly away from rescuing the banking sector towards securing credit supply to non-financial corporations and households over time.

The lowering of interest rates by the ECB has also been reflected in falling lending rates for the non-financial sector. Until November last year the decline of the 3-month interbank rate, as measure of the refinancing costs of banks, since its peak in October 2008 equalled 440 basis points. For large loans, i.e. those above 1 million euros, with a maturity up to one year more than 80 percent of this was transmitted to the firms (see Figure 1.20). On the other hand, the interest rates on long-term loans and especially those below 1 million euros remained relatively stable – only a third of the reduced refinancing costs were transmitted. To a large extent this reflects that the present expansionary monetary policy stance is not expected to last forever. Obviously, however, this is also raising the profitability of credit business of banks, at least in the short term.

Despite these interest rate developments, credit volumes to the non-financial sector have not been able to pick up (see Figure 1.21). Whereas credit to households started stagnating in mid-2008, corporate credits have been falling since early 2009. The annual growth rate of the latter was – 2.7 percent in December last year. From May 2009 onwards household loans to finance house purchases are picking up again slightly. Mortgage loans were 1.7 percent higher last December as compared to the year before.

This indicates that it continues to be more difficult to acquire bank credits than it was before the crisis started. However, in both the US and the euro area, it has so far been difficult to find clear evidence in favour of an already existing credit crunch, in the sense that due to own balance sheet problems

Figure 1.20



banks are reluctant to supply new credits to healthy firms coming up with solid business plans. It still appears to be the case that – due to the loss in confidence and a general decline in demand for goods and services – the demand for credit has simply fallen. This is also reflected by the results of the business tendency surveys published by the European Commission. While the percentage of firms reporting that financial constraints are limiting their production possibilities has somewhat increased from 3.3 and 4.0 percent in the second quarter of 2008 to 4.9 and 4.4 percent at the end of last year, respectively, the percentage of firms in the manufacturing and construction sectors reporting that the lack of demand was causing them problems increased by 32.6 and 17.3 percentage points during the same period, respectively (see Figure 1.22).

Figure 1.21

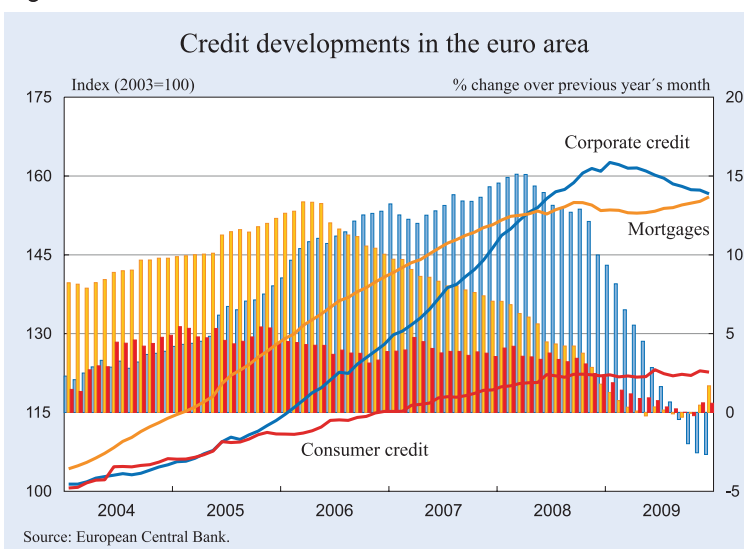
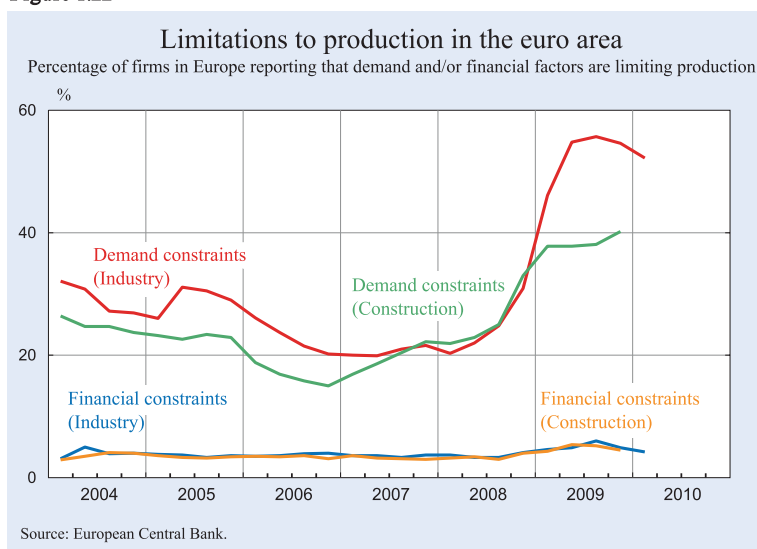


Figure 1.22



However, demand is slowly starting to pick up again and firms might soon be willing to invest in the future again. Consequently, the still prevailing problems within the banking sector might soon reveal that the

large new loans been falling less than in other euro area countries, also a unique business tendency survey in which firms are directly asked about the willingness of banks to supply them with credit suggests that

banks' willingness to supply credits is indeed strongly hampered. That would restrain a swift recovery and therefore it is certainly something to worry about in the time to come. A sudden introduction of increased capital requirements for banks, which is certainly needed in the medium term to avoid similar banking crises in the future, could further hinder the credit supply by banks.

In Germany it appears that especially larger firms are already confronted with rather restrictive behaviour of banks (see Box 1.1).

Not only have interest rates on

Box 1.1

Is there a credit crunch in Germany?

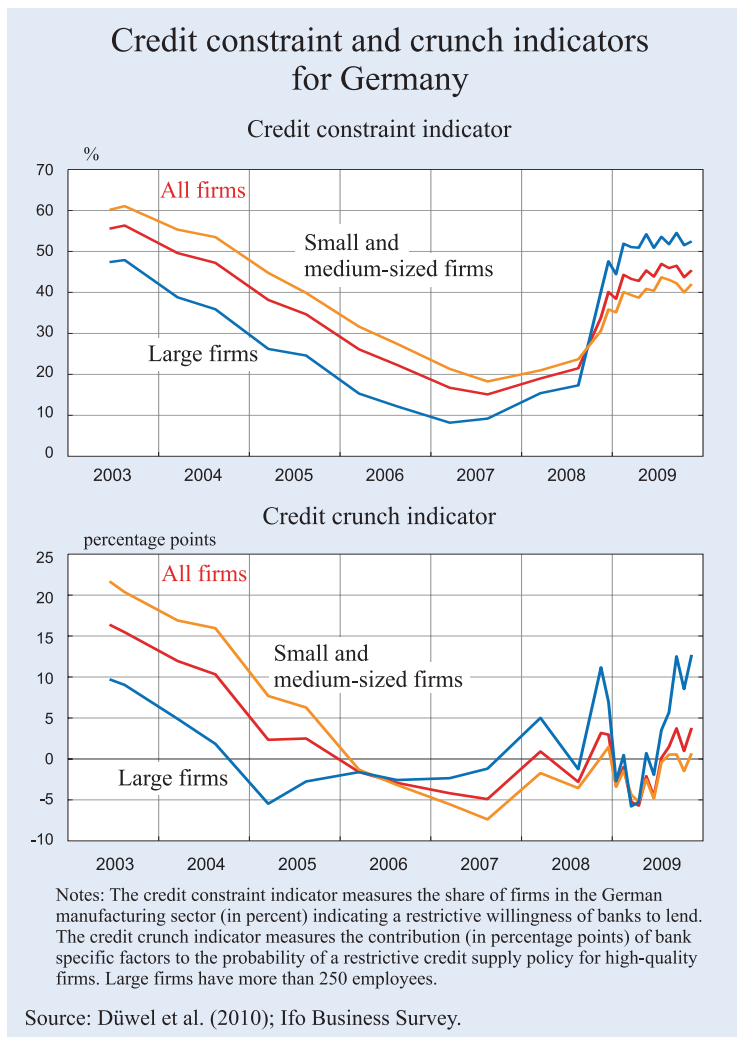
Since the outbreak of the financial crisis and in particular since the bankruptcy of Lehman Brothers, the share of firms in the German manufacturing sector that have indicated a restrictive willingness of banks to lend steadily increased from 15 percent to about 45 percent (see Figure 1.23). These results of the so-called credit constraint indicator are based on approximately 2,300 responses to a monthly survey conducted by the Ifo Institute for Economic Research. The firms are asked to provide information on banks' credit supply conditions by responding to the following question: "How would you assess the current willingness of banks to extend credit to businesses?" The answers to choose from are "accommodating", "normal" and "restrictive". While in regular times large firms typically have better access to credit, one of the characteristics of the current financial crisis is that in particular these firms, at least in Germany, are more credit constrained than small and medium-sized firms.

A tightening of the banks' credit supply conditions in an economic downturn is nothing unusual, however. In order to identify a credit crunch, which is commonly defined "as a significant leftward shift in the supply curve for loans" (Bernanke and Lown, 1991), we need to adjust the survey responses for the regular determinants of the supply curve, in particular "the safe real interest rate and the quality of potential borrowers" (ibid.). Using a conditional fixed-effects logistic model where the dependent variable is a binary choice variable, which measures the firms' perception of the banks' credit conditions, Düwel et al. (2010) estimate a credit crunch indicator in a two-step procedure.

In a first step they regress the response to the credit question on a set of both firm-specific and macroeconomic variables. The firm-specific variables, which are also taken from the monthly Ifo survey, are used as proxies for the quality of a firm. They measure the firms' current state of business and its current volume of orders in hand. The macroeconomic variables measure the overall economic activity and the banks' refinancing costs. In a second step, they replace the macroeconomic variables by T-1 time dummies, where T is the number of surveys between June 2003 (when the credit question was first asked) and November 2009. The idea is that the time dummies capture both types of variations of banks' lending practices over time: the macro factors (overall economic activity and banks' refinancing costs) and some remaining factors, which are qualified as bank-specific determinants of credit supply. Finally, a credit crunch indicator is generated which takes that part of the (leftward) shifts in the credit supply curve that are neither explained by firm-specific nor macroeconomic factors and, hence, are likely to be caused by bank-specific factors. Technically, the credit crunch indicator is calculated as the difference between the predicted probabilities of a restrictive credit supply policy for high-quality firms (i.e. for firms which assess their current business situation as "good" and their volume of orders as "relatively high") of the second and the first step of the regression.

At the end of 2008 and early 2009 government intervention, like the massive public sector equity support to banks, was initially able to reduce the probability of a restrictive access to credit for high-quality firms in Germany. However, the credit crunch indicator has been steadily rising since. It changed from negative to positive mid-2009 and reached a value of +4 percentage points by the end of the year. In a historical perspective this is still to be considered low. However, across firm size substantial differences emerge. Given the massive deterioration of the firms' quality during the recession and the evolution of the macroeconomic determinants of credit supply, the situation for small and medium-sized firms turns out to be "normal". On the other hand, the restrictive stance of the banks' lending practices has reached unprecedented levels and is as such perceived to be high by large firms.

Figure 1.23



maintained above all relationships with these larger firms, can explain why these firms face such problems. Roughly half of the decline in credit to the manufacturing sector during the third quarter of last year can be explained by the pullback of foreign banks.

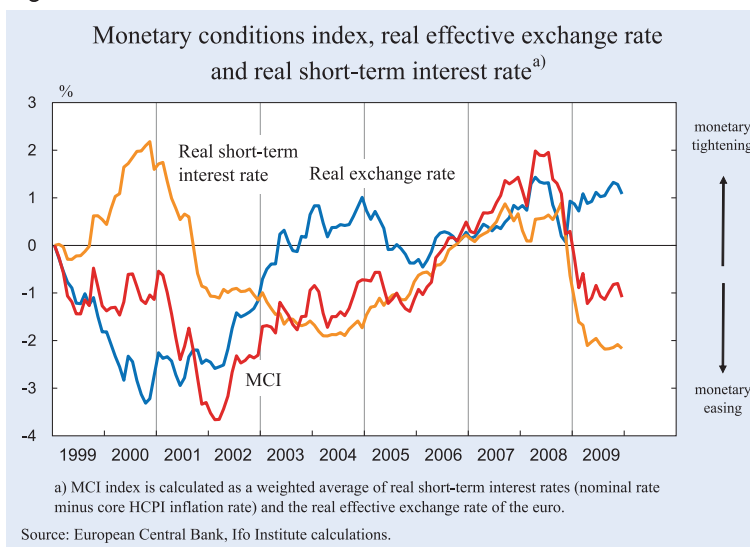
Although nominal interest rates continued to fall last year, this does not automatically imply that the overall monetary conditions have improved. Not only credit supply behaviour of banks matter in that respect, also inflation and exchange rate developments are important to determine the monetary conditions in the euro area. Whereas inflation rates fell, limiting the reduction in real interest rates, the euro continued to appreciate in real effective terms. All in all, monetary conditions as measured by the weighted average of the real short-term interest rate and the real effective exchange rate remained relatively constant and still slightly above its long-run average throughout last year (see Figure 1.24).

especially the bigger firms have increasingly had problems acquiring new loans. The reduction in business activity of major foreign banks from Germany, which

The ECB will leave its main refinancing rate at its low level this year. However, the ECB has already

announced that it will move successively away from its policy of providing unlimited liquidity and repurchasing arrangements with longer maturities. Therefore, money market interest will start rising and thereby approach the main refinancing rate of 1 percent during the year. Given the large output gap and the extremely modest inflation developments, the ECB will not start increasing its own interest rates at least until the end of 2010.

Figure 1.24



Also the Bank of England will stick to its accommodative monetary policy stance. Not only inter-

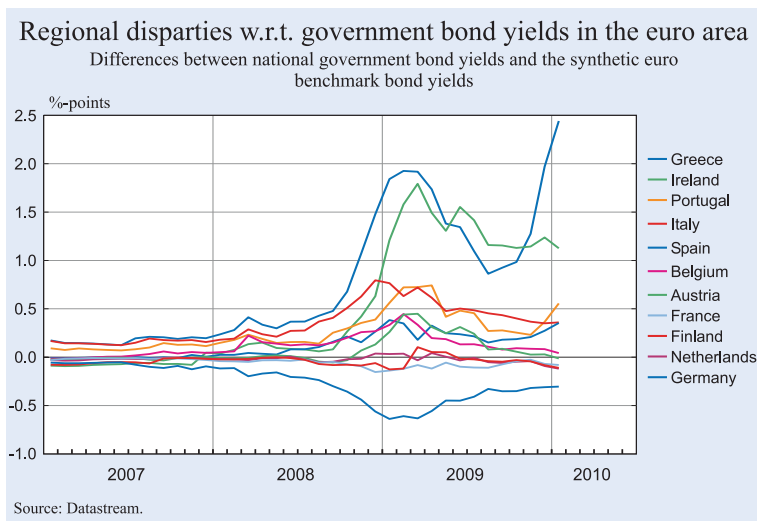
est rates are low, also the British pound has depreciated substantially against the euro since the start of the crisis and has not recovered from it since. The Bank of England left its bank rate at 0.5 percent and once more increased the size of its program to buy government bonds by 25 billion UK pounds to 200 billion UK pounds in November last year.

Bonds, stocks and foreign exchange markets

At the peak of the economic crisis the flight to quality lowered government bond yields of the US, Japan and large European economies substantially. Throughout the first half of last year, as confidence picked up again, this process was at least initially reversed. Only in China did government bond yields continue to fall almost consistently since early 2009. Comparing the yield level at the end of 2009 with one year before reveals a decrease of close to 70 basis points for China, whereas during the same period in the US yields increased by almost 120 basis points. In Japan and in the euro area, levels have not changed much (see Figure 1.25).

The surge towards safe assets caused higher risk premia on corporate bonds and government bonds of smaller economies during the crisis months. The reversal has occurred since spring last year. The yields on corporate bonds have fallen due in particular to a

Figure 1.26

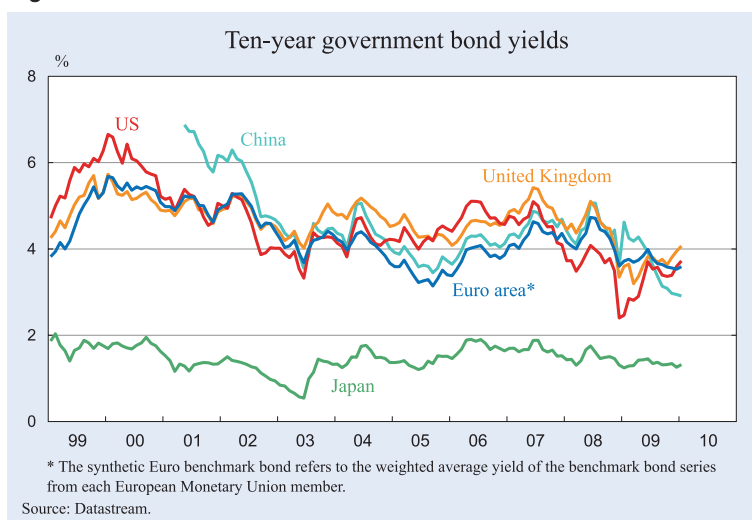


decline in risk premia. Yields on corporate bonds of the highest quality (AAA) and a maturity of two years have in the euro area decreased by approximately 100 basis points since early 2009; those with BBB ratings saw a decline of about 250 basis points in yields.

With respect to government bonds, the only exception of the above-described pattern is Greece. The spread between its government bonds and the synthetic (i.e. its weighted average) government bond for the euro area reveals that since the end of summer the default risk of the Greek government has risen sharply again. In January this year, its government bond yield was almost 245 and 275 basis points above those for the euro area and Germany, respectively (see Figure 1.26). With a fiscal deficit of 12.7 percent – the highest in the European Union – and a debt level of well above 110 percent of its GDP last year (with the prospect of reaching the highest level within the European Union here as well), financial markets do not consider public finances in Greece to be sustainable anymore.³

Another positive influence on the financial conditions for especially larger firms has been the increase in stock market prices in early spring last year. Also due to the low interest rate environment, by the end of last year, the Euro

Figure 1.25



* The synthetic Euro benchmark bond refers to the weighted average yield of the benchmark bond series from each European Monetary Union member.

³ See Chapter 5 for more discussion on this issue.

Figure 1.27

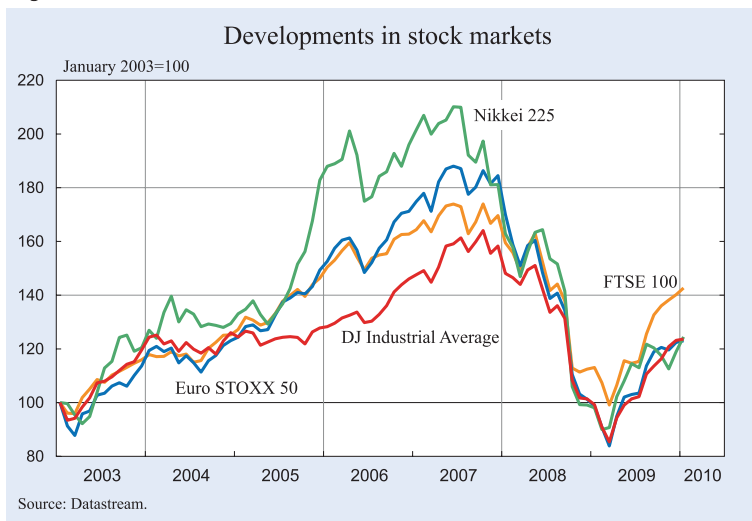


Figure 1.28

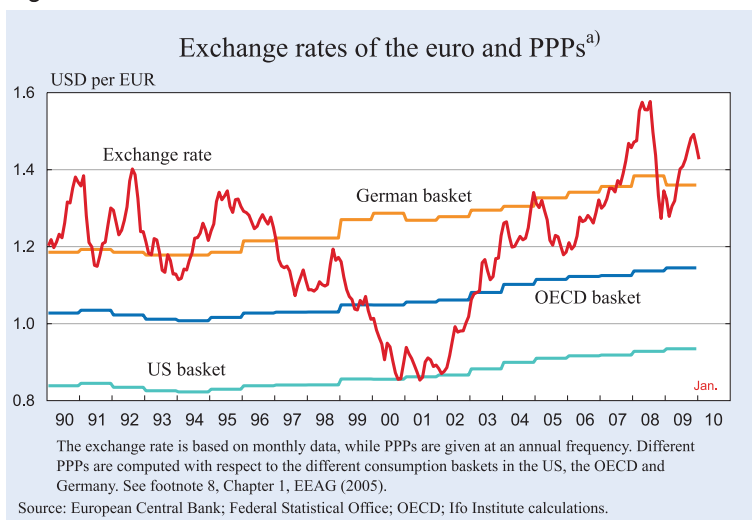
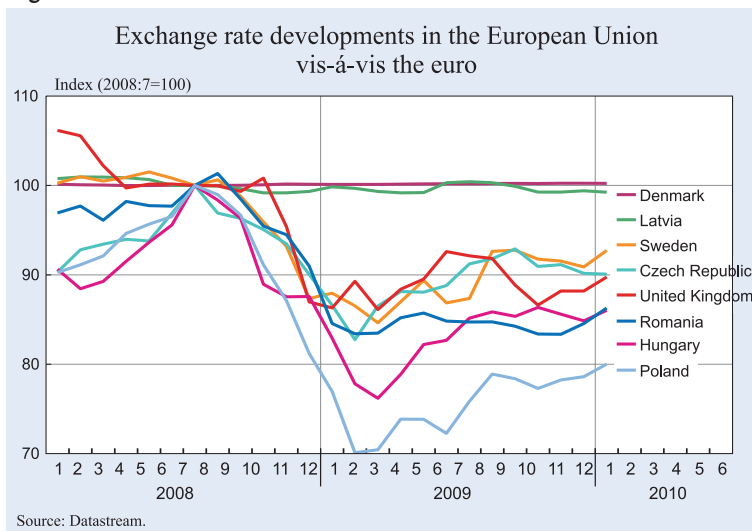


Figure 1.29



STOXX 50 improved by 47 percent since its trough in March and has reduced its gap to its highest level reached in June 2007 to 35 percent (see Figure 1.27).

Comparing the peak and trough reveals that during the crisis a drop of 55 percent occurred. Similar figures hold for basically all major stock market indexes around the world. After having experienced a drop of 50 percent during the crisis, they have all gained about 40 percent by the end of last year, thereby reducing the fall to approximately 30 percent. Furthermore, overall volatility in stock markets – as for example measured by the implied volatility on the S&P 100 and which has become known as the financial “fear factor” – has decreased substantially.⁴

Not only were bond and stock markets in turmoil during the crisis, but also exchange rates were quite volatile during that period. Whereas the euro sharply depreciated against the US dollar during the crisis, it regained much of its strength again during the course of last year (see Figure 1.28). The historically strong euro is reducing international competitiveness of its member countries and shifting at least part of the burden of the economic crisis on to euro area.

Also within Europe exchange rates moved quite a bit during the year. The depreciation of the currencies of EU member countries against the euro has helped cushion the crisis in those economies. The currencies which had clearly given way during the crisis, i.e. the Czech crown, Hungarian forint, Polish zloty, Romanian leu, and the UK pound, partly made up for their losses during spring and summer last year (see Figure 1.29). Still all of them remain at values below those observed shortly before the crisis. On the one hand, this will

⁴ See Bloom and Floetotto (2009) and <http://www.stanford.edu/~nbloom/> on this.

benefit their competitiveness. On the other hand, for the eastern European countries, whose debt is largely denominated in euros, it also implies a higher foreign debt burden.

1.3 The macroeconomic outlook

1.3.1 The global economy

In the course of 2009, most countries in the world moved out of recession or at least witnessed a stabilisation of their economies. Coming from mostly historical lows, expectations of the Ifo World Economic Survey have skyrocketed in all major regions of the world economy and even reached a historical high in Asia (see Figure 1.30). Given the tremendous fall – which can only be partly reflected in these kinds of surveys due to the bounded nature of the answering categories – many participating experts have realised that their economies have hit rock-bottom and that factually anything else than an improvement of the situation is becoming more and more unrealistic. Furthermore, it is likely that they have also updated their beliefs about what could be the worst state of the world. Hence, given the relative nature of these survey questions and the changed focal point, one has to be careful not to draw too strong conclusions from them in the present situation. Nevertheless, it is safe to say that experts around the world increasingly tend to agree that the economic recovery will continue in the months to come.

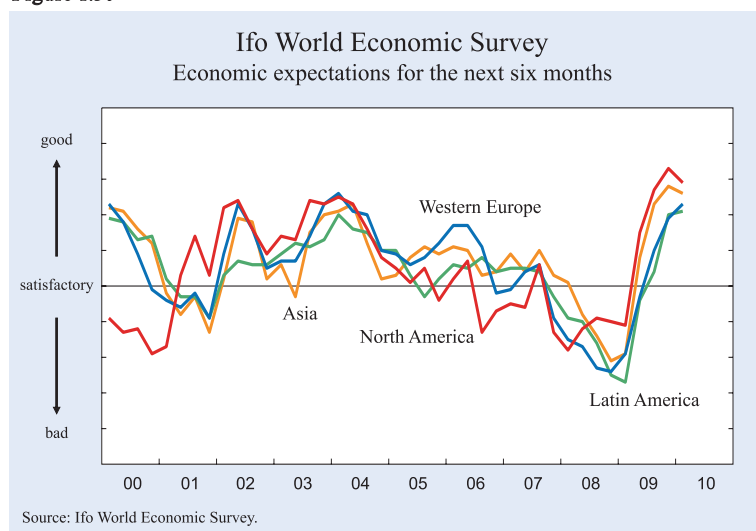
Although not all problems have been solved, the uncertainty concerning future business cycle developments has diminished – although remaining high in an historical perspective – and the sales prospects of

many firms have improved, however, after often having reached historical lows. The huge fiscal stimulus measures and expansionary monetary policy stance have prevented an even worse outcome. Industrial production has started its recovery after its sharp fall and also the normalisation of world trade is underway. The latter is also due to the improved trade finance possibilities which were severely constrained during the crisis.

However, the world economic recovery will only temporarily turn out to be stronger than in autumn last year. Structural problems, which suppress economic growth, continue to be large. For instance, credit supply of banks will remain restrictive. A credit crunch in the light of the increased demand for external funds is becoming more likely. However, the strong under utilisation of production capacities will continue and thereby keep the demand for net investments comparatively low. Furthermore, the labour market situation will not only remain depressed, but will slightly deteriorate further, dampening private consumption.

Furthermore, uncertainties, mistrust and panic-stricken reactions all around the world during the peak of the crisis have triggered a general de-leveraging process throughout the economy and have led to a surge in liquidity demand.⁵ To generate liquidity, many firms were forced to reduce inventories substantially. Stabilisation also implies that this process of reducing inventories has been stopped and for the time-being even reversed. Such inventory cycles, however, are generally not long-lived and the currently observed positive impulses are bound to end anytime soon.

Figure 1.30



Finally, policy impulses, i.e. additional policy measures, which so far have not only stabilised but also revived the world economy, will become weaker during our forecasting horizon. Especially fiscal policy stimulus will fade and even turn negative. The fiscal balance situation in most countries has worsened dramatically and will continue to do so in the years to come. If they have not already done so, governments must inevitably develop strategies

⁵ Chapter 2 discusses in more detail the role trust plays in financial markets.

to reduce fiscal deficits and subsequently implement them. This will retard the recovery process further. Hence, the world economy will start lose momentum during 2010.

After an unprecedented drop since World War II of minus 2.3 percent last year, we expect world GDP to increase by 2.5 percent in 2010. Hence, world economic growth will stay below its long-run average.⁶ Combined with a usual increase in labour supply and further technological progress, this will not prevent unemployment rates from continuing to rise. Inflation will accelerate somewhat, but also stay well below its long-run average.

Despite the economic crisis in Japan, the only region that still managed to contribute to economic growth positively last year was Asia (see Figure 1.31). Its growth contribution this year will reach almost pre-crisis levels again. The two regions that remain well-below their potential are North America and Europe. Of the four major regions in the world, it is evident that none of them will reach pre-crisis levels again this year (see Figure 1.32).

1.3.2 United States

Although the recession has ended, the US economy still has to conquer its structural problems. US con-

sumers have been living beyond their means for too long. To allow for a way back to sustainable growth, US consumers are in a process of curtailing their consumption. This process has already set in but needs to continue during our forecasting horizon. However, it should ultimately not be compensated for by an increase in public deficits – as presently is the case.⁷ Furthermore, although the worse seems to be over for the banking industry, a continuation of write-offs – as predicted by the IMF (2009) – is highly likely and government interference in the banking and real estate sectors will consequently remain high. On top of that – and as discussed in more detail in Chapter 3 – fiscal sustainability is a new issue that will stay on the agenda for the years to come.

The fiscal stimulus package will unfold its biggest influence on the deficit in fiscal 2010 when about 400 billion US dollars of the estimated 787 billion US dollars becomes effective. On top of that, rising social expenses, particularly in areas related to the labour market and the health sector, will hardly result in a lowering of the budget deficit in fiscal 2010 despite the reduction in expenses related to banking sector. Therefore, the debt-to-GDP ratio will surpass 90 percent this year. This will further limit the

Figure 1.32

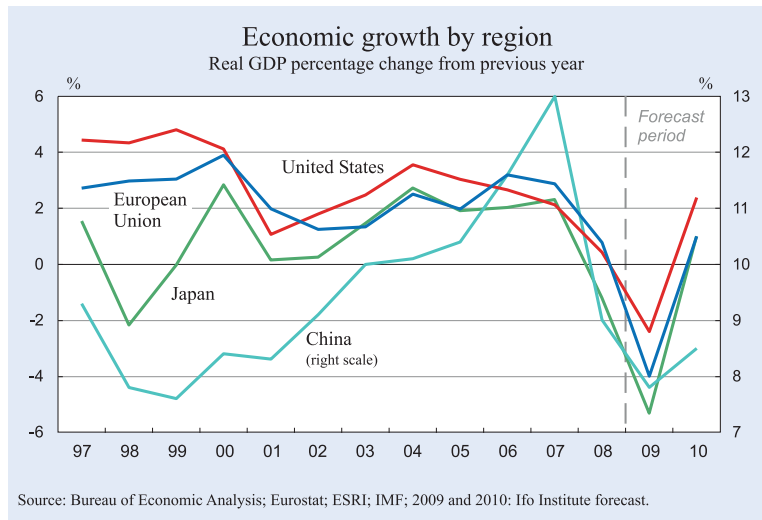
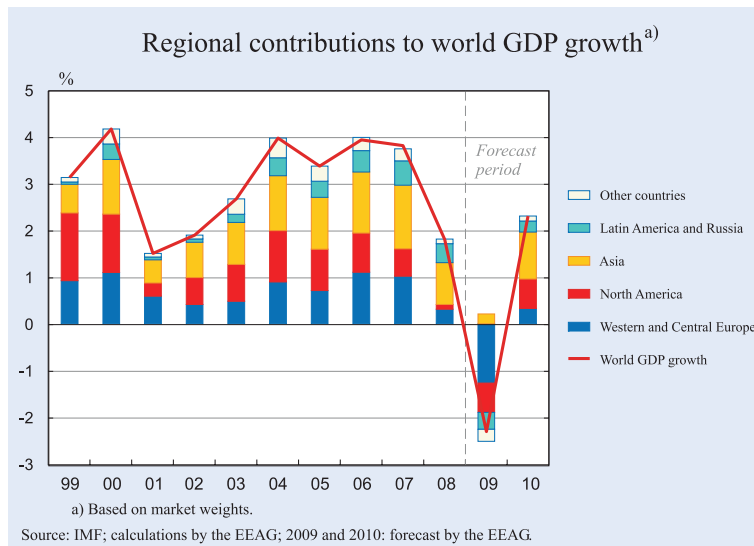


Figure 1.31



⁶ This figure is based on market prices. If instead purchasing-power-parity adjusted weights were used – and therefore emerging markets would receive higher weights – our growth forecasts would be 3.2 percent in 2010 (see Figure 1.2).

⁷ See Chapter 4 on this.

room for manoeuvre of the US government in the years to come.

Many banks are still not willing to add mortgage loans onto their own balance sheets. Consequently, approximately 95 percent of all new mortgage loans are currently issued and securitised by the government supported enterprises, Fannie Mae, Freddie Mac and Ginnie Mae. These mortgage-backed securities are mainly bought by the Federal Reserve. Hence, terminating this kind of monetary assistance – as scheduled for the first quarter this year – will put a substantial burden on the mortgage market. Besides increases in mortgage interest rates and a further rationing of mortgage supply, it is quite possible that this will trigger further reductions in real estate prices. Also to alleviate this, the Federal Reserve will continue its zero-interest rate policy throughout this year.

Although monthly data on private consumption give a relatively upbeat impression of the fourth quarter of last year, consumer sentiment surveys, on the other hand, indicate that consumer confidence remains low. In particular, the persistently tense labour market situation is responsible for this. The sharp rise in unemployment is increasingly restraining income developments of households. The increase in nominal wages has already slowed down noticeably and real wages will be under pressure more and more especially now that the negative base effect on inflation caused by the drop in energy prices last year has ended. Due to falling interest and dividend income, real disposable income – the most important determinant of private consumption – already fell during the third quarter of last year.

Reducing the indebtedness of households will increasingly restrain consumption. Saving rates have already increased from approximately 1 percent in early 2008 to around 4.5 percent at the end of last year. This process is likely to continue as is also shown by reduced lending to households, in particular with respect to credit card loans. Consumer loans have already sunk nine months in a row up until October last year. With the expiration of state support in the course of 2010, private consumption will hardly expand anymore.

Investment will stop declining. Although the situation on the real-estate market remains fragile, residential construction already stopped falling during the second half of last year. More stable business conditions will induce the same with respect to non-residential

construction investments and investments in equipment and software. Credit constraints and subdued domestic developments will prevent fixed capital formation from taking a lead in the US recovery.

Although both exports and imports will continue to grow, the weak dollar and the constraints on domestic demand will allow net exports to contribute positively to economic growth. Consequently, the current account deficit will continue to be reduced – albeit at a slower pace than last year.

Driven by extensive monetary and fiscal policy as well as cyclically-determined inventory investments, overall production will still noticeably expand during this winter half-year. However, as the impact of these supportive elements will weaken and the heavy burdens on private consumption will remain, GDP growth will lose its momentum. After a decline of 2.6 percent last year, GDP will expand by 1.9 percent this year. The unemployment rate will reach an average of 9.5 percent this year.

After the recession and the fall in energy prices caused inflation in the US to even turn negative last year, consumer prices will start to increase again at very moderate rates. For this year, we expect annual inflation to equal 1.6 percent.

1.3.3 Japan, China, India and other Asian countries

Although *Japan* will continue its recovery in the short run, the medium-term expectations are quite bleak. Whereas both private consumption and exports allowed for relatively positive developments during the last three quarters of 2009, it is to be expected that only the latter will remain the main driver of growth this year. The Japanese export economy benefits from its geographical proximity to Asian emerging markets, which are experiencing a surge in domestic demand.

Especially the slack in private consumption will suppress the domestic economy. As most of the consumption-oriented stimulus packages are expected to be phased out in the first half of 2010, a setback in consumption growth is likely. With the prolonged duration of the under-utilisation of production capacities, both employment and wages are expected to decrease. Furthermore, the persistent deflation will attenuate private demand. Although exports will remain the main pillar for economic growth based on the surge in demand from China, the strong yen –

reaching a 14-year peak against the US dollar at the end of November last year – will nevertheless restrain the export-dependent Japanese economy.

The Japanese authorities take these risks seriously and have – contrary to other governments in the Asian region – initiated new measures to stimulate the economy. At the beginning of December last year, the Japanese government launched an additional stimulus package of 7.2 trillion yen (54 billion euros) directed towards domestic demand to prevent the menacing drop in consumption. The Bank of Japan has announced intentions to stick to its low-interest rate policy for the time being and has once again provided liquidity of more than 10 trillion yen (76 billion euros) to the banking sector to boost credit supply.

Consequently, these measures will further increase public deficit and debt as a percentage of GDP this year. The latter will surely surpass 200 percent this year. Although the public finance situation is unlikely to be sustainable in the long run, the situation in Japan is – in an international comparison – quite unique. Although the public sector has been dissaving for decades, the savings rate of the private sector more than compensates for this. Japan for years has already been a net creditor to the rest of the world. Hence, it has at least thus far been relatively easy for the Japanese government to finance its debt domestically at low cost – the 10-year government bond yield hovers at around 1.3 percent presently. Approximately 90 percent of Japanese government debt is owned by Japanese individuals.

In 2010, the positive impulses from the world economy, and in particular from China, will prevail over the domestic problems. All in all, economic growth will amount to 1.0 percent (after – 5.3 percent last year).

The short-term economic prospects for China remain quite positive. This can especially be traced back to government policy which succeeded – with a massive stimulus program – in strengthening its economy without relying on outside impulses. The program is scheduled to run out by the middle of this year and will not be fully compensated for by impulses from the rest of the world. As a consequence, GDP growth will equal 8.5 percent this year.

This optimistic view is not clouded by an increase in inflation. After having been partly negative during

last year, it will stay below 3 percent this year. Furthermore, according to official statistics, the unemployment rate in urban regions remains low. Also from the exchange rate side no negative impulses are to be expected. In spite of criticism from abroad, the Chinese government appears to be retaining its policy of keeping a fixed exchange rate to the US dollar, thereby continuing to subsidise its export-oriented economy via a strongly undervalued renminbi.

In principle, the room to manoeuvre for the Chinese government remains large. The success of the stimulus packages have induced larger than expected government revenues. Thus, the fiscal deficit reached only around 3 percent of GDP last year and the public debt remains modest. Nevertheless, economic policy is increasingly putting a burden on the Chinese economy by aggravating unbalanced economic developments. Already during the past years gross capital formation, at a share of more than 40 percent, was extremely high – even larger than the share of private consumption (about 35 percent).⁸ As a clear focus of the economic stimulus package is to support investment activity of large, often state-controlled, enterprises, their weight will even increase further. In the medium term, many of these investments may prove to be misdirected, unprofitable and may lead to overcapacities in some sectors. Furthermore, the strong increase in credit growth has induced a boom in both stock and real-estate markets which might turn out to be bubbles.

Also *India* has to a large extent been able to remain close to its long-run growth path throughout the crisis. The outlook for this year remains favourable and its growth rate is bound to remain robust. We expect an increase of GDP by about 6.8 percent.

In light of this, both government and central bank have announced that they will terminate their stimulus measures. At the end of last year, the government announced that it would reduce its funds to support the economy this year. This was not only triggered by the improved economic situation, but also by the estimated large budget deficits of 7 percent of GDP both last and this year. Also at the end of last year, the central bank of India announced its aspiration to raise interest rate in the first quarter in 2010 again. Among the central banks in Asia, it thereby takes the lead. Higher inflation forecasts have probably been

⁸ In a typical developed country, these figures are around 20 percent and 65 percent, respectively.

decisive for this decision. Due to low precipitation already in October last year, food prices have surged. The inflation rate is likely to increase to beyond 5 percent this year.

In the remaining emerging economies of Asia, i.e. *Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand*, the recovery will continue. Although domestic demand will also pick up, the region will mainly benefit from economic developments in China. Hence, the current account surplus of the region will – after having been reduced last year – increase again. GDP of these East Asian countries will grow by a moderate 3.5 percent this year.

1.3.4 The rest of the world

The present recovery of the global economy and its subsequent slow-down will also affect Latin America and Russia.

For the Latin American countries of *Argentina, Brazil, Chile, Colombia, Mexico and Venezuela*, sound economic conditions assure that its recovery can continue to be largely driven by domestic factors. Consequently, the current account deficit which has emerged during the crisis – and reflects the buffering function of this region for the world economy during the crisis – will remain negative throughout our forecasting period. GDP having shrunk by 2.2 percent last year, the region will expand by 3.1 percent in 2010.

Not all countries in this region will recover at the same speed. Whereas growth will remain comparatively strong in Brazil as a result of the robust domestic demand, it will be much weaker in Mexico. The latter continues to suffer from its proximity to and thereby dependence on the US economy. Some of the countries benefit from the recent increase in raw material prices.

Economic activity in *Russia* will only increase gradually. GDP growth is expected to rise by only 1.5 percent this year, after having fallen by 8.0 percent in 2009. Especially the recovery of investment will be slow. The worldwide increase in demand for raw material – and in particular from China, the second most important trading partner of Russia – will, on the other hand, be supportive.

Private consumption will be stimulated by expansionary fiscal policy. For instance, whereas pen-

sions fell back relative to wages in recent years, they are scheduled to increase substantially this year. As a downside of these measures, the public finance situation has already worsened substantially last year – the budget deficit rose to 7 percent of GDP in the first half of 2009 as compared to a surplus of a similar magnitude the year before. It is bound to deteriorate further, albeit at a slower pace. Parts of the deficit are and will be financed by withdrawals from the stabilisation fund that is fed by raw material proceeds. Its size, however, is shrinking quickly. Whereas it amounted to 16.2 percent of GDP on average in 2008, it was only 12.7 percent in August 2009.

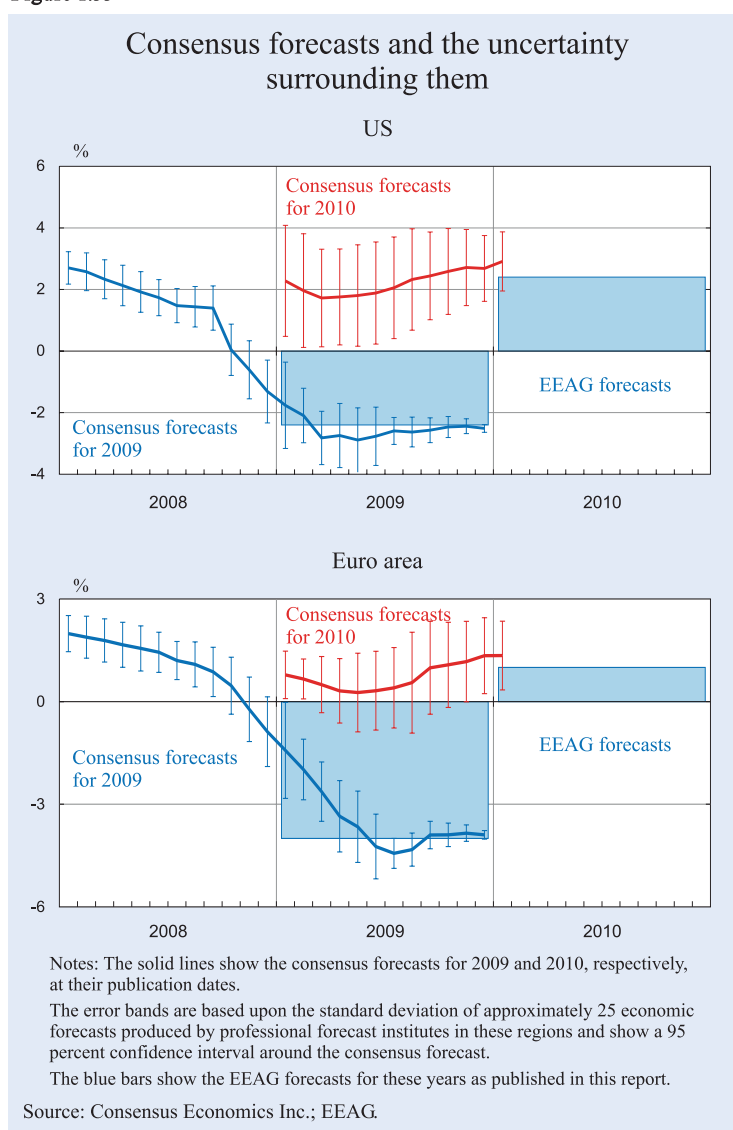
1.3.5 Assumptions, risks and uncertainties

This forecast rests on the technical assumption that oil price will move around 75 US dollars per barrel and the euro exchange rate stabilises at around 1.45 US dollars. World trade is expected to increase by 5.0 percent this year, after having dropped by 11.0 percent in 2009.

Although the banking crisis appears to be under control and the world economy is slowly recovering, uncertainty about economic prospects remains high. Whereas the maximum spread between forecasts of (approximately 25) different institutes in the US, as measured by its 95 percent confidence interval, has been around 70 basis points for the years 2005 until 2007, it increased to approximately a 100 and 150 basis points for 2008 and 2009, respectively. For 2010 the largest amount of uncertainty amongst professional forecasters was registered in early 2009; the spread even reached 185 basis points (see Figure 1.33). In the latest data we have seen a reduction to 96 basis points, which is historically still large. For the euro area a similar picture emerges, albeit its peak with respect to the forecast disagreement for 2010 was in August 2009.

In our forecast the economies of industrialised countries and especially the US will only recover slowly. However, several leading indicators have improved substantially in recent months. In our view, besides the technical problems with many of these survey-based indicators mentioned in Section, this is largely due to the extraordinarily expansionary economic policies carried out by government and monetary authorities around the world. Its stimulus impact could be much stronger if the multipliers are bigger than we expect. In that case, the

Figure 1.33



private economies would not only stabilise but also go into a sustainable and self-supporting upswing.

Furthermore, our US scenario is based upon the idea that private consumption will have to remain subdued until structural problems of the US economy are overcome. If, on the other hand, US consumers do not increase their saving rates by as much as we assume, the US economy might perform – from a business cycle perspective – better than expected. By bringing our US forecast closer to what is currently the consensus, this would also uplift our forecast for the rest of the world.

However, there is also the risk that the world economy will slip into recession again especially if the credit supply by banks should be restricted more and longer than expected. This would above all happen when

capital ratios of banks continue to erode as a consequence of further massive write-offs. According to calculations of the IMF (2009), still pending write-offs continue to jeopardise financial market stability. The fragility of financial markets became apparent at the end of last year as seen by the reaction of stock markets to financial difficulties in Dubai and Greece. An intensification of the banking crisis as a result of other shocks could send financial markets into a downward spiral. This would undoubtedly have negative consequence on the world economic climate.

Another risk for the world economy lies in the challenge for policy-makers to reverse their expansionary course appropriately. Phasing out expansionary policy should ideally occur when the economy – in particular private domestic demand – has stabilized and is able to revive gradually without further fiscal or monetary impulses. However, if governments decide to cut back their stimulus measures too early, many economies would fall back into recession. This holds both for monetary policy as well as fiscal policy. The latter could be tempted to limit the massive expansion of

budget deficits by introducing consolidation measures too quickly. Indeed, also waiting too long before reducing stimulus measures contains considerable risks; it could easily cause a drop in confidence in the sustainability of monetary and fiscal policy. Should central banks maintain their expansionary course much longer, this could lead to an increase in inflation expectations. Also the likelihood that a new bubble emerges somewhere in financial markets would be high as a result of a persistent increase in liquidity. Already now it cannot be ruled out that the recovery on financial markets is unsustainable.

For fiscal policy, high public deficits could also result in a credibility problem by which the room to manoeuvre would be seriously limited. In case governments do not succeed in communicating their consolidation efforts credibly, this would seriously reduce

trust and lead to an increase of the capital market interest rates. This would, in turn, increase the interest burden of public finance.

1.3.6 The European economy

The cyclical situation

The deep economic recession has moved from a stabilisation phase mid-2009 into a moderate recovery. Coming from historical lows, consumer and producer confidence are on the mend and pointing upward. The recovery is likely to continue in the coming quarters. It is still doubtful though whether it will turn into a self-supporting upswing. Several restraining factors remain. Credit supply is bound to become more restrictive also because the past recession will for the time being continue to create additional write-offs. Capacity utilisation rates will – after their severe drop during the crisis – only slowly move away from their historically low levels. Consequently, the situation on the labour market will continue to deteriorate. Hence, as soon as stimulus measures and impulses from the inventory cycle wear off, the European Union is likely to fall back to a phase of low growth. After having sunk by 4.0 percent last year, GDP will rise to 1.0 percent this year (see Figure 1.34).

Of the demand components, only gross fixed capital formation will continue to contribute negatively to economic growth this year (see Figure 1.35). Investments will first continue to fall, but during the course of the year increase moderately. A combination of low profits, tougher financing conditions and low growth prospects will continue to put a burden on firms' willingness to in-

Figure 1.34

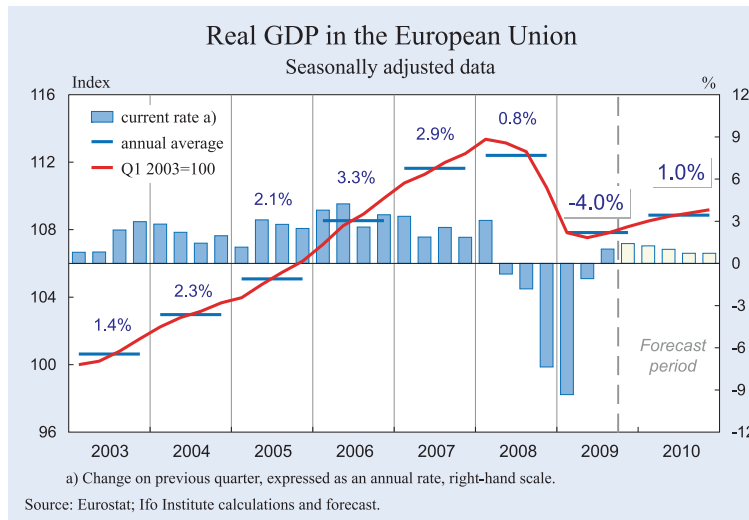
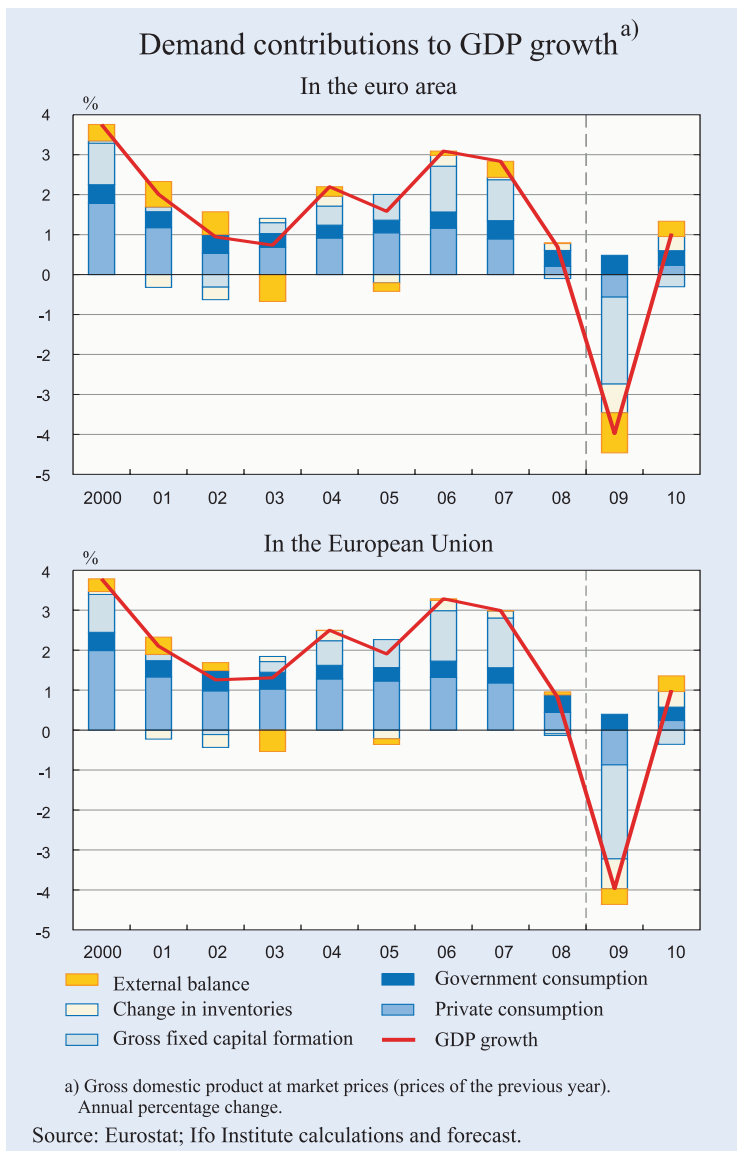


Figure 1.35



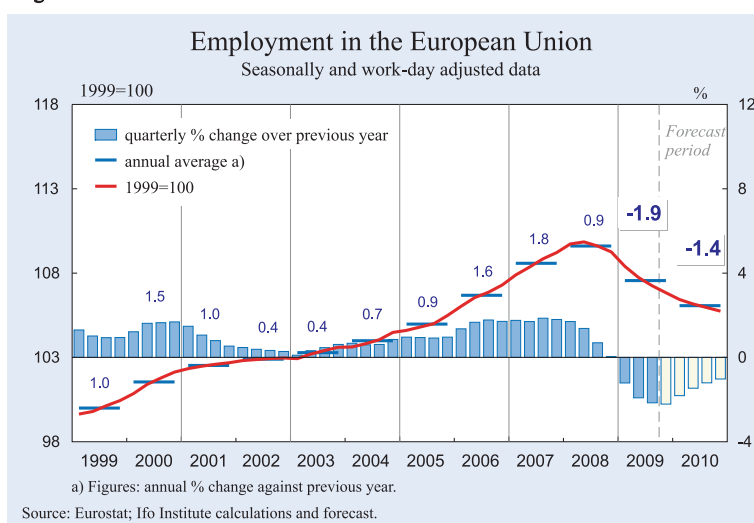
vest. Although machinery and equipment investment is likely to pick up somewhat during the year, the large fall in 2009 will prevent annual rates from turning positive. Despite the first signs of stabilisation on housing markets, residential investment continues to shrink, albeit at a slower pace. Also non-residential construction will continue to report negative growth. Stimulated by fiscal measures, only infrastructure investment will show moderate growth this year.

A relatively strong impulse will come from investment in inventories. Whereas during the crisis the speed at which inventories were emptied out was extraordinary (to increase firm liquidity), it was also clear that this process was not sustainable. In the meantime inventories are still falling, albeit at a slower pace. Already the reduction in the rate of decline is creating a positive impulse for economic growth. The decline in inventories is bound to turn into an increase. Therefore, the positive impulses will remain during the first half of this year. Once inventories have been restored, their cyclical influence is likely to diminish again.

The largest demand component, i.e. private consumption, will deliver only a small positive contribution to economic growth in the European Union. It will expand only moderately as a result of the precarious situation on the labour market and the reduced real wage growth. Lower nominal wage growth together with moderately increased inflation rates will suppress developments in real disposable income.

Stronger growth in emerging markets together with moderate developments within the European Union will allow net exports to contribute positively again to overall growth, thereby increasing the prevailing trade account surplus again after its shrinkage last year. Both exports and imports will grow, albeit the latter at a somewhat slower pace.

Figure 1.36

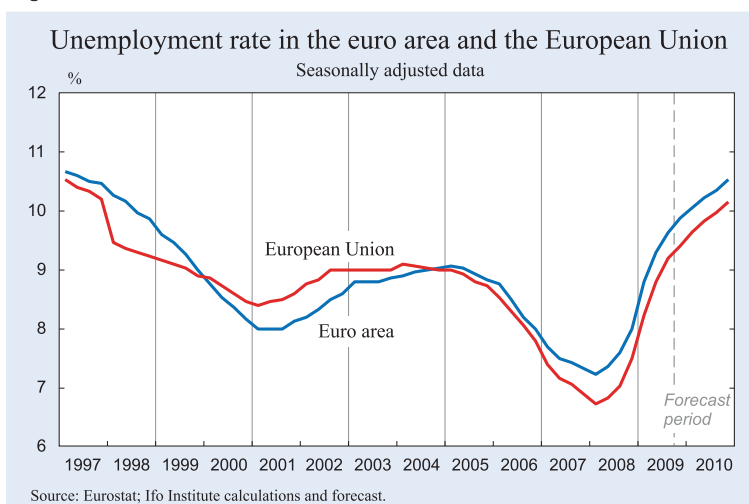


Employment, sectoral output and inflation

On account of its lagging characteristics with respect to the business cycle, the labour market situation will further deteriorate in Europe. After having declined by a – considering the depth of the crisis – moderate 1.9 percent last year, the number of employees will continue to decrease by another 1.4 percent this year (see Figure 1.36). As a near mirror-image, the unemployment rate will continue to rise reaching an average of 10.3 and 9.9 percent in the euro area and the European Union, respectively (see Figure 1.37).

Developments of individual sectors throughout the crisis have been quite different. Their prospects also vary substantially. Fiscal stimulus packages almost always have – for political reasons – a focus on domestic markets. Although the economic crisis mainly

Figure 1.37



evolved within the export-oriented manufacturing and the domestic-oriented construction sectors, to a large extent only the latter could benefit from supportive government actions. As the turn-around in international trade seems to have been accomplished, this is, however, less clear for construction investment in Europe. Nevertheless, fiscal stimulus measures are bound to fade out, not least because of the sharply deteriorated public finance situation in many countries. This suggests that there will be a relative shift of economic problems away from the export-oriented sectors towards the domestic economy and in particular the construction sector.

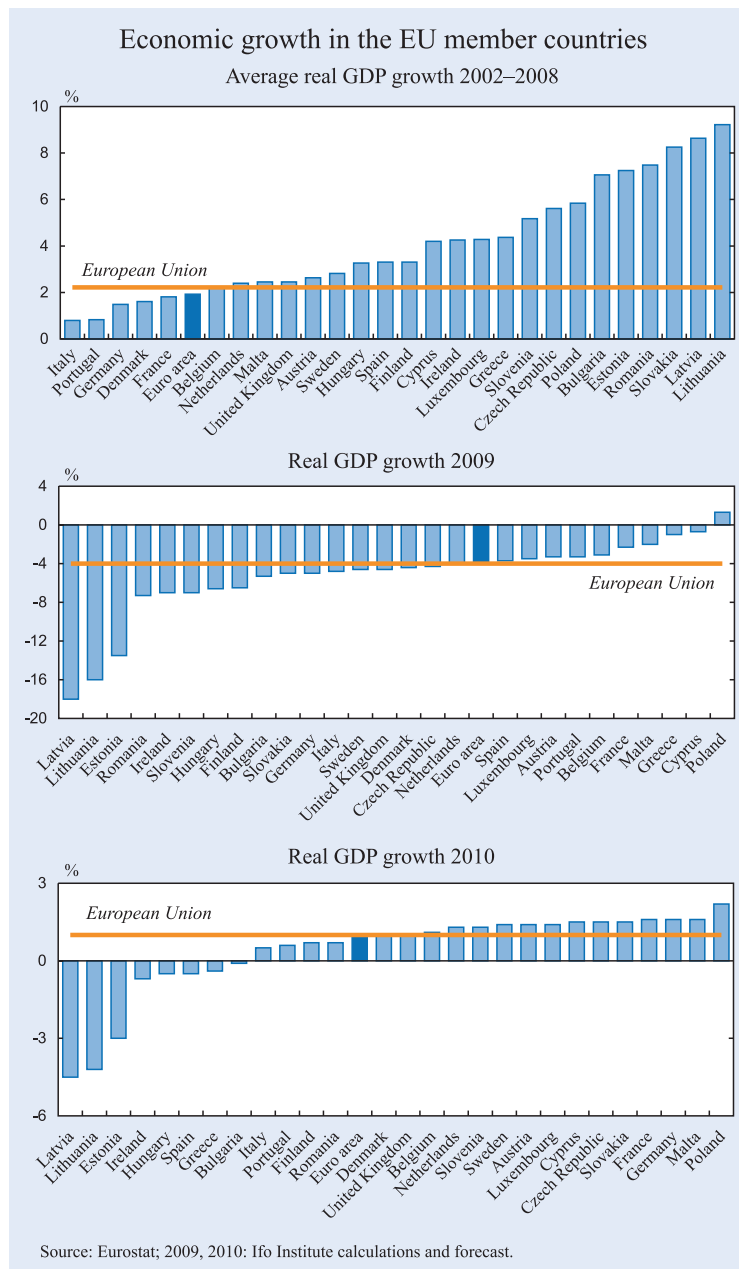
This is further supported by consumer behaviour. Whereas in some European countries consumption was able to act as a buffer during the crisis, labour market and income developments are likely to suppress that. As a consequence, and given that emerging markets are continuing to develop, export-oriented sectors are likely to regain some of their growth, whereas those that focus more on the US and EU consumers will suffer the aftermath of the economic crisis.

The increase in prices will all together accelerate somewhat, but – given low capacity utilisation rates and stable inflation expectations – remain restrained. The increase in consumer prices will be 1.2 percent in the European Union in 2010 (after 0.8 percent last year). In the euro area, the inflation rate will equal 0.9 percent in 2010 (after 0.3 percent last year).

Differences in output growth within Europe

Economic developments in *Germany* remain subdued in a historical perspective – albeit above the EU average (see Figure 1.38). Although endogenous business

Figure 1.38



cycle forces are gaining strength, the impact of economic stimulus measures will gradually fade. Furthermore, credit constraints will increase and labour market conditions deteriorate. The German economy remains weak and a self-supporting upswing is not obvious.

Given world economic developments, German exports will only grow moderately. Together with weak domestic developments, imports will show a similar profile and the external balance will only marginally contribute to economic growth. Machinery and equipment investments will only rise a little as capacity utilisation rates are still low and financial con-

straints increase. At the end of this year, the removal of degressive depreciation schemes might lead to a short and temporary uplift in investment activity. For the time being, infrastructure investments will continue to benefit from the fiscal stimulus measures. However, construction of commercial buildings will show negative growth this year. At the beginning of this year, disposable income and hence private consumption have received an impulse as child benefits and tax exemption for dependent children have been increased. However, this will only temporarily increase dynamics. Furthermore, car sales will drop further as the car scrappage scheme has ended. The savings rate remains high in view of labour market uncertainty and stagnant economic developments. Real GDP will increase by 1.6 percent this year.

Leading indicators in the *United Kingdom* give a positive but still restrained picture with respect to the recovery of private consumption and investment. Consumer confidence and the business climate have improved during the last months. However, they remain below their long-term averages. In spite of expansionary monetary policy, credit supply of banks remains restrictive largely because banks' balance sheet problems have still not been fully solved. This puts a burden on the recovery of residential and non-residential investments and purchases of durable consumption goods. Another restraint on private consumption is the high unemployment rate, which averaged 7.8 percent last year. Because labour productivity has fallen sharply, the unemployment rate is bound to increase further. It is estimated to reach 9.2 percent this year, on average. On the other hand, real-estate markets appear to have stabilised on account of better loan conditions and a somewhat positive wealth effect. All together the British economy will only slowly recover. Improved export possibilities due to the weak pound and the recovery of the world economy will allow the United Kingdom to enter into a stabilisation phase in which GDP will grow by 1.0 percent this year. The inflation rate will remain near its target value of 2 percent.

For the economic development in *France*, the increase of government consumption will be decisive during the first part of the year. Hence, the French economy will initially be able to revive itself, although business cycle prospects remain mixed. Industrial production has risen recently and also leading indicators have once more improved largely on account of positive expectations. However, the

labour market situation has continuously deteriorated. Furthermore, capacity utilisation rates remain at historically low levels after having fallen deeply at the beginning of last year. The initial increase of GDP might level out in the course of the year as a result of the phasing out of economic stimulus measures. Overall GDP will rise by 1.6 in 2010.

The *Italian* economy will continue to suffer from its low degree of competitiveness and therefore only marginally benefit from the recovery of world demand. Although the manufacturing industry has so far carried out a number of substantial restructuring measures which have led to a relative improvement in particular with respect to product quality, within the scope of this restructuring many firms depend on credit supply and therefore currently face two problems: A more restrictive credit supply by banks and at the same time the weakness of domestic and foreign demand. This year, production will recover only slowly. GDP in Italy will increase by 0.5 percent. The strongest positive impulses will come from private consumption. In addition, tax breaks on machinery and equipment investments are scheduled until the end of June. This will temporarily reduce the fall in investment. The slow recovery of the world economy will strengthen Italian exports.

The sharp decline in house prices and construction activity, the resulting substantial rise in unemployment, its weak international competitiveness and the scheduled restraint in fiscal policy will altogether constrain economic development in *Spain* during our forecasting horizon. The high unemployment rate, reaching 20 percent on average this year, will decrease wage income and thereby dampen private consumption. Furthermore, the risk of unemployment will encourage precautionary savings. The large number of unsold houses remains a considerable burden on the construction sector. Hence, a continuation of the recession is to be expected. Real GDP will decrease by 0.5 percent this year (after a 3.7 percent decline in 2009).

The consequences of the worldwide economic recession will retard economic recovery in the central and eastern European region more than in other regions in the world. Although, with the help of international financial institutions, a breakdown of financial and economic systems has been prevented, the necessary adaptations to the new situation are still on the agenda. A return to credit-based growth financed by foreigners seems unlikely in the years to come. Domestic

demand will remain weak in view of rising unemployment rates, reduced tax receipts, and the pressure to consolidate public finances. Altogether, GDP of the region will only grow by 1 percent this year. Caused by persistent, although weak, consumption growth, the two largest central and eastern European Union member countries, the Czech Republic and Poland, will be able to outperform the others and grow faster than the EU average. Especially the recessions in the three Baltic States, Estonia, Latvia and Lithuania, will remain deep.

References

Bernanke, B. and C. Lown (1991), "The Credit Crunch", *Brookings Papers on Economic Activity* 2, 205–47.

Bloom, N. and M. Floetotto (2009), "The recession will be over sooner than you think", www.voxeu.org, 12 January 2009.

Düwel, C., H. Rottmann and T. Wollmershäuser (2010), "A Micro Data Approach to the Identification of Credit Crunches", Working Paper, Ifö Institute for Economic Research.

Girouard, N. and C. André (2005), "Measuring Cyclically-adjusted Budget Balances for OECD Countries", OECD Economics Department Working Papers 434.

IMF (2009), *Global Financial Stability Report: Navigating the Financial Challenges Ahead*, October 2009, IMF, Washington, Chapter 1.

Appendix 1:
Forecasting tables

Table A.1

GDP growth, inflation and unemployment in various countries

	Share of total GDP in%	GDP growth			CPI inflation			Unemployment rate ^{d)}		
		in %								
		2008	2009	2010	2008	2009	2010	2008	2009	2010
EU27	34.0	0.8	- 4.0	1.0	3.5	0.8	1.2	7.0	9.0	9.9
Euro Area	25.1	0.6	- 4.0	1.0	3.3	0.3	0.9	7.6	9.4	10.3
Switzerland	0.9	1.8	- 2.0	1.1	2.4	- 0.5	0.5	3.5	3.8	4.4
Norway	0.8	2.1	- 1.4	2.0	3.8	2.4	1.7	2.5	3.5	3.7
Western and Central Europe	35.8	0.9	- 3.9	1.0	3.5	0.8	1.2	6.9	8.8	9.7
US	26.7	0.4	- 2.4	2.4	3.8	- 0.4	1.6	5.8	9.2	9.5
Japan	9.1	- 0.7	- 5.3	1.0	1.4	- 1.3	- 0.4	4.0	5.3	5.8
Canada	2.8	0.4	- 2.4	2.2	2.4	0.3	1.6	6.1	8.3	8.7
Industrialised countries total	74.4	0.5	- 3.5	1.6	3.3	0.1	1.2	6.1	8.4	9.1
Newly industrialised countries										
Russia	3.1	5.6	- 8.0	1.5	.	.	.	.	.	.
China and Hongkong	8.4	8.7	7.8	8.5	.	.	.	.	.	.
India	2.2	7.3	6.1	6.8	.	.	.	.	.	.
East India ^{a)}	5.0	3.0	- 1.5	3.5	.	.	.	.	.	.
Latin America ^{b)}	6.9	3.7	- 2.2	3.1	.	.	.	.	.	.
Newly industrialised countries total	25.6	5.8	1.2	5.1	.	.	.	.	.	.
Total ^{c)}	100.0	1.8	- 2.3	2.5	.	.	.	.	.	.
World trade, volume	-	-	- 11.0	5.0	.	.	.	.	.	.

^{a)} Weighted average of Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand. Weighted with the 2006 GDP levels in US dollars. - ^{b)} Weighted average of Argentina, Brasil, Chile, Columbia, Mexico, Peru, Venezuela. Weighted with the 2006 GDP levels in US dollars. - ^{c)} Sum of the listed groups of countries. Weighted with the 2008 GDP levels in US dollars. - ^{d)} Standardised unemployment rate.

Source: EU; OECD; IMF; National Statistical Offices; 2009 and 2010: forecasts by the EEAG.

Table A.2

GDP growth, inflation and unemployment in European countries

	Share of total GDP in%	GDP growth			Inflation ^{a)}			Unemployment rate ^{b)}		
		in %								
		2008	2009	2010	2008	2009	2010	2008	2009	2010
Germany	20.0	1.3	-5.0	1.6	2.8	0.2	0.6	7.3	7.5	7.9
France	15.6	0.4	-2.3	1.6	3.2	0.1	0.8	7.9	9.6	10.2
Italy	12.6	-1.0	-4.8	0.5	3.5	0.8	1.1	6.8	7.7	8.8
Spain	8.7	0.9	-3.7	-0.5	4.1	-0.3	0.9	11.4	18.5	20.0
Netherlands	4.8	2.0	-4.0	1.3	2.2	1.0	1.2	2.8	3.5	5.0
Belgium	2.8	1.0	-3.1	1.1	4.5	0.0	1.1	7.0	8.0	9.1
Austria	2.3	2.0	-3.3	1.4	3.2	0.4	1.0	3.9	4.6	5.7
Greece	1.9	2.0	-1.0	-0.4	4.2	1.3	1.5	7.7	9.6	11.0
Finland	1.5	1.0	-6.5	0.7	3.9	1.6	1.4	6.4	8.3	9.5
Ireland	1.5	-3.0	-7.0	-0.7	3.1	-1.7	-0.3	6.0	12.0	13.6
Portugal	1.3	0.0	-3.3	0.6	2.6	-0.9	1.2	7.8	9.7	10.6
Slovakia	1.3	6.2	-5.0	1.5	3.9	0.9	1.9	9.5	11.6	12.3
Slovenia	0.3	3.5	-7.0	1.3	5.6	0.9	1.7	4.4	5.9	6.8
Luxembourg	0.3	0.0	-3.5	1.4	4.1	0.0	1.6	4.9	6.3	7.6
Cyprus	0.1	3.6	-0.7	1.5	4.4	0.2	2.3	3.6	5.4	6.1
Malta	0.0	2.1	-2.0	1.6	4.7	1.9	2.0	6.0	7.2	9.0
Euro area^{c)}	74.2	0.6	-4.0	1.0	3.3	0.3	0.9	7.6	9.4	10.3
United Kingdom	14.6	0.5	-4.6	1.0	3.7	2.1	1.6	5.6	7.8	9.2
Sweden	2.6	-0.2	-4.6	1.4	3.4	1.9	2.0	6.3	8.4	9.1
Denmark	1.9	-0.9	-4.4	1.0	3.6	1.1	1.5	3.4	5.9	6.4
EU 19^{c)}	93.3	0.6	-4.1	1.0	3.3	0.6	1.0	7.1	9.0	10.0
Poland	2.9	5.0	1.3	2.2	4.2	4.0	2.5	7.1	8.2	8.5
Czech Republic	1.2	2.5	-4.3	1.5	6.3	0.6	1.6	4.4	6.5	7.2
Romania	1.1	7.3	-7.3	0.7	7.9	5.6	3.3	5.8	7.0	8.1
Hungary	0.8	0.6	-6.6	-0.5	6.1	4.0	3.8	7.8	9.8	10.6
Lithuania	0.3	2.8	-16.0	-4.2	11.1	4.2	2.0	5.9	14.5	17.0
Bulgaria	0.3	6.0	-5.3	-0.1	12.0	2.5	2.7	5.6	7.0	8.1
Latvia	0.1	-4.6	-18.0	-4.5	15.3	3.3	4.2	7.5	18.1	20.0
Estonia	0.1	-3.6	-13.5	-3.0	10.6	0.2	1.2	5.6	14.5	16.5
EU 8	6.7	4.1	-3.5	0.9	6.3	3.5	2.6	6.5	8.6	9.4
EU 27^{c)}	100.0	0.8	-4.0	1.0	3.5	0.8	1.2	7.0	9.0	9.9

^{a)} Harmonised consumer price index (HCPI). – ^{b)} Standardised unemployment rate. – ^{c)} Sum of the listed countries.

Source: EUROSTAT; OECD; IMF; 2008, 2009, 2010: forecasts by the EEAG.

Table A.3

Key forecast figures for the euro area

	2007	2008	2009	2010
	Percentage change over previous year			
Real gross domestic product	2.7	0.6	-4.0	1.0
Private consumption	1.5	0.4	-1.0	0.4
Government consumption	2.3	2.0	2.4	1.7
Gross fixed capital formation	4.7	-0.5	-10.0	-1.5
Net exports ^{a)}	0.4	0.0	-1.0	0.4
Consumer prices ^{b)}	2.1	3.3	0.3	0.9
	Percentage of nominal gross domestic product			
Government fiscal balance	-0.6	-2.0	-6.4	-7.0
	Percentage of labour force			
Unemployment rate ^{c)}	7.5	7.6	9.4	10.3

^{a)} Contributions to changes in real GDP (percentage of real GDP in previous year). – ^{b)} Harmonised consumer price index (HCPI). – ^{c)} Standardised unemployment rate.

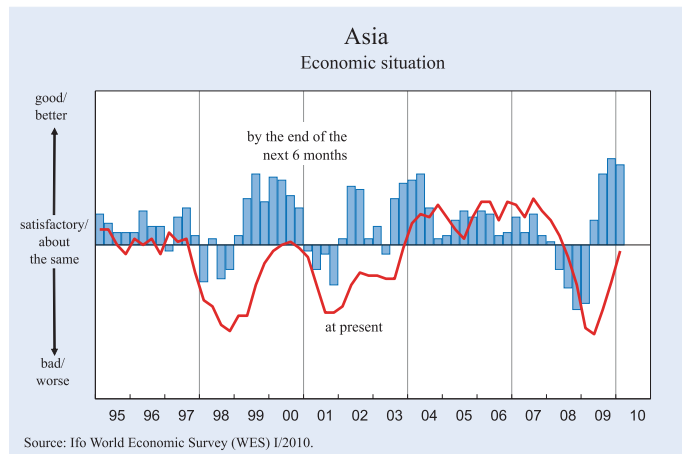
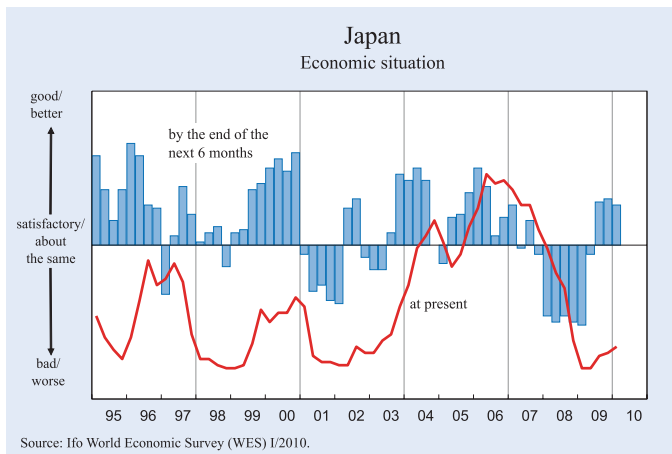
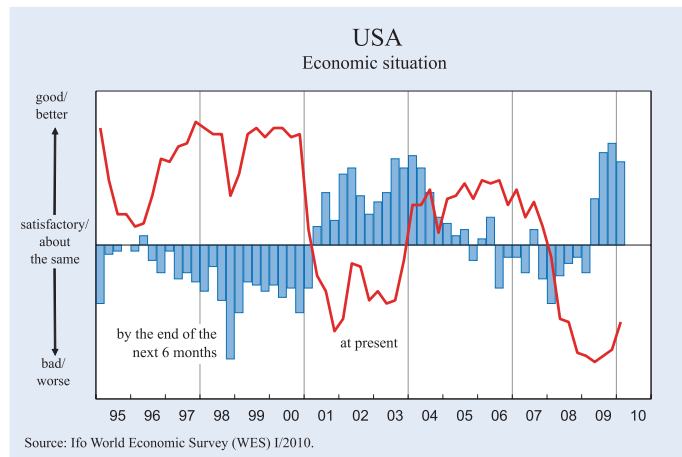
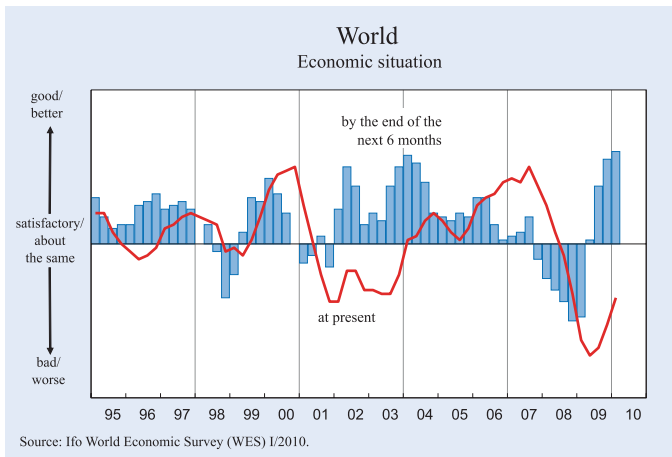
Source: Eurostat; 2009, 2010 and 2010: forecasts by the EEAG.

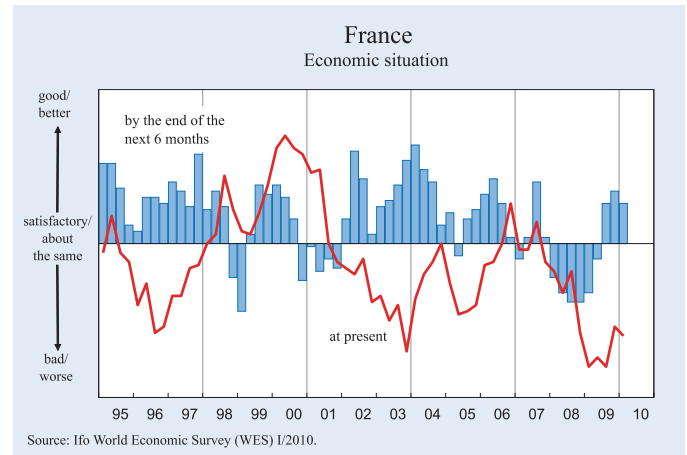
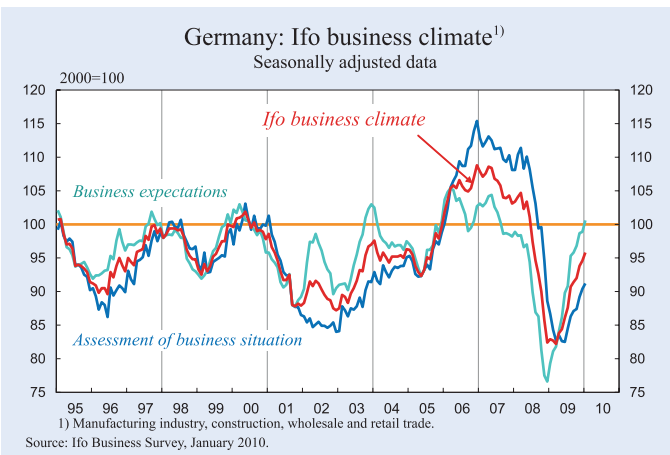
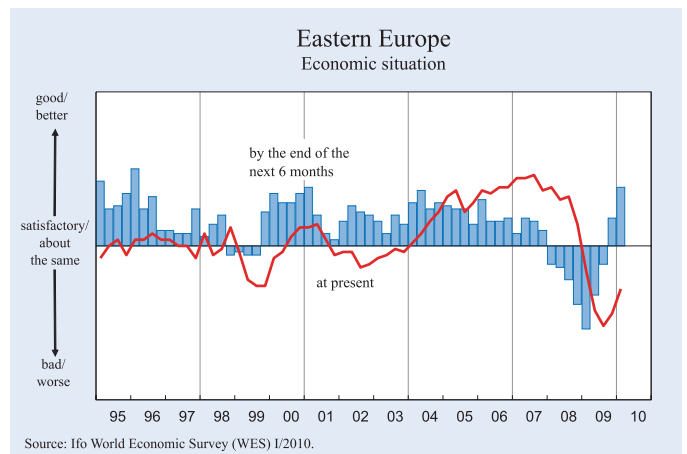
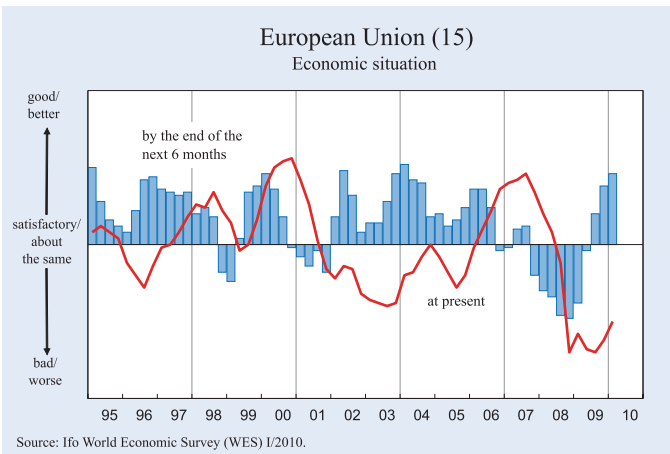
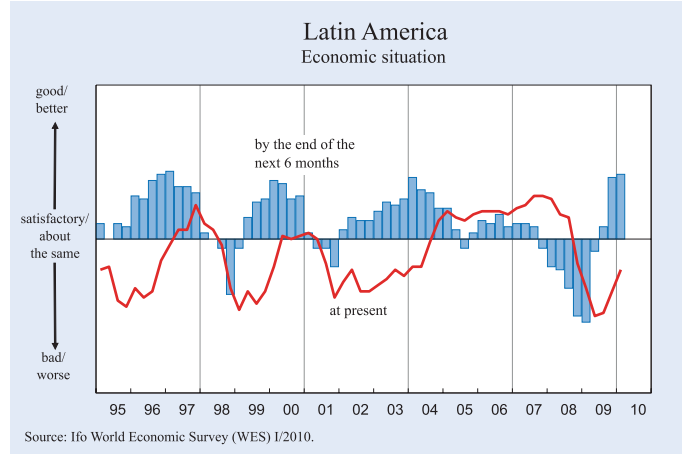
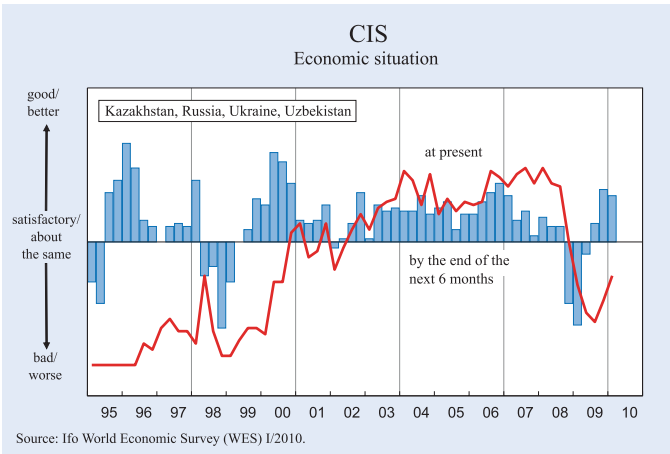
**Appendix 2:
Ifo World Economic Survey (WES)**

The Ifo World Economic Survey (WES) assesses worldwide economic trends by polling transnational as well as national organisations worldwide about current economic developments in the respective country. This allows for a rapid, up-to-date assessment of the economic situation prevailing around the world. In 2009, 1,026 economic experts in 88 countries were polled. WES is conducted in co-operation with the International Chamber of Commerce (ICC) in Paris. The survey questionnaire focuses on qualitative information: on assessment of a country's general economic situation and expectations regarding important economic indicators. It has proved to be a useful tool,

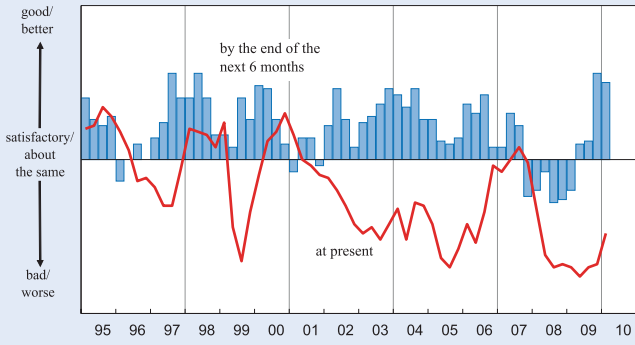
since economic changes are revealed earlier than by traditional business statistics. The individual replies are combined for each country without weighting. The "grading" procedure consists in giving a grade of 9 to positive replies (+), a grade of 5 to indifferent replies (=) and a grade of 1 to negative (-) replies. Grades within the range of 5 to 9 indicate that positive answers prevail or that a majority expects trends to increase, whereas grades within the range of 1 to 5 reveal predominantly negative replies or expectations of decreasing trends. The survey results are published as aggregated data. The aggregation procedure is based on country classifications. Within each country group or region, the country results are weighted according to the share of the specific country's exports and imports in total world trade.

IFO WORLD ECONOMIC SURVEY (WES)



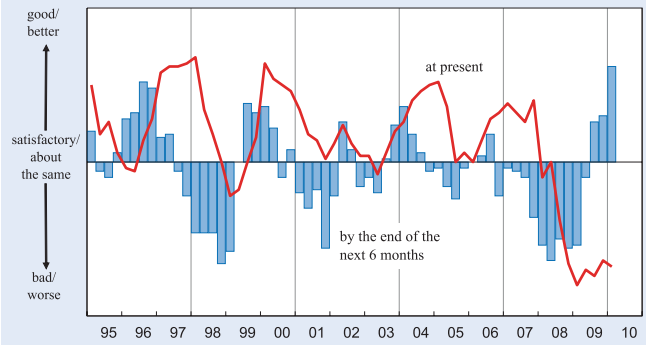


Italy
Economic situation



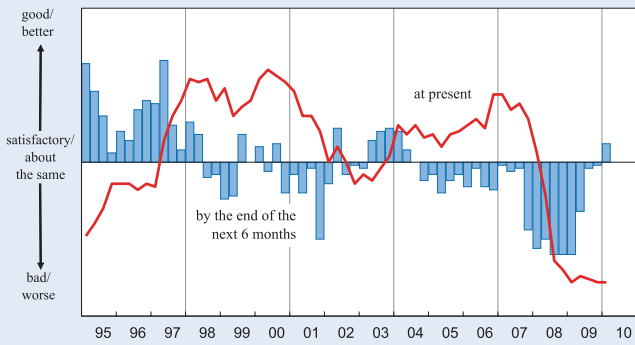
Source: Ifo World Economic Survey (WES) 1/2010.

United Kingdom
Economic situation



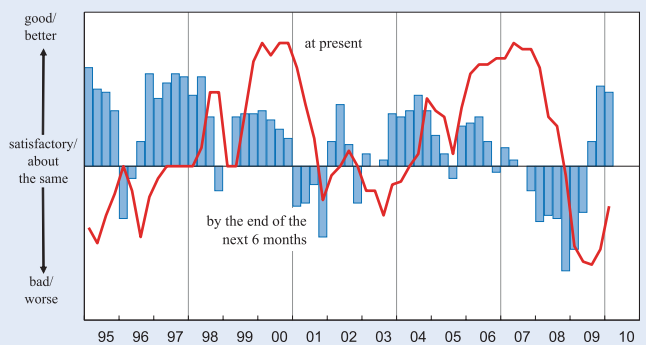
Source: Ifo World Economic Survey (WES) 1/2010.

Spain
Economic situation



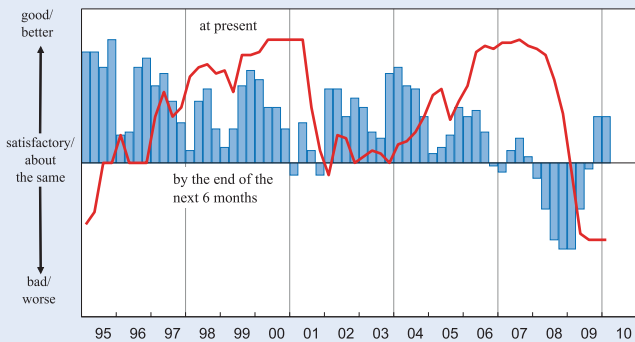
Source: Ifo World Economic Survey (WES) 1/2010.

Sweden
Economic situation



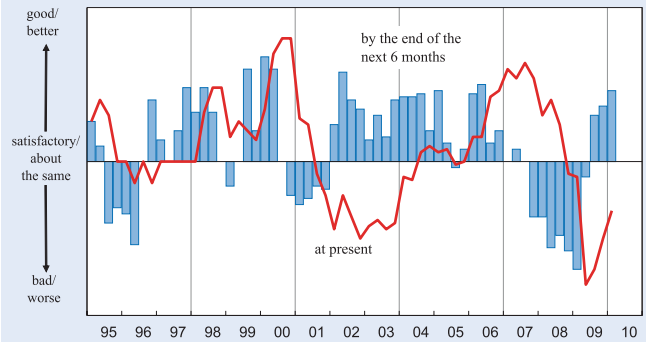
Source: Ifo World Economic Survey (WES) 1/2010.

Finland
Economic situation

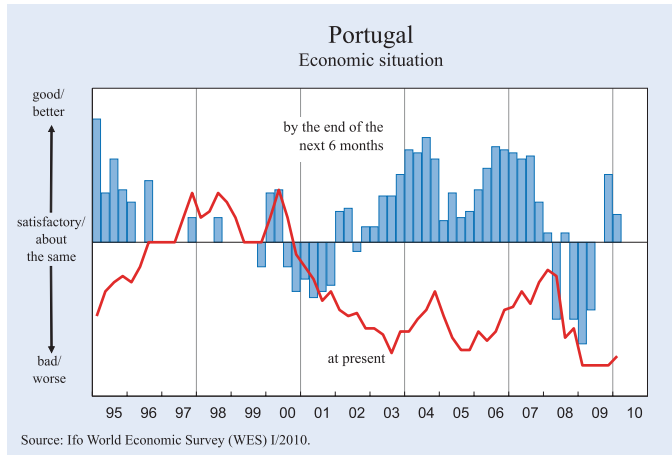
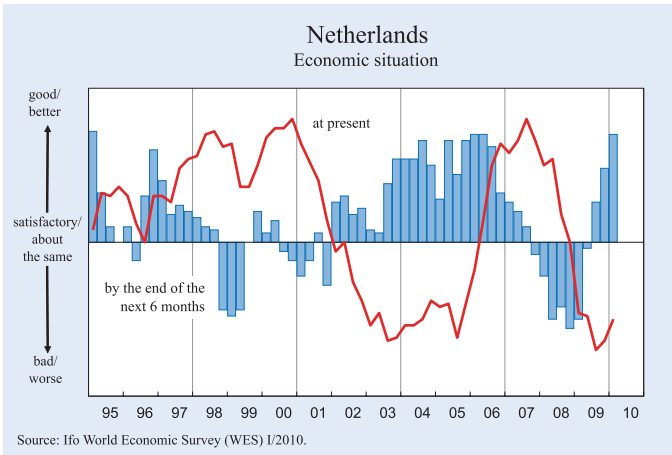
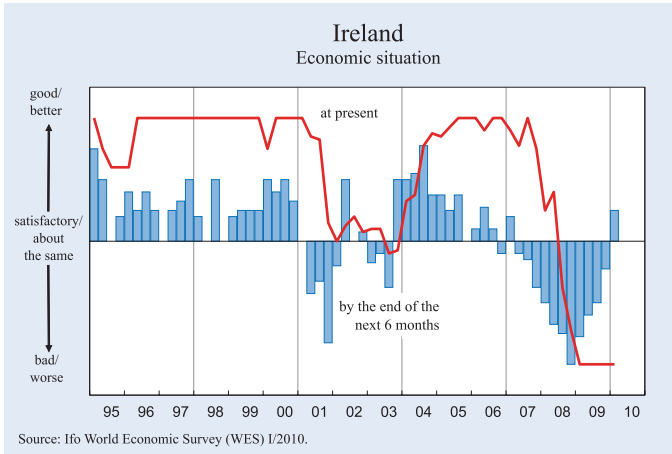
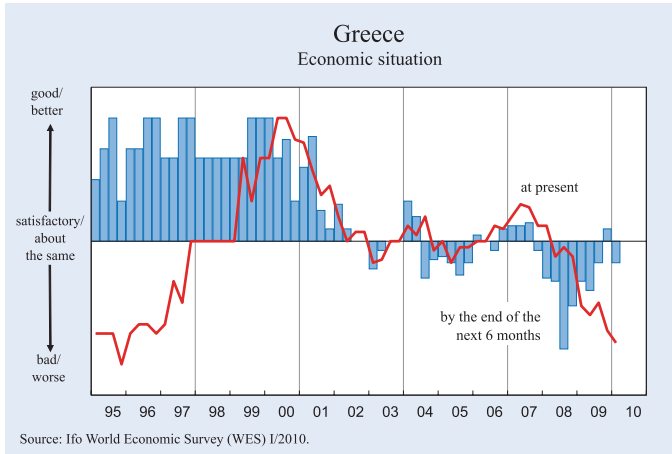
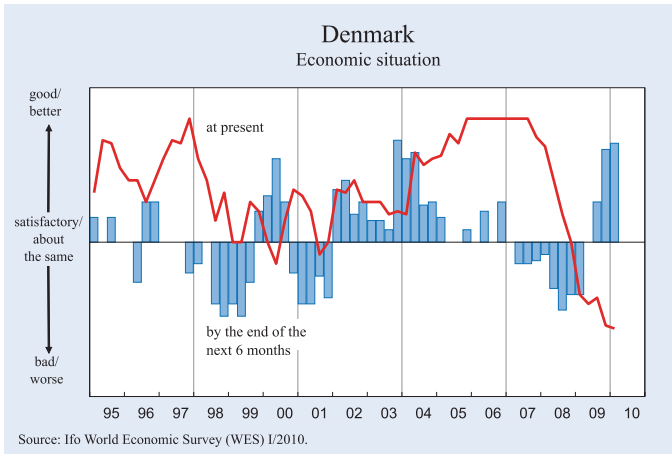
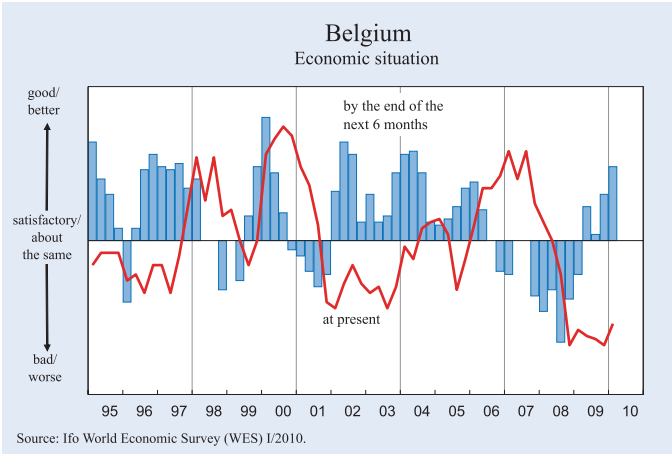


Source: Ifo World Economic Survey (WES) 1/2010.

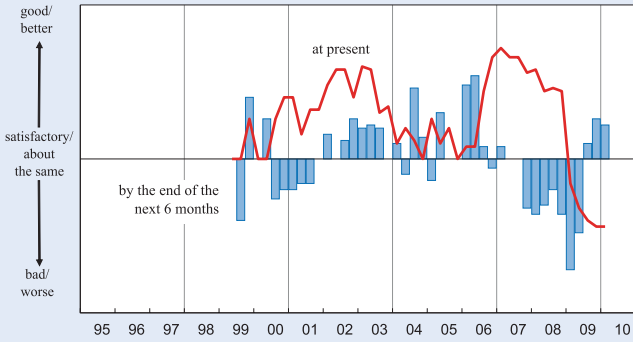
Austria
Economic situation



Source: Ifo World Economic Survey (WES) 1/2010.

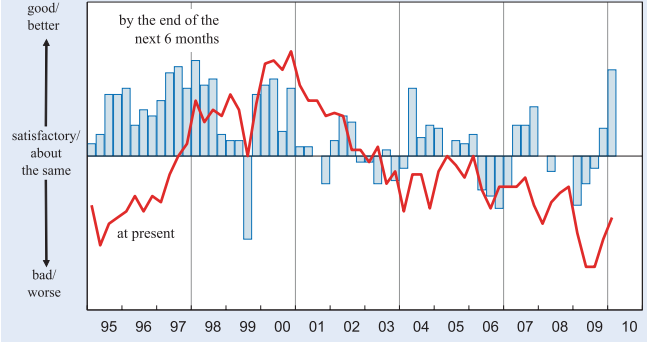


Slovenia
Economic situation



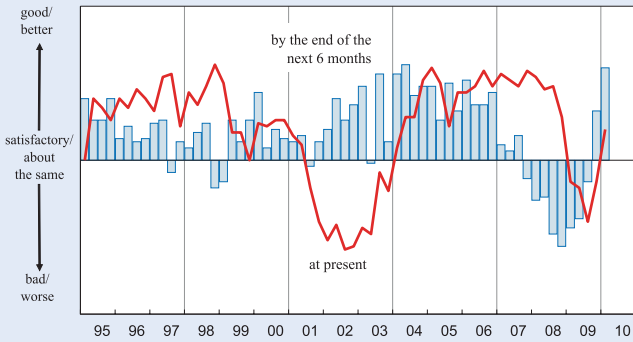
Source: Ifo World Economic Survey (WES) 1/2010.

Hungary
Economic situation



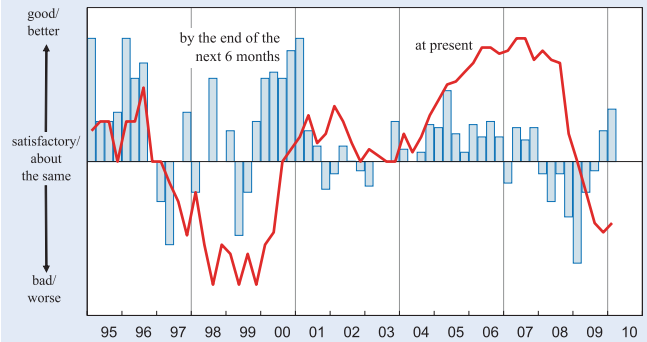
Source: Ifo World Economic Survey (WES) 1/2010.

Poland
Economic situation



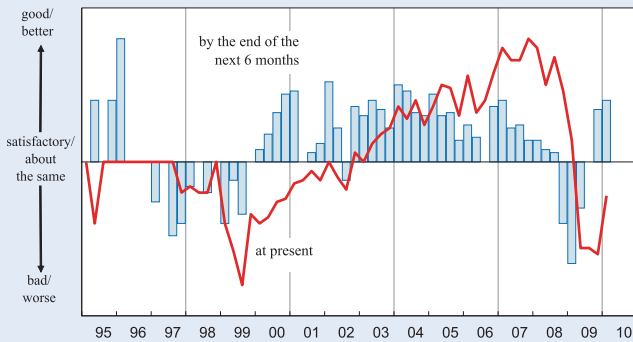
Source: Ifo World Economic Survey (WES) 1/2010.

Czech Republic
Economic situation



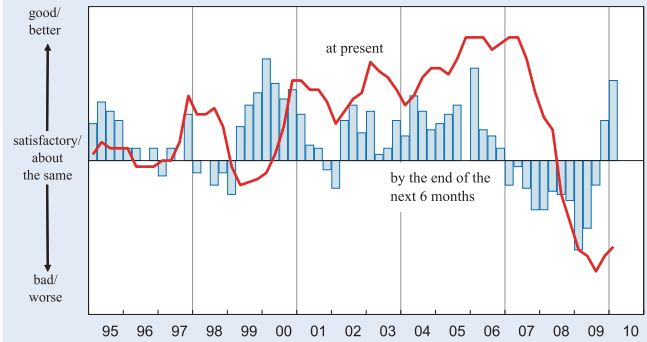
Source: Ifo World Economic Survey (WES) 1/2010.

Slovak Republic
Economic situation

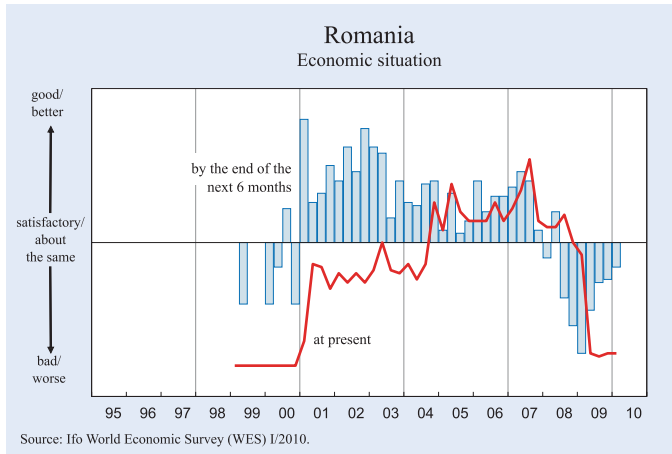
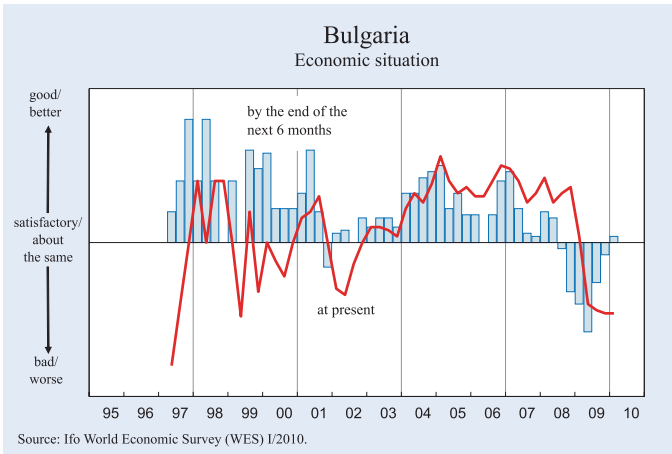
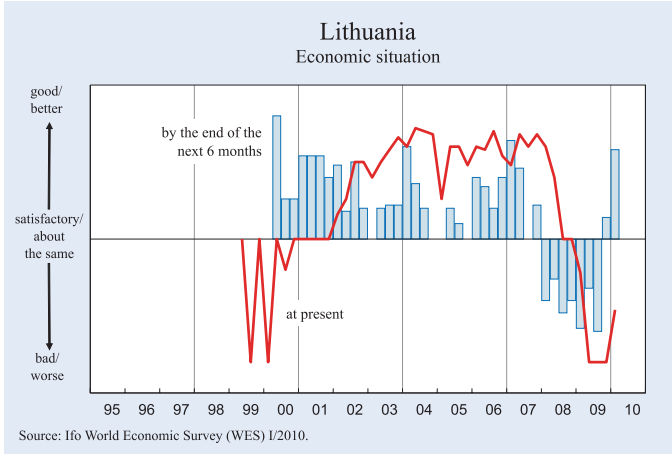
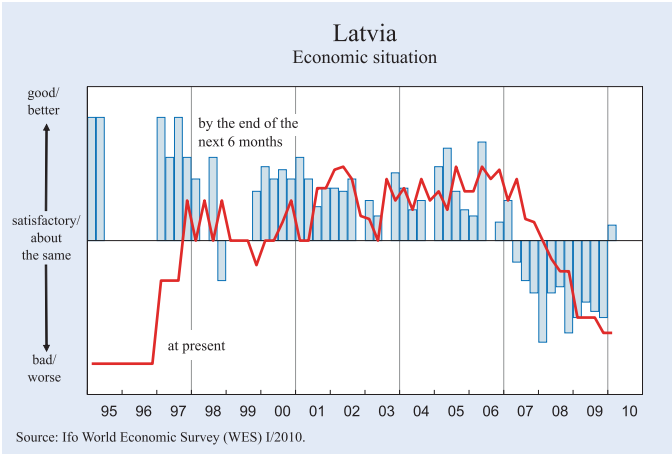


Source: Ifo World Economic Survey (WES) 1/2010.

Estonia
Economic situation



Source: Ifo World Economic Survey (WES) 1/2010.



A TRUST-DRIVEN FINANCIAL CRISIS. IMPLICATIONS FOR THE FUTURE OF FINANCIAL MARKETS

Introduction

There are many important dimensions of the, hopefully overcome, financial crisis that have appeared in the vast debate that it has originated: its unprecedented size at least in the post World War II period; the fact that, contrary to many other financial crises (but similar to the 1929 collapse) it originated and had its epicenter in the US; its nature, the ingredients and proximate causes that triggered it: too much financial deregulation?; too relaxed monetary policy?; too much concentration of power in the hands of the banks following the impetuous wave of mergers during the late 1990s that amplified moral hazard and risk taking? All these factors are likely to have played a very important role in triggering the crisis but with them alone it would be hard to explain the sudden collapse in economic activity that took place after October 2008, at least within the framework of a standard macroeconomic model: though the economy was slowing down, in summer 2008, there was no relevant shock to productivity to justify the observed subsequent drop in economic activity; interest rates were low and demand relatively sustained. We argue that one important factor that can explain the extremely rapid deterioration in economic activity was the collapse in trust. Starting in summer 2008 something very important was destroyed: first the trust that intermediaries have in each other and then the trust that investors have in the financial industry. Trust – the belief a person has that his counterpart in a transaction will not take advantage of him – is normally ignored in standard economic models, perhaps on the presumption that external bodies, such as the police and courts, can enforce any promise and thus effectively protect contracting parties from each other abuses. But this is rarely the case: because legal protection is often imperfect and costly it leaves many open gaps which are typically filled in by trust. Thus, without trust, financing disappears and economic

activity suddenly stops. This is what happened in October 2008 and the subsequent months.

This chapter documents the unprecedented drop in trust in financial markets and financial intermediaries, both in the US and in Europe, that has taken place since the emergence of the crisis. It will be argued that the collapse in trust played a crucial role in the crisis as it led those who distrusted to run on their banks. This role is distinct from that played by the drop in confidence about the solvency of financial institutions and their ability to repay their obligations – the other factor that froze up financial markets and led investors to run on banks. The collapse in trust was in fact provoked by the revelation of the opportunistic behaviours that the unfolding of the crisis brought to light, of which the Bernard Madoff fraud is emblematic, and has contributed to shed a dark light on the whole financial industry.

The destruction of trust inherited from the crisis has important implications for the future of financial markets, including the demand for financial products and investors' portfolio choices, their reliance on financial intermediaries when making financial decisions and the demand for regulation. It will be argued that unless remedies are adopted to rebuild trust, these consequences will most likely be long lasting as self-construction of trust evolves slowly. Accordingly, the chapter discusses possible policies to rebuild trust some involving non-imposed changes in behaviour in the financial industry, others involving specific regulatory interventions.

The disappearance of trust

Measuring trust

To monitor the evolution of trust during this financial crisis, Northwestern University and the University of Chicago conducted a telephone survey on a representative sample of about 1,000 American households, known as the Financial Trust Index Survey (FTIS). The first survey was launched in December 2008, three months after the collapse of Lehman Brothers;

three other surveys were fielded subsequently at a quarterly frequency. In this study we will be drawing from the FTIS and complement the evidence with data from other countries when available.¹ In the FTIS one adult respondent in each household was randomly contacted and asked whether they were in charge of household finances, either alone or together with a spouse. Only individuals who claimed such responsibility are included in the survey. A first set of questions asked how much the respondent trusts certain types of people or institutions with a focus on financial institutions such as the stock market, banks and bankers, brokers, pensions funds. Answers were provided on a scale ranging from 1 to 5, where 1 means “I do not trust at all” and 5 means “I trust completely”. Since the survey was started after the crisis we lack a level of trust in financial intermediaries and markets before the crisis to compare with and to document how trust in these different institutions has evolved as a consequence of the crisis. To deal with this issue we combine the trust responses from the FTIS with comparable data from the General Social Survey (GSS), which for many years has been asking people whether they have a great deal of confidence in banks and financial institutions.² Since the GSS question embraces both banks and financial institutions, to make the FTIS answers as comparable as possible to the GSS we pool together the answers people provide to trust in banks, in brokers, in mutual funds and the stock market and compute the fraction of people that trust these institutions completely. We then append these figures to the GSS series that refer to the pre-crisis years. Figure 2.1 documents the dramatic drop in trust vis-à-vis banks and financial markets in the latest part of 2008 and the beginning of 2009. Though the index shows swings that reflect the business cycles, since 1975 the fraction of people that trust banks and financial markets has never been as low as during the 2008–2009 crisis. Only 5 percent report having full trust in banks, brokers, mutual funds or the stock market while the

Figure 2.1

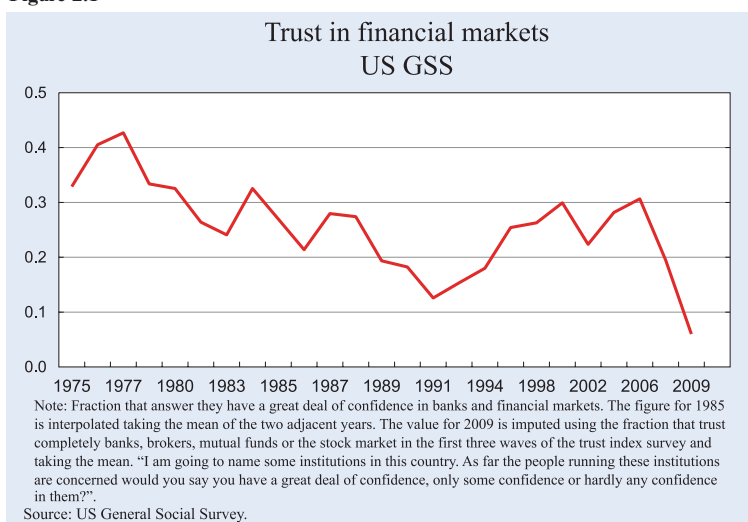


figure had been as high as 40 percent in the late 1970s and was around 30 percent just before the crisis.³

As an alternative way to highlight the drop in trust towards financial markets and intermediaries, we compute from the GSS the average trust that people have in banks and financial markets relative to the trust they have in other people in general (what is known as generalized trust) over the years prior to the crisis covered by the GSS (1977–2007). This figure is around 1.5 meaning that Americans used to trust banks and financial markets 50 percent more than they trust a generic member of the US population. This conforms with intuition and common sense: after all we rely on banks and other financial institutions as custodians of our savings and not on a random member of the population.

Since the FTIS also asks people how much they trust a generic American (that is it measures generalised trust in unknown people), we compute relative trust in banks, bankers, brokers, mutual funds and the stock market respectively for the three waves of the FTIS and report it in Table 2.1. Interestingly, after the crisis people trust banks as much as they trust a random citizen, and trust mutual funds and the stock market much less than they trust a random individual. This is in sharp contrast with the higher trust they had in banks and financial markets relatively to unknown people before the crisis, suggesting that even if trust fell in general, it is trust in finance that has collapsed. Furthermore, the table shows that investors distin-

¹ The first questionnaire for the FTIS was designed by Luigi Guiso, Paola Sapienza and Luigi Zingales. Detailed information on the survey is available at <http://www.financialtrustindex.org/>.

² The wording of the question asked is “I am going to name some institutions in this country. As far as the people running these institutions (banks and financial institution in this case) are concerned, would you say you have a great deal of confidence, only some confidence or hardly any confidence in them?”

³ Notice that the GSS question refers to how much trust people have in those running financial institutions rather than to the institution itself. Thus it perhaps matches better with trust in bankers and brokers in the FTIS. If we replace trust in bankers and brokers in Figure 2.1, the drop in trust would be even more pronounced.

Table 2.1
Relative trust levels over time

	Wave I	Wave II	Wave III
Banks	0.99	0.94	1.00
Bankers	0.88	0.84	0.92
Brokers	0.71	0.69	0.72
Mutual funds	0.86	0.87	0.88
Stock market	0.70	0.71	0.71
Government	0.77	0.78	0.83
Large corporations	0.71	0.67	0.73
The Fed	0.77	0.78	0.84

The table shows the level of trust towards the specified entity relatively to the level of trust towards people on general.

Source: Elaborations on the FTIS.

guish between trust in financial institutions and trust in the people that manage those institutions. In fact trust in bankers is much lower, relatively to trust in people in general, than is trust in banks.

Why is trust in bankers much lower than trust in banks? One reason is that bankers are considered to be worse and less reliable than the average person compared to the institution they work for, as they may damage people more than the institution. Alternatively, the incentive structure within banks is believed to lessen the trustworthiness of bankers making the banks more reliable than the bankers. At any rate, what this suggests is that the fall in trust during the crisis does not simply reflect the fear aroused in autumn 2008 that banks could become insolvent: if that was all the measure of trust we were picking, we would see the opposite pattern with trust in banks falling more than trust in bankers, which does not seem to be the case from Table 2.1.

There are two other points to notice. First, not only do people trust other individuals more than they trust bankers and financial institutions (Table 2.1), but investors trust other people more than they trust the government or the Fed! Second, there is very little change in trust in financial markets over the whole period between the end of 2008 and autumn 2009, suggesting there is persistence in the fall of trust.

As another way to look at the changes in trust, the FTIS has elicited self-assessed changes by asking people how much their level of trust changed in the three months after the interview. What emerges is that a number of people, while still confiding in other people, dramatically lost confidence in financial institutions following the collapse of Lehman Brothers. This is shown in Table 2.2 for banks, the stock market and also the government (the three institutions for which

Table 2.2
Changes in trust over time in the US

<i>A. Banks</i>			
	Wave I	Wave II	Wave III
Decreased a lot	24	25	15
Decreased a little	31	28	26
No change	40	41	50
Increased a little	4	4	7
Increased a lot	1	2	2

<i>B. Stock Market</i>			
	Wave I	Wave II	Wave III
Decreased a lot	46	36	28
Decreased a little	22	23	21
No change	29	36	41
Increased a little	2	4	8
Increased a lot	1	2	1

<i>C. The government</i>			
	Wave I Dec 08	Wave II March 09	Wave III June 09
Decreased a lot	32	29	25
Decreased a little	23	15	15
No change	35	27	33
Increased a little	7	18	17
Increased a lot	3	12	10

The table shows people's responses on how much their trust towards the specified entity has changes over the three months before the interviews in the FTIS.

Source: Elaborations on data from the FTIS.

trust changes were asked). Trust in banks and the stock market has fallen either a lot or a bit in all three waves, though at a slowing pace in the last survey. On the other hand, very few report that their trust towards these financial institutions has improved either a lot or a bit. The change in trust towards the government instead follows a different pattern: it falls sharply in the first quarter after the collapse of Lehman Brothers, but starting in March 2009 opinions become more polarized: some people continue to lose confidence in the government while others raise their trust significantly – an heterogeneous reaction reflecting differences in opinions about the benefits of the policies adopted to contrast the crisis. Though the crisis originated in the US, the drop in trust is not limited to the US, but because the crisis was universal also the loss in confidence is likely to have spread out to all countries involved. Unfortunately, there is no worldwide survey to document it. The available evidence for specific countries, however, points in that direction.

Guiso, Sapienza and Zingales (2009) conducted a phone survey similar to the FTIS on a sample of customers of a large Italian bank (UniCredit) which was launched in June 2009. As in the US, also in this survey trust in financial markets has decreased substantially. When asked how their trust changed since the emergence of the crisis, 46 percent report they

have lowered their trust towards banks in general either by a lot or substantially, 47 percent have lowered their trust in bankers and 52 percent that their trust in the stock. These patterns are qualitatively very similar to the ones in the US, confirming that the drop in trust is very likely universal. Similar in sign but more contained in magnitude are the changes in trust towards banks reported in a survey of Austrian investors available before and after the crisis (Knell and Stix, 2009).

One interesting feature of the UniCredit survey on Italian investors is that it has a panel component, since people in the sample were interviewed also in 2007 when the financial crisis was not yet in sight. Since some questions were asked in both surveys it is possible to compare how they evolved over the crisis. In particular, participants in the survey were asked how much trust they have towards their own bank or financial advisor and answers, as before, are provided on a 1 (no trust) to 5 (full trust) scale. Not surprisingly, the level of trust towards one's own bank is higher than trust towards banks in general – a feature consistent with the idea that trust is a key feature in selecting the bank or financial advisor and that, as these people report, not all banks are equally reliable. Yet, compared to the year 2007, 34 percent of these investors have revised their trust levels towards their banks/advisor downwards. This clearly provides a lower bound of the actual fraction of those who lost trust in their banks/advisor since it was only possible to re-interview customers that stayed with the bank/advisor, not those who left because they lost confidence.

In sum, data from both sides of the Atlantic show that during the financial crisis there has been a dramatic drop in trust towards all segments of the financial system though the fall was stronger for some of them, particularly those segments involved in trading less familiar and ambiguous instruments such as mutual funds and stocks. The drop is considerable but more contained for banks. Besides the level of trust in financial markets and institutions, trust towards people in general has also fallen, implying that mistrust in finance has spilled over and generated mistrust in general. This feature can help explain the sudden drop in economic activity following the Lehman collapse: the fall in trust froze up not only financial exchanges but, due to the cited spill over, stopped also any other types of exchange that require trust. Remarkably, the fall in trust was so strong that after the crisis people show more trust towards a generic unknown individ-

ual than towards a bank or a banker, that is towards those institutions and people that should deserve to be trusted the most in light of the role they play as the custodians of our savings.

What do the trust measures measure?

What do our measures of trust reflect? All financial crises are characterized by a significant change in investors' beliefs and a loss of confidence. This financial crisis is no exception as confidence has dropped perhaps even more than in other crises. But there are two notions of confidence that matter: the first concerns the rise of pessimistic expectations about banks' ability to repay and to keep their commitments, i.e. the probability that a generic bank goes bankrupt. These beliefs obviously became more pessimistic during the crisis particularly after Lehman Brothers collapsed. But there is a second notion of confidence, which is the one we focus on here, that has to do with the emergence of diffused beliefs that financial intermediaries and the various players present in the financial market – brokers, bankers, financial advisor etc. – are less reliable than people thought them to be and so deserve less trust because it has become more likely that they act opportunistically and deceive investors.⁴ The first notion pertains to the probability that an investor may lose part or all of his investment because, due to the crisis, the *intrinsic riskiness* of investment has increased. The second notion concerns the risk involved in any financial contract because the investor delegates the bank/broker to manage his funds and the latter can manipulate the management to his own advantage, for example by charging commissions that are difficult to verify, hiding relevant information, shifting unwanted risks to the customers etc. This second type of risk is a social risk as it arises from the actions adopted by the counterpart in the exchange. Thus while the first type of risk concerns the solvency of the intermediary the second reflects the perceived trustworthiness of the financial intermediaries and their managers. The financial crisis has affected both but the trust measures shown in Figure 2.1 and Tables 2.1 and 2.2, though perhaps correlated with intrinsic risk, reflect the greater perceptions of an increased social risk that has deterio-

⁴ Of course the two notions are interwined and may not be independent of each other. If a bank solvency is at risk, managers may be more tempted to make profits by deceiving investors in order to avoid bankruptcy. On the other hand, dishonest behaviour when discovered may result in a loss of reputational capital that may force a bank into a solvency crisis as customers run away.

rated the relation between investors and financial intermediaries. Here we focus on this notion of confidence and show evidence that is consistent with the decrease in our measures of trust, reflecting a greater social risk.⁵

Why did trust fall?

Trust is the belief that an opponent in a relationship behaves accordingly to what he promised and does not take advantage of the person he is trading with. In other words it is the probability that person A trading with B attaches to the possibility that B will behave opportunistically and take advantage of him. Trust is thus A's probability that B will not "cheat". Obviously, when the business partner deviates from the promised behaviour, trust attitudes are revised downwards. The financial crisis, among other things, brought to light diffused opportunistic behaviour and some serious frauds. Following the collapse of Lehman Brothers many felt "cheated". People had been advised to invest in Lehman securities because they were remarkably safe; in fact up until a few months before the collapse, Lehman securities were highly rated by S&P.

One of the effects of the financial crisis has been that of revealing the existence of pervasive opportunistic behaviour in the financial industry and to have brought to light several cases of outright financial frauds that without the crisis investors would probably have discovered much later if at all. The Madoff fraud is the one that has received the greatest attention from the media and that will likely remain lodged in the minds of investors for many years to come. Many have focused on the unprecedented size of this fraud – half of a percentage point of GDP – often ignoring a much more important feature of this fraud

⁵ Notice that while adequate government interventions including monetary and fiscal policies such as the ones adopted during the crisis can successfully reduce intrinsic risk and stabilize assets prices, it is harder to rebuild the personalized trust that has been lost. This is because we learn about a person's trustworthiness by exchanging with him. But incentives to exchange are low when there is no trust, which slows learning and thus the revision of trust attitudes even when the effective trustworthiness of the partner in a transaction has increased. Thus, it is reasonable to expect that the fall in trust towards financial intermediaries will be long lasting.

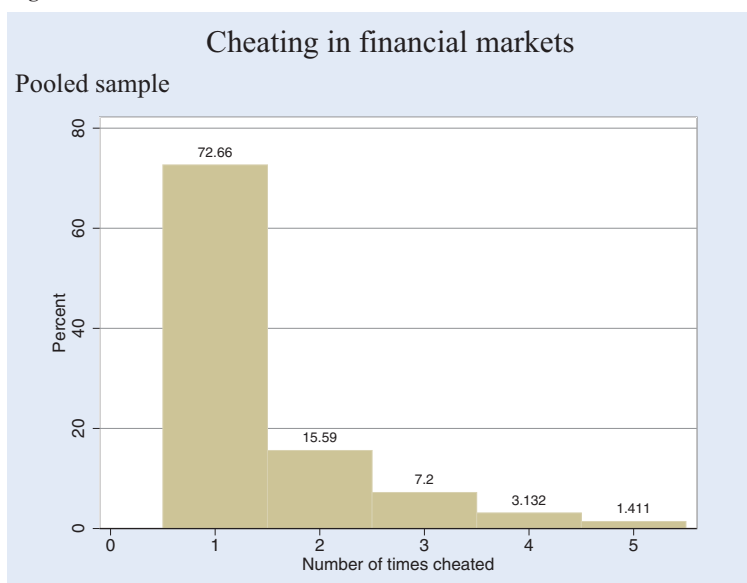
for the effect that it may have had on investors' trust towards financial markets and intermediaries: the fact that Bernard Madoff was an insider to the industry! An important professional market player and former Chairman of the NASDAQ Stock Exchange that had been running his Ponzi scheme for almost 20 years! It should not then be surprising that if such an insider and professional player can trick even quite expert investors (not only individuals but also institutions invested in Madoff's fund), non-professional investors will legitimately tend to think that other players in the financial industry play similar games, perhaps not as extreme as a Ponzi scheme and perhaps on a smaller scale.

But the crisis has uncovered many other cases where the intermediary failed to act in the investor's best interest: for instance, the holding by many investors in many countries of poorly diversified portfolios often recommended by their financial advisor, has exposed them to excessive risks that have resulted in effective losses during the crisis. The latter has made those risks manifest, leading investors to hold those who recommended the investments responsible for the losses. In all these cases it is very likely that investors have revised downwards their trust towards intermediaries and financial markets.

Trust and cheating: proving the link

To examine this link we rely on the second wave of the European Social Survey that was conducted in 2004, well before the crisis, and that reports infor-

Figure 2.2a



mation for a sample of individuals in each of the then 26 countries of the European Union on whether they were deceived over the recent past by a bank or insurance company, in the sense that they failed to offer them the best deal. Participants in the survey were asked: “How often, if ever, has this thing happened to you in the last five years? A bank or insurance company failed to offer you the best deal you were entitled to.” The respondent could answer in one of 5 ways – never, once, twice, 3 or 4 times or, finally, 5 times or more – which we code with the numbers 0 to 4. Figure 2.2a+b show the histogram of the answers for the pooled datasets (panel A) and for each country in the sample (panel B). Not surpris-

ingly, in all cases there is a spike at “never”, so that the vast majority of respondents report not having been cheated. However, there is a non-negligible fraction of people in all countries, varying between 9 and 32 percent, that report having been deceived one or more times by an intermediary. Though there could be problems with this measure (the exact meaning of a bank/insurance company having failed to offer the best deal may be subject to interpretation; true frauds may go unobserved for a long time, as in the Madoff case, and so the measure could be biased downward; but this could be balanced by the tendency to self attribute successes and to hold others responsible for failures, etc.), it is instructive to

Figure 2.2b

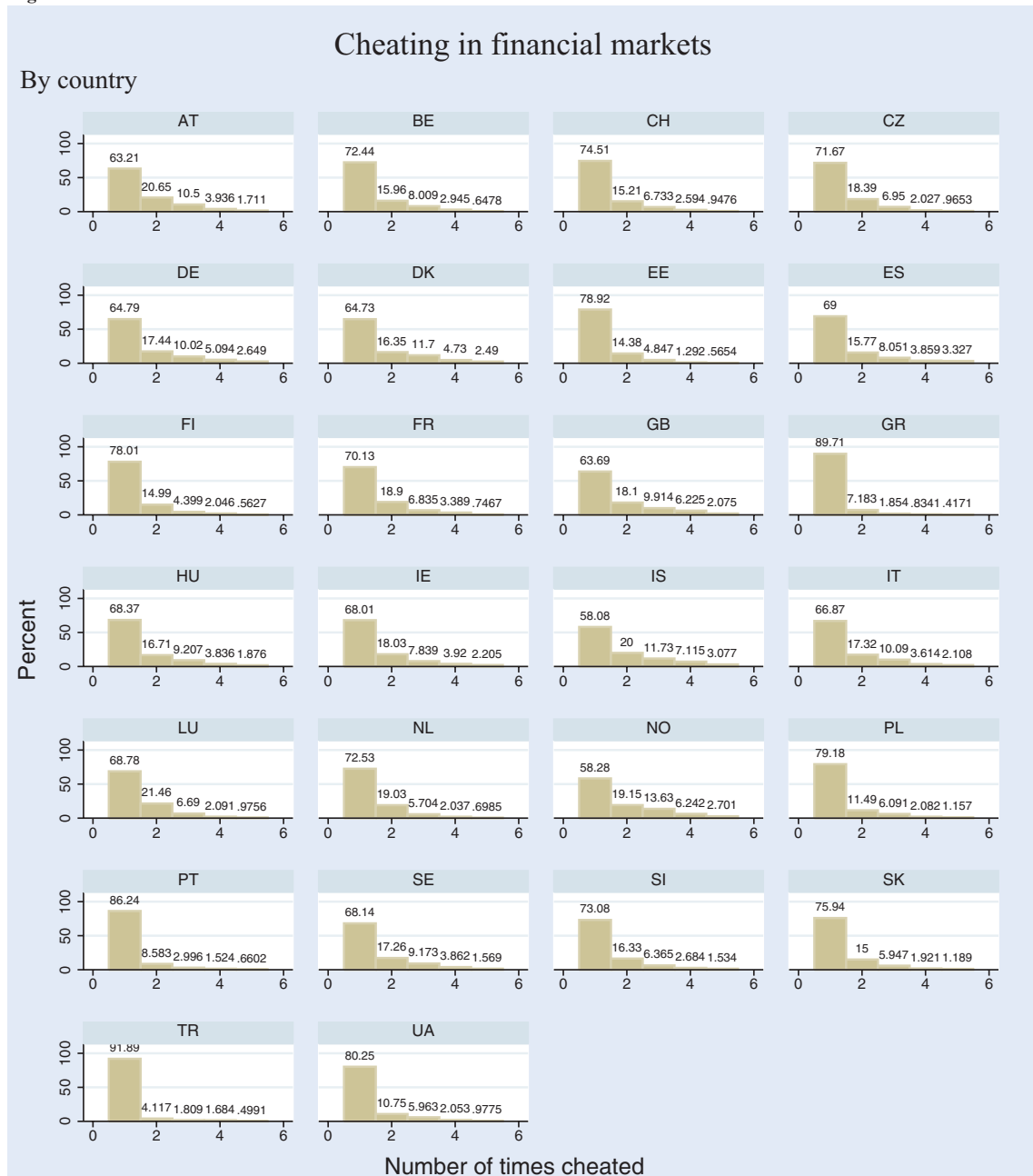
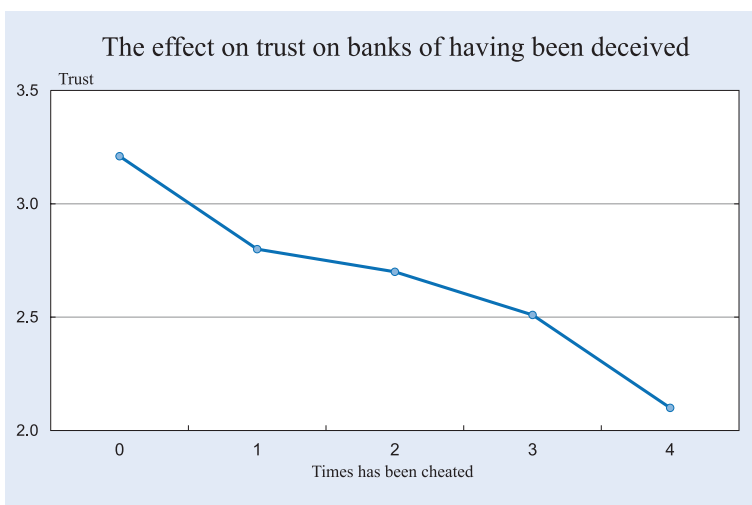
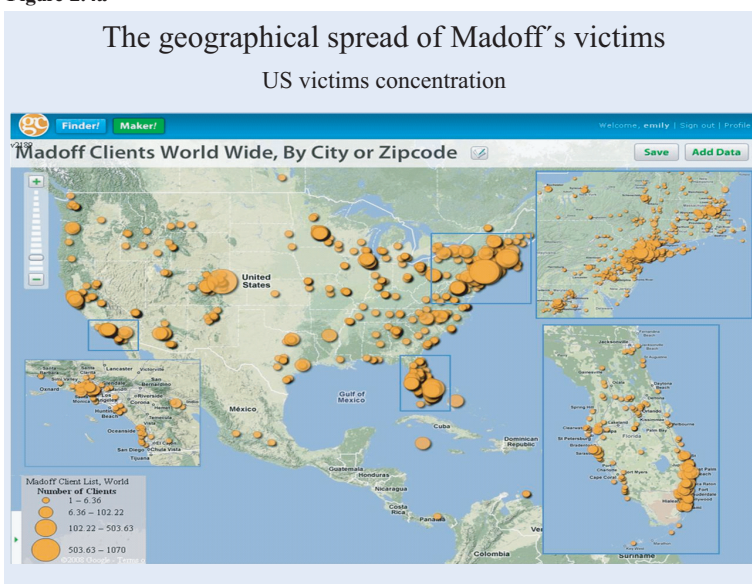


Figure 2.3



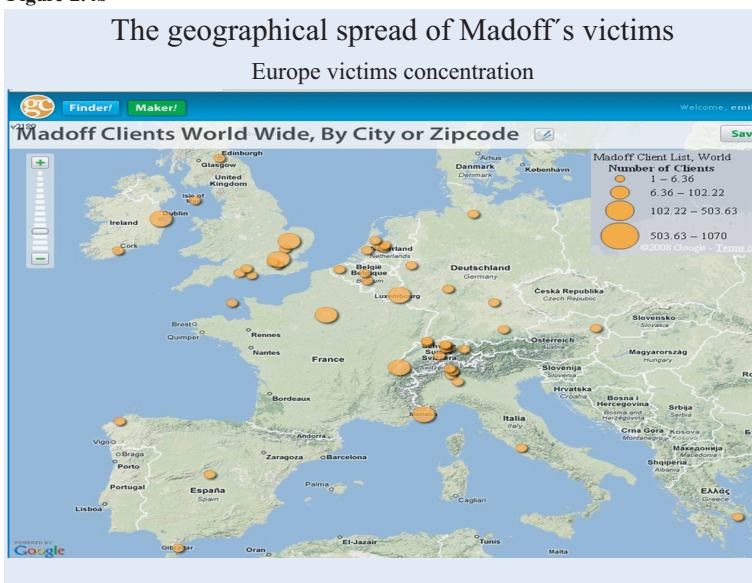
see how it correlates with the trust these people have towards banks and insurance companies. The survey in fact also reports information on how much people trust banks and insurance companies, which can be correlated with their past experience of financial fraud. This correlation is shown in Figure 2.3 which clearly documents that those who were cheated more often in the past 5 years tend today to trust intermediaries less than those who were cheated less often or not cheated at all.

Figure 2.4a



Hence one expects that similar effects have been at work during the financial crisis as its unfolding revealed the frauds to which investors were exposed. To test for this effect we rely on the Financial Trust Index Survey and merge the data with the number of Madoff victims in the area (either the zip code district or the state) were the investor lives and check how it correlates with the level of trust of these investors. The idea is that in areas where the number of Madoff victims is larger (for a given population), Madoff's fraud, and more generally financial frauds, are more salient, either because chances of knowing directly or indirectly (through word of mouth) one of the victims are higher or because, in places with lots of victims, the local press devotes a lot more attention and coverage, which adds to that devoted by the national press.

Figure 2.4b

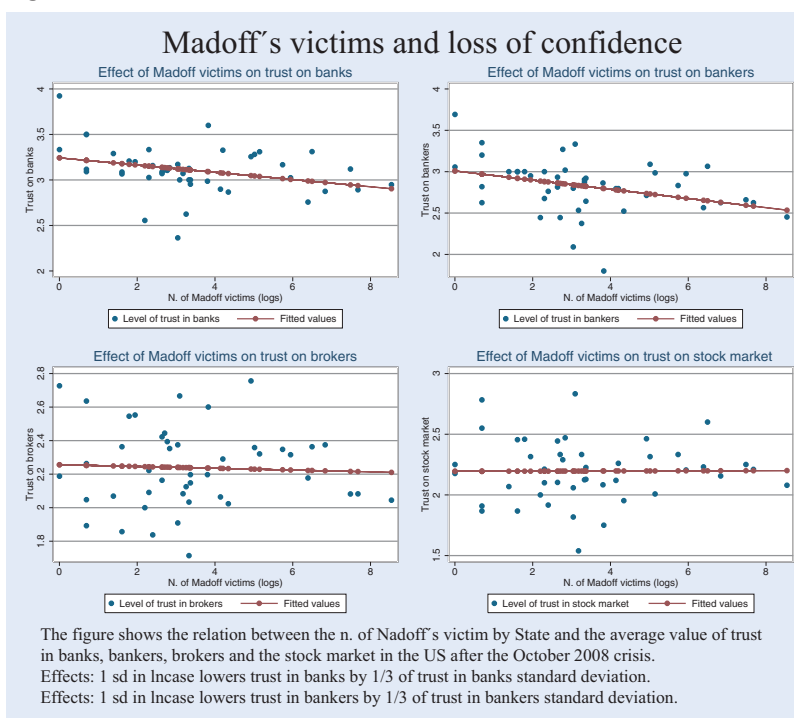


Hence, in these states the drop in trust following Madoff scandal should be more marked. Figure 2.4a shows how spread out are the Madoff victims and where they were located in the US. Figure 2.4b documents that the victims of this fraud were present also across Europe so that if it had any effect on trust it also under-

mined that of European investors. Because of data availability we focus on the effect on the trust of US investors. Figure 2.5 shows in four different panels the correlation between the average level of trust investors living in a state have towards banks, bankers, brokers and the stock market, respectively, and the density of Madoff victims in the state where they live. The figure shows clearly that trust towards banks, bankers and brokers is lower where the number of Madoff victims is larger, while the salience of this fraud seems to have little effect on the trust towards the stocks market, which is consistent with the fact that Madoff was a fund manager. There are three points to notice. First, these correlations show that a financial fraud not only affects the trust of the direct victims of the fraud but it also affects the trust of those who, even if they have not directly suffered from the scandal, have come to know about it, either because the information was publicised through the press or because they met a victim. This is more likely when the fraud is sizable and information about it reached many investors, as it was the case during the financial crisis with the Madoff case first, followed by the Sir Allen Stanford fraud and many other minor but diffused examples of deception and financial abuses that, because the topic was on demand, captured the attention of the press. Second, not only the trust towards those who committed the fraud falls – a specific banks or banker – but the drop in trust spills over to many other agents that are not directly involved, such as banks, bankers or brokers that may have no direct link with those who committed the fraud

and actually may have behaved honestly. Indeed, when the fraud comes to be known by many it tends to spread the suspicion to the whole financial industry leading, to a shared fall in trust, as happened during the crisis. In other words, the emergence of Madoff's fraud undermined the confidence in the whole financial industry. Interpreting this popular sentiment Paul Krugman in a New York Times column (December 2008) asked: "How different is what Wall Street did from the Madoff affair? Well Madoff simply skipped a few steps, simply stealing his clients' money rather than collecting big fees while exposing investors to risks they did not understand" (NYT, December 2008). Obviously, those who have been damaged the most are the intermediaries or brokers that have always done their job honestly. Quint Tatro, president, founder and manager of Tatro Capital, an investment management company, in a sorrowful letter wrote in January 2009: "A funny thing happened recently: Many new individuals simply have a hard time believing a traditional investment manager from Kentucky didn't 'get killed' along with everyone else. I have now heard that at least 2 people, when my firm was recommended to them, responded by asking whether we were 'legit.' One advisor, who held half of a mutual client's investment and will no longer be holding that half, went so far as to request the Schwab statements from the client verifying my performance. I suspect the client didn't amuse the advisor with this degrading request, but who knows. While most of my frustration can be pushed back onto Wall Street ... I entirely believe that Bernard Madoff is

Figure 2.5



directly correlated with this new rise in scepticism. So now, in addition to battling Mr. Market on a daily basis, I have to deal with charges of untrustworthiness."

Third, the correlations shown in Figure 2.5 only show the *differential* effect on the level of trust of the Madoff's fraud due to the fact that investors in different states were differentially informed about it, for example, because in states with more victims local newspapers devoted more space and for more time to it. This proves that the Madoff fraud has lowered trust in financial intermediaries, but it is likely to understate the effect since it

is unable to identify the drop in the average level trust of American investors after the discovery of Madoff's fraud: the latter could be first order.

Finally, to further strengthen the link between the fall in trust and the perceptions of opportunistic behaviour in financial markets brought to light by the crisis, we examine the following question asked in the FTIS: "Do you feel you have been cheated or misled by a bank in the last year?" Respondents could answer "yes" or "no". In unreported regressions we find that those who have been cheated or misled by a bank over the year prior to the crisis report a lower level of trust towards banks and bankers. Furthermore, not only these people lost confidence in the intermediary that cheated them (banks in this case) but also in other intermediaries and markets such as brokers, mutual funds and the stock market though by a somewhat smaller amount – a more direct way of supporting Quint Tatro's closing statement in the previous citation and showing its generality. Thus misbehaviour by one intermediary triggers a loss of trust in the whole industry. In addition this spillover effect extends to trust in large corporations⁶ and even to trust towards other people in general, though the effect is much smaller. Insofar as trust towards these entities also matters for transactions and trade, the loss of trust provoked by the crisis has affected the economy not only because investors have become more cautious in making their money available to the financial industry but also because they have become more reluctant to trade in general. This has acted as an amplifier of the effect of the financial crisis on the economy. Finally it is interesting to note that these effects were obtained after controlling for a variety of characteristics, in particular for an index of how angry investors were because of the crisis, reassuring that the effect of the experience of deception on people's trust does not reflect some other variable that also may impinge on their trust.

How will the fall in trust affect financial transactions?

The fall in trust is likely to affect investors' decisions on various margins that may have a strong

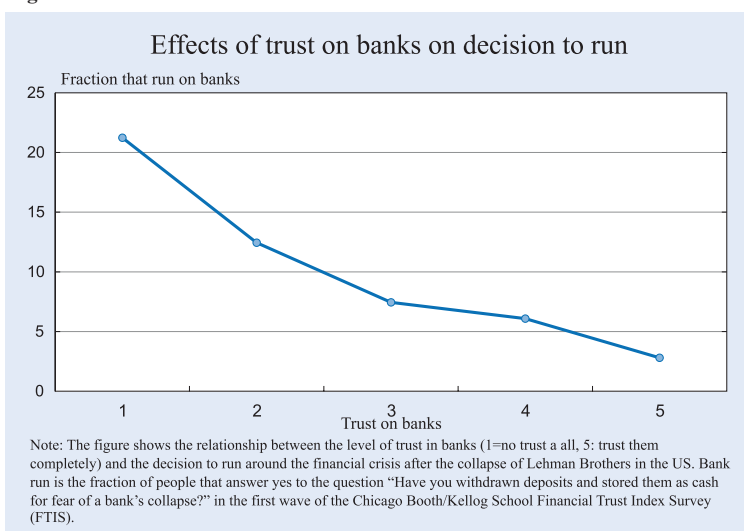
⁶ Notice that also trust in the Fed drops; to some extent this may look surprising, since in principle the Fed's response to the crisis in terms of liquidity provision was "right". But people seem to think otherwise. One interpretation is that they held the Fed responsible for not having done enough prior to the crisis to prevent banks' misbehaviour.

impact on the working of financial markets in the coming years. But before illustrating these margins, it is worth noticing that the decline in trust played a very important role already during the crisis as those who lost their trust towards their bank were also the first to withdraw cash from their deposits during the days following the collapse of Lehman Brothers.

In ongoing research, Guiso, Sapienza and Zingales (2009) argue that differences in levels of trust across individuals can explain who starts a run on the bank in a period of financial distress. Using data from the Trust Financial Index Survey they show that those investors that lost trust in banks and the financial system were the first to withdraw cash from their accounts at the peak of the crisis – that is they started a bank run. Figure 2.6 documents this finding showing the correlation between the fraction of people that run on the bank and the level of trust of the investors: people that lost trust in their bank were more than four times more likely to run on the bank than those who retained full trust, contributing to the spread of the panic. Guiso, Sapienza and Zingales (2009) report similar evidence for a sample of investors of a large Italian bank. The interesting feature is that in this case they can look at the correlation between the decision to run and the level of trust well before the crisis. Those who used to trust less were also more likely to take out their deposits, consistent with the idea that lack of trust makes a bank fragile and more exposed to runs.

For the future, the drop in trust is likely to have pervasive effects on investors' reliance on financial markets across various dimensions – one of the most important legacies of the financial crisis. In particular the

Figure 2.6



fall in trust is likely to affect people's willingness to enter into any type of financial contract. This should not be surprising since any financial transaction involves an exchange of money today against a promise of returning (more) money tomorrow. But the willingness to believe the promise and thus enter the transaction crucially hinges on how much trust one has in the person that issues the promise. Below we examine some of the effects in greater detail.

Trust and investment in risky assets

There is evidence that the level of trust affects investors' willingness to invest in stocks and, more generally, in risky assets. Stocks and risky assets lend themselves more easily to opportunistic behaviour than simpler securities. For instance Guiso et al. (2008) find that high-trust people are less likely to hold stocks in their portfolio and conditional on holding, they invest lower shares in stocks. Since this finding is obtained using variation in trust in a sample of Dutch investors, it cannot be due to trust reflecting differences in the quality or effectiveness of legal enforcement (which is held constant) but rather the subjectively perceived probability that people have of being cheated by the counterpart in a trade. This finding, which the same authors show holds in a sample of Italian investors, is consistent with the results of a recent Financial Times/Harris Poll that interviewed a sample of investors in the US and various European countries. It shows that in most countries people today have a lower propensity to invest in stocks (Table 2.3). For instance, in Germany 41 percent report that today they are less ready to invest in stocks than before the crisis, and the percentages are similar in other countries. Sapienza and Zingales (2008), using the FTIS, find that those who plan to decrease their stock investments after the crisis are those who have less trust in financial markets and in particular the stock market. Thus, as a consequence of the fall in trust, portfolios will likely be twisted markedly towards safer securities and away from stocks.

Trust and investment in ambiguous securities

Financial instruments that are more ambiguous either because of the complex nature of the contract or

Table 2.3
Change in willingness to invest in the stock market after the financial crisis

	Great Britain	France	Italy	Spain	Germany	United States
	%	%	%	%	%	%
Unweighted base	821	824	657	639	701	777
More likely to invest in stocks and [EU: share, US: stock funds]	7	5	7	9	6	9
My attitude has stayed the same	54	50	40	46	52	46
Less likely to invest in stock and [EU: share, US: stock funds]	39	44	54	46	41	46
Answers to the question: "Compared with two years ago how has your attitude to investing on the stock market changed, if at all?"						

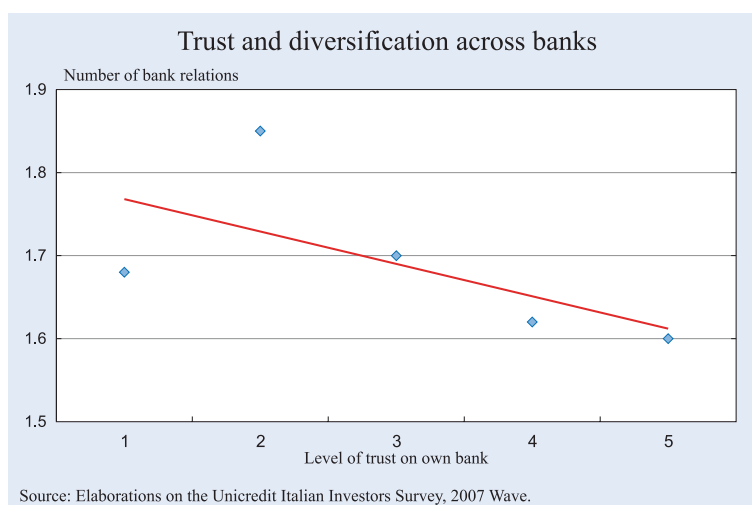
Source: September 2009 Financial Times/Harris Poll, Base: All EU adults in five countries and US adults with savings/investments.

because the probabilities of the returns are intrinsically uncertain (e.g. because they have a short history on which to estimate these probabilities) are more exposed to the risk of frauds and consequently are more easily placed among high-trust investors. When trust falls and becomes scarce one should see a decline in the demand for these instruments and an increase in the demand for simpler and more familiar securities. One of the consequences is that investors will revert to instruments issued by national agents, perceived as more "familiar" which become attractive as generalised trust vanishes. More generally, one of the consequences of the crisis will be to shorten the distance between the investor and the issuer of the financial instrument, thus reducing portfolio diversification and amplifying a home bias. There is anecdotal evidence consistent with this idea. In some countries, in spite of the crisis, some banks – typically smaller, unsophisticated banks that in the past were not involved in the placement with their customers of structured securities and derivatives – have experienced a significant growth in deposits notwithstanding the crisis; on the other hand, large, sophisticated banks that used to place complex securities have lost deposit market shares. One explanation is that investors revert back to the "familiar" for fear of being cheated by an intermediary that deals with unfamiliar securities.

Trust and diversification across stocks and banks

One implication of the diminished trust is that investors will form less diversified portfolios because they will focus more on domestic assets. Guiso et al. (2008) show that this property is more general and that investors that invest in stocks tend

Figure 2.7



to hold a more diversified stock portfolio when they trust more. On the other hand, diminished trust towards intermediaries leads an investor to entertain multiple relations to diversify the risk of opportunistic behaviours by reducing exposure to each one of them. We document this effect in Figure 2.7, which shows that in a sample of Italian investors, those who trust more (on a scale between 1 and 5 where 1 stands for very low trust and 5 for very high trust) there is a strong negative correlation between the level of trust and the number of bank relations an investor has. Both effects are costly: the first because one loses the benefits of diversification, the second because of the cost of setting and maintaining multiple relations.

Trust, demand for advice and delegation

Besides selling financial products, financial intermediaries offer investors advice and information on how to allocate their financial wealth. Investors' willingness to heed this advice depends on the trust they have in the intermediary as much as their decision to lend their savings to the intermediary. One of the consequences of the fall in trust is a lower investors' propensity to delegate financial decisions to the intermediary and to use his advice. Table 2.4 shows the distribution of the extent of delegation of financial decisions in a UniCredit sample of Italian investors before the crisis. Only 12 percent chose to decide on

their own without any involvement of the intermediary. All the others relied on the intermediary to a smaller or greater extent, with 20 percent that delegated either all decisions or a substantial part to the intermediary. The last two columns of Table 2.4 show the average level of trust and the fraction of investors that trusted the intermediary a lot. It is clear that a fundamental ingredient in the intensity of financial delegation is the level of investors' trust. Among those who rely only on themselves when making financial decisions 39.7 percent

trust the intermediary either substantially or a lot; among those who let the bank choose for them, the share of those who trust a lot is 93 percent. Thus, the fall in trust should result in a marked decrease in delegated investment. Since delegation is all the more necessary the more one invests in sophisticated securities, also through this channel there should be a move towards simpler portfolios. These portfolios, however, need not be necessarily better ones in the sense of providing a higher return per unit of risk. Guiso and Jappelli (2006) in fact find that investors who trust more and delegate more are better diversified and are able to attain more efficient portfolios.

Trust and the demand for insurance

Though most of the literature has focused on the effects of trust on investors portfolios, the fall in trust involves all operators in the financial industry as shown in Table 2.1, including insurance companies. In fact, since an insurance contract is itself a financial contract and as such is prone to the opportunistic behaviour of

Table 2.4

Trust and delegation of financial decisions

Mode of making financial decisions	% responses	Average level of trust	% share of those trusting a lot or substantially
I decide entirely on my own	12.0	2.98	39.7
I ask the bank to review my choice	30.4	3.92	82.4
I listen to my bank/advisor proposals but the final word is always mine	37.7	3.88	78.3
By and large I follow my bank/advisor	16.3	4.19	86.4
I let my bank/advisor decide everything	3.7	4.49	93.3

Source: UniCredit Italian Investors Survey, 2007 wave.

Box 2.1**Proposals by the Financial Stability Board (FSB) to improve financial regulation**

The predecessor of the Financial Stability Board (FSB) was the Financial Stability Forum (FSF), which was established by the G7 Finance Ministers and Central Bank Governors in 1997. The main idea was to create an institutional body that promotes cooperation among national and international supervisory boards as well as international financial institutions to achieve more stability in the financial system. Additionally it included representatives of the International Monetary Fund (IMF), the World Bank, the Bank for International Settlements (BIS) and the OECD.

In November 2008 with the financial crisis in full swing, the G20 proposed extending the membership of the FSF by all those G20 countries that were not participating so far, and – at the same time – to broaden its mandate. This proposal was implemented at the G20 Summit in April 2009 by founding the FSB, with Mario Draghi, Governor of the Banca d'Italia, being the first chairperson. The mission of the FSB is to enhance stability by implementing strong regulatory and supervisory measures.

Already in April 2008 a report was produced which highlighted the main sources of the crisis and put forward concrete actions for strengthening the financial system. A second report was published in April 2009 – with its major focus lying on reducing procyclicality and improving cross-border crisis management. Both reports constituted the basis for the Washington and London declarations of the G20. Since then, the FSB is in charge of monitoring and co-ordinating the implementation of the action plan.

The main cornerstone of the FSB proposals is a less leveraged financial system in which all institutions have significantly higher capital and liquidity reserves. However, in total there are nine building blocks that are addressed by the FSB:

1. Strengthening the global capital framework

A revised capital framework by the Basel Committee on Banking Supervision will become operative once the economic crisis is overcome. Accordingly, minimum capital requirements will increase in their level and quality, and will be required to behave countercyclically so that capital is accumulated during good times and may be used to overcome bad times. This step also includes the specification of a harmonised definition of capital in order to facilitate the comparability of institutions in different countries.

2. Making global liquidity more robust

The financial crisis has shown that insufficient liquidity may have severe consequences even for banks that had a sound capital basis. This problem is addressed by the Basel Committee by introducing a liquidity coverage ratio, thus creating a harmonised framework that in particular is supposed to reduce cross-border liquidity shortages.

3. Reducing the moral hazard posed by systemically important institutions

A major source of instability was created by moral hazard due to “too big (or too complex) to fail”. Strengthening capital and liquidity are steps in the right direction; however, further measures will be needed to overcome this problem. Until the end of 2010 measures to reduce systemic risk will be developed which – according to the FSB – may include actions to reduce the complexity of group structures, specific additional capital requirements and promotion of stand-alone subsidiaries.

4. Strengthening accounting standards

In order to meet the objectives of convergence, transparency, and the mitigation of procyclicality, standard setters are required to agree upon a single set of high quality global accounting standards. However, the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) are considering different accounting approaches that may lead to significant differences in banks' total assets. The FSB strongly encourages the IASB and FASB to cooperate with supervisors, regulators and other constituents in order to converge and improve their accounting standards with respect to the required amount of credit information, and the simplification of accounting principles for financial instruments.

5. Improving compensation practices

In order to improve the effectiveness of compensation policies, the FSB Principles for Sound Compensation Practices outline private and official sector action. The principles need to be applied to significant financial institutions and systemically relevant firms, and have to be implemented in all major financial centres in a fast and coordinated way. Constant and independent supervision ensures that all necessary improvements are made.

6. Expanding oversight of the financial system

It is necessary that not only the banking sector but the broader financial sector is subjected to appropriate oversight and regulation. Such a broad framework of regulation should particularly take hedge funds and rating agencies into account.

7. Strengthening the robustness of the OTC derivatives market

The risk in the market for over-the-counter (OTC) derivatives has to be reduced. Therefore, international standards need to be established that take full account of counterparty risks, the benefits of centrally cleared contracts and collateralisation. The regulation should ensure that equivalent standards are met outside the banking sector.

8. Re-launching securitisation on a sound basis

The revival of securitisation markets is crucial for the provision of credit to the real economy, whereas the official sector is required to provide a framework that ensures discipline in the securitisation market. In 2010, the main goals for supervisors and regulators are the establishment of rules for banks' management and disclosures, and the alignment of incentives of issuers with investors. If necessary, measures may be adjusted in order to reduce complexity and enhance transparency.

9. Adherence to international standards

In order to strengthen adherence to international regulatory and prudential standards, the FSB framework intends to facilitate the provision of comprehensive and updated compliance information and to identify non-cooperative jurisdictions. An important means for achieving these goals is the system of peer reviews among FSB members to assess the implementation of international financial standards and to discuss additional steps.

Source: <http://www.financialstabilityboard.org>.

the insurance company, the fall in trust should also affect the demand for insurance. Guiso et al. (2008) find that, in the sample of Dutch investors they examined, individuals that trust less are less likely to purchase insurance. In an interesting paper that relies on a field experiment in Indian villages, Cole et al. (2009) show that overcoming mistrust can result in a significant increase in peasants' adoption of insurance contracts and Guiso and Schivardi (2009) find that in a sample of small businesses a critical factor limiting entrepreneurs willingness to insure their firm is mistrust towards insurance companies. To sum up, given the importance of trust in all financial contracts, the fall in trust towards all segments of the financial industry will give rise to a generalised flight from financial trades and particularly deal from those trades that are severely exposed to opportunistic behaviour.

Rebuilding trust in finance

As illustrated, the fall in trust is likely to have pervasive effects on people's willingness to enter into financial contracts and can thus hamper the process of financial development. Insofar as it results in a shift towards safer assets, it will push up the equity premium and make equity financing more expensive. This may have consequences for fast growing and innovative firms that depend more heavily on this type of financing. Similarly, if the increased mistrust results in a preference for instruments with shorter maturity, it will raise the cost of long-term financing, hampering projects with high-yields but longer maturities. Because of this it is important to understand how one can rebuild trust in financial markets and intermediaries. Here we will examine some avenues.

Figure 2.8a

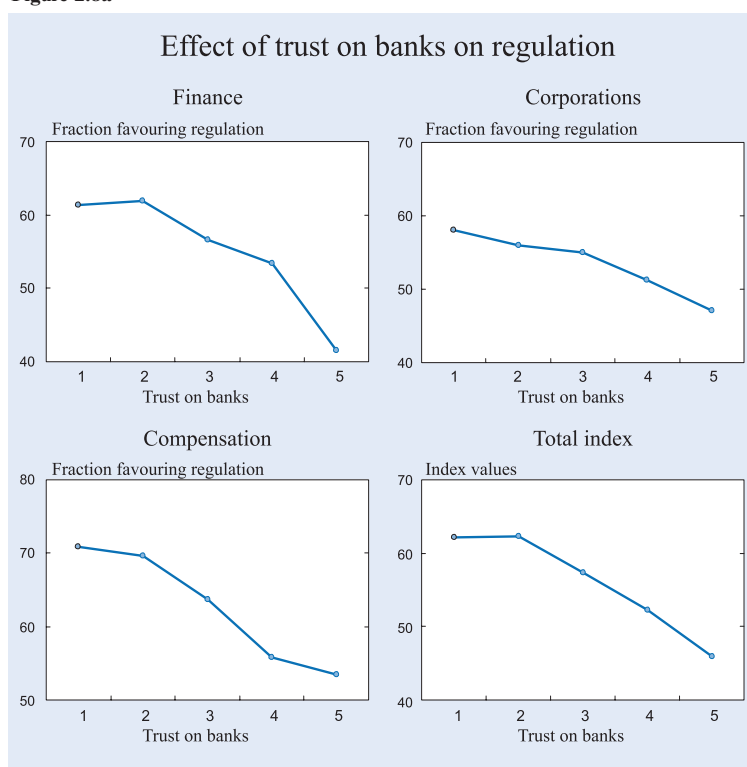
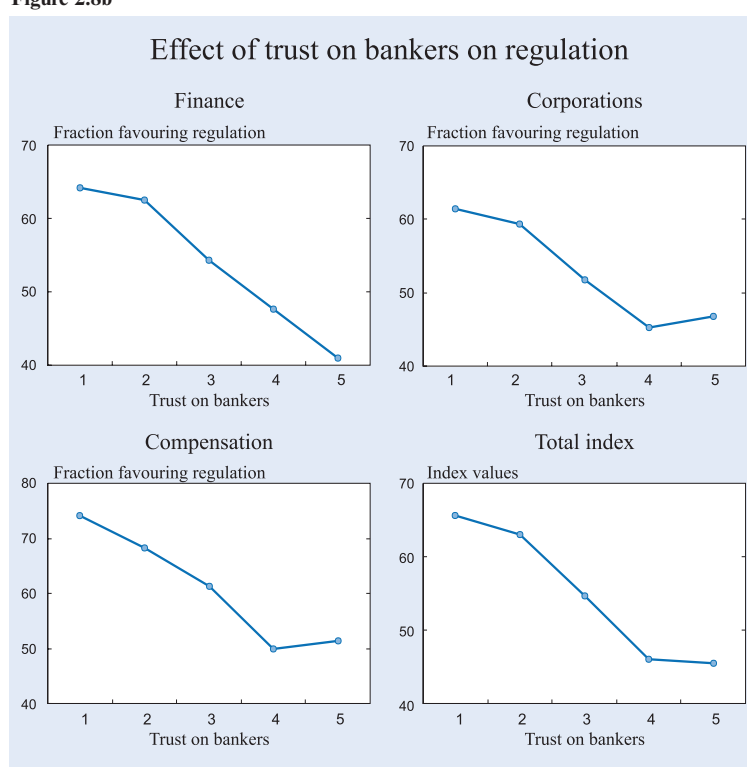


Figure 2.8b



The regulatory approach

One approach, so far the only one that has been followed to raise trust, is to enhance the intensity of financial regulation. This approach, shared by many

governments particularly in Europe, has been the subject of several of the recent G20 meetings and of the proposals for intervention that are being discussed at the Financial Stability Board (see Box 2.1).

Needless to say, many of the regulatory proposals that are under scrutiny go beyond the purpose of rebuilding trust. Rather, they are justified by regulatory failures that have become manifest during the financial crisis. In fact, the set of proposals under discussion is ample and heterogeneous and ranges from more stringent capital requirements to the establishment of new authorities for macro-prudential supervision, the breaking up of banks into smaller units to deal with too-big-to-fail issues, to policies aimed at lessening the impact of bank failures and the associated contagion risks through regulatory constraints on connectedness. Many of these policies, assuming they will be finally adopted, will most likely affect the perceived *solvency* of the intermediaries and may result in a lower likelihood of future crises. Some policies – such as the limitations that the Financial Stability Board proposed for implementation in September 2009 on the structure of compensation of top managers at financial institutions – may help to assuage investors' anger for the losses suffered during the crisis and their indignation at the high level of compensation for top executives in the financial industry, thought to be responsible for their losses. But these measures are likely to have little impact on the trust investors have in financial intermediaries and markets. Rather, it is the drop in trust that increases the demand for regulation and builds consensus around it. In fact, those who mistrust banks and financial intermediaries tend to favour tighter regulations. To show this link we rely on a set of questions that have been asked in the FTIS on whether the respondent is supportive or not of tighter regulation of US financial intermediaries and large corporations and whether he agrees on setting caps on the compensation of top managers in financial corporations. Figure 2.8 shows the correlation between the intensity of trust towards financial intermediaries (Panel A) and bankers (Panel B) and the support for regulation measured by the fraction of people that agrees with the policy. The fraction of those supporting a more stringent regulation is higher among those whose trust has fallen during the crisis than among those who continue to trust banks and financial markets.

But causality here most likely runs from the fall in trust to the demand for regulation. The latter, in turn,

would be capable of increasing the trustworthiness of the intermediaries and because of this the trust of the investors is still to be proved. The evidence so far from cross country correlations is that countries with stronger regulation have lower average levels of trust, not higher! (See Aghion et al. (2010); Pinotti (2008); Carlin et al. (2009).)

From the viewpoint of individual investors and of the regulation of their relation with financial intermediaries, the closest proposal that can help rebuild trust is the creation of a consumer protection agency, as proposed by the Obama administration. The agency would oversee consumer financial products which have been regulated in the past but whose oversight was exposed as lax. Another initiative that has been taken very recently is the creation in the US of a Financial Fraud Enforcement task force to combat financial crimes.⁷ Interestingly, as made clear by Attorney General Eric Holder, the task force is intentionally created to address the fall in trust induced by the scandals that have been brought about by the financial crisis. He notes: “We face unprecedented challenges in responding to the financial crisis that has gripped our economy for the past year. Mortgage, securities, and corporate fraud schemes have eroded the public’s confidence in the nation’s financial markets and have led to a growing sentiment that Wall Street does not play by the same rules as Main Street. Unscrupulous executives, Ponzi scheme operators, and common criminals alike have targeted the pocketbooks and retirement accounts of middle class Americans, and in many cases, devastated entire families’ futures. We will not allow these actions to go unpunished, which is why President Obama has established this Financial Fraud Enforcement Task Force to investigate and prosecute fraud and financial crime ... This Task Force’s mission is not just to hold accountable those who helped bring about the last financial meltdown, but to prevent another meltdown from happening.”

Because these initiatives are both specifically targeted to protecting investors from abuses they may actually contribute to rebuilding trust. But there are also reasons to believe that by themselves, these interventions may have limited impact. Concerning the consumer protection agency and more generally regulatory interventions, because they are imposed from outside the industry perceives the costs of the

⁷ See <http://www.justice.gov/ag/speeches/2009/ag-speech-091117.html>.

regulations but not the benefits; hence financial intermediaries will tend to circumvent their application, with greater success the weaker the actual enforcement is. Since investors anticipate this, they may not revise their trust priorities significantly. Furthermore, sometimes financial regulation, even when designed to protect investors, may be bothersome for them as well. Because of this and in order to limit the burden, they will be willing to tolerate intermediaries' misapplications of these rules. A good example is the recent set of norms imposed by the EU's Markets in Financial Instruments Directive (MiFID) to classify investors according to their ability to make financial decisions and their capacity to bear financial risk. To achieve this classification banks can obtain information from their customers, for example, by asking them to fill in specific questionnaires. But because the latter are costly to submit, banks have all the incentives to minimise the effort and propose minimal questionnaires, possibly based on investors' self-classification (so as to avoid any responsibility for misclassifications); since filling in these forms is bothersome for investors too, they care little about the quality of the information that banks collect and will instead join them in minimising the effort put in collecting the MiFID data. But this contributes to the failure of MiFID objective: limiting banks opportunistic behaviour by forcing them to segment their clientele and restrain products that can be sold to unsophisticated and risk adverse investors. Anticipating this, people's trust in banks is likely to change little.

An industry-based strategy

Losing investors' trust is very costly for the financial industry. Since this is the case one would expect that intermediaries have strong incentives to take actions to re-build their reputation and re-gain the trust of their customers. Today one of the big questions that any financial operator is confronted with is how to rebuild the trust of their investors.

Unfortunately there are no easy recipes on how A may convince B to re-consider his opinion about the trustworthiness of A. The recent literature on trust has shown evidence that B would trust A more if A is "similar" to B in some dimension. In a well-known trust game experiment, De Bruine (2002) reports the effects of a manipulation of facial resemblance on players' willingness to trust the opponent. She finds that when subjects were shown faces of ostensible

playing partners manipulated to resemble themselves they trusted them more than when the face of an unknown person was shown. Guiso and Schivardi report evidence that is consistent with De Bruine's (2002) findings. In a survey of a sample of small businessmen interviewees (280 overall) were asked to report, at the end of the face-to-face interview, their judgment about the trustworthiness of businessman that they interviewed on a scale between 0 and 10 (0 = totally untrustworthy, 10 = fully trustworthy). Interviewees also reported their opinion (again on a scale between 0 and 10) on how much affinity they felt to the businessman (0 = no affinity, 10 = complete affinity). The data show two interesting facts: first, the more a person feels affinity the more he trusts; second, while at low levels of affinity the level of trust towards the businessman is highly variable, at high levels of affinity one trusts fairly reliably. It is reasonable to assume that one tends to trust people that are not much different from oneself. This tendency to trust those who are similar is also true when similarity is measured along various dimensions, including cultural and genetic distance among people (Guiso et al. 2009). Thus, one possible strategy to raise trust is to improve the match between investors and the manager of the relation at the intermediary, for instance assigning a manager of the same gender and geographical origin to the investor.⁸ While this may help in raising the average trust that investors have towards their bank/broker, it is unclear that it helps raising the trust of those who lost it. To raise the latter one needs to set up mechanisms that signal in a credible way that the intermediary has become more trustworthy because, thanks to the mechanism, there are weaker incentives to adopt predatory actions towards the investors. Below we will discuss some possible mechanisms.

A rating system that even the most (financially) illiterate investor can understand

One possibility is to adopt a rating system aimed at reducing the scope for exploiting conflicts of interests that often arise in universal banks that manage the savings of the investors. The strategy followed so far by the regulators to control conflicts of interests is to

⁸ Of course if matching according to similarity is an effective way to raise trust, markets should be doing it already. If they already do, then this is not a relevant policy. If they do not it may be because this type of matching entails costs that exceed the benefits, in which case and the proposal would have little practical value. But it may also be that they do not match according to similarity because they ignore its potential benefits. We cannot rule out this possibility; after all, research showing the trust effects of similarity is quite new.

impose tighter disclosure requirements on the intermediaries. Yet this strategy has proved to be faulty or insufficient. The main problem with disclosure is that it takes for granted that investors are able to understand what is disclosed and its implications in terms of incentives of the intermediary. However, the available evidence on poor levels of financial literacy and knowledge of the majority of the investors in almost all countries (see e.g. Lusardi and Mitchell (2009), Guiso and Jappelli (2008) Jappelli (2009)), even those with high levels of achieved education, casts serious doubts on the validity of the assumption. Relying on the loss of reputation as a deterrent for intermediaries misbehaviour, and thus as a mechanism to raise trust in financial intermediaries, requires not only that information about potential conflicts is made available but also that the investor has the ability to elaborate this information. For this to be the case one has to make the disclosed information understandable to the least experienced and financially knowledgeable investor – i.e. to the typical customer of a bank. One way of doing this is to rely on a third party to rate banks on the basis of their trustworthiness and fairness when dealing with their customers and when managing their portfolios and providing financial advice. This “bank-fairness index” may be reported on a scale between 0 and 10, with higher values meaning a more reliable intermediary – a metric that any investor can understand. The “bank-fairness index” is similar to the rating system adopted for issuers of specific securities and its role would be analogous to that of standard rating: making available to the investors synthetic information that aggregates the judgment of an expert observer (and based on a multitude of data) on the quality of the issuers, subject to periodic revisions. In contrast to standard rating, the “bank-fairness index” is aimed at measuring a bank’s ability and reliability in its role as delegated portfolio manager and in general as provider of financial advice that un-experienced investors use in their financial decisions. Banks with an internal organisation that discourages the exploitation of conflicts of interest or that distributes easily understandable information to its customers, that allocate qualified personnel to financial consulting services, etc. would obtain a high rating, attracting more customers and this would provide enough incentives for them to adopt actions that discourage the exploitation of conflicts of interests. These banks would be compensated for the extra costs they incur with increased trust from their customers. Reliance on a rating system – which is a voluntary choice of a bank – is credible precisely because it entails some costs to

the bank. Needless to say there could be many implementation problems, including the fact that finding independent and uncorrupted rating agencies may, as the crisis has shown, not be a trivial issue. But the biggest problem, in our view, is initialising the process. If the exploitation of conflicts of interests and misbehaviour more generally is a diffused practice in the industry, then even a honest intermediary (but still sensitive to short-run profitability) may find it difficult to subject its bank to the “bank fairness index” and give up a source of profit, as this may concede an advantage to its competitors. To put it differently, an outcome where low trustworthiness is pervasive may be stable. It may be unwise to play honestly when everyone else is cheating; if an intermediary does not cheat while all the others do, it misses the upside. If it cheats when all the others do, there is no downside as “cheating” becomes the predominant rule of behaviour and one cannot punish the whole industry when all follow the same practice. Today it is perhaps easier to circumvent this problem given the greater value that rebuilding reputation has for any intermediary. Furthermore, since the incentive to behave in the same way as the others do naturally implies that the financial industry can either settle on a bad equilibrium in which all cheat or instead in a good equilibrium where all play honestly, one can think of a role for regulation/supervision that encourages intermediaries to coordinate on a different, no-cheating equilibrium.

A trust-based compensation scheme

A second, more direct mechanism to raise trust is to provide incentives to build it. If the compensation of the investor’s manager depends on the level of trust investors have in their asset manager, the latter have strong incentives to behave in a trustworthy manner and this, perhaps slowly, will raise the investors’ trust and his willingness to invest. As trust increases, the investor will also tend to concentrate more assets with a single manager, thus avoiding costly duplications of relationships. A mechanism of this sort could be implemented for instance by relying on the information that intermediaries have to collect from the investors to comply with the EU’s Markets in Financial Instruments Directive (MiFID). The information in this directive is presently essentially perceived as a burden and unutilised. One could insert specific questions that the investors can report anonymously on how much they trust the intermediary, the portfolio manager and in general the person

they deal with when making financial decisions. Manager pay could then respond to the level of trust (or its change) of the pool of customers he is responsible for. One benefit of the trust-based compensation scheme is that it naturally leads the bank manager to adopt a long horizon. Since building trust takes time and is accumulated only slowly, if only because those with low levels of trust do not experiment (or experiment less) and thus do not learn (or learn slowly), they cannot learn immediately the increased trustworthiness of the bank manager. Furthermore, since trust is slow to accumulate but fast to vanish, once a reputation of trustworthiness is obtained it becomes costly to dispel it, strengthening the incentives to behave in a trustworthy manner. Obviously, this too, like all incentive schemes, can be distorting. In particular, if one encourages building trust one provides incentives not only to create but also to extort trust especially if this is a less costly activity than creating trust by behaving in a trustworthy manner. One way to limit this possibility is to integrate an investor's opinions with those of some internal auditing committee at certain frequencies. Another is to rely on the legitimate interest of the other managers for having their colleagues behave honestly, particularly those that are located in close proximity. The reason for this is that if manager A cheats his investors, also the trust of the investors of manager B will be affected, as the Quint Tatro tale in the introduction illustrates. Thus, one could rely on an internal reporting system that allows and actually encourages managers to report cases of abuses and manipulation of investors' trust.

To strengthen the scheme even further, also the compensation of the top management of the bank, in particular its CEO (and maybe also the board of directors) could be linked to the trust index of the bank customers.

To sum up, the adoption of a "trust-based compensation scheme" is a practical way to induce a financial organisation and its workers to limit the incentives to deceive poorly informed investors and to treat them fairly by always acting in their best interest. Since this commitment is translated into a compensation scheme, it should be credible and thus able to modify investors' beliefs. In other words, trust is the investors' belief that those who manage their savings and provide them with financial advice are trustworthy. For intermediaries hoping to increase investors' trust, the only way is to invest in increasing their trustworthiness.

Promoting investors' financial education

A third type of strategy is to take actions that promote the financial education of the investors – for instance transparently lobbying with the government for having financial education taught at schools, making financial education material certified by third parties available to investors etc., since people with lower levels of financial education and financial experience are more likely to be victims of financial deception by intermediaries. The main reason is that unsophisticated investors are more vulnerable to deception because they are more dependent on the intermediary advice for their financial choices. Second, they are also more subject to interpretation problems when investments result in negative returns and are thus more likely to think that they have been cheated. Consistent with this view, Butler et al. (2009) find that the probability a person being deceived by a bank or insurance company is much higher for people with low levels of education. Furthermore, this probability is higher also for people that – holding constant their level of education – live with parents with low education. This feature has an important implication: since the family is an important channel through which reliable financial education is obtained, raising the level of financial education has important spillovers through the family and informal (but reliable) network channels. An intermediary that promotes financial education signals its intention to be willing to deal with experienced and sophisticated investors, with enough ability not to fall victims to financial abuses and distorted advice. Because of this the investors' trust should increase. Needless to say investment in financial education pays off in the very long run; however the return to the intermediary in terms of increased trustworthiness may be more immediate if the intermediary's commitment to transfer power to the investor through this channel is credible. Credibility would be enhanced if the sponsoring of financial education programmes is part of a broader policy aimed at limiting intermediaries' incentives to deceive investors, such as the trust-based compensation scheme and the bank fairness index.

Conclusions

The dramatic drop in trust following the revelation of information of pervasive cheating in financial markets is likely to have a very strong negative impact on investors' willingness to bear risk and

thus on the cost of risk capital. Insofar as trust levels were exceedingly optimistic, their downward revision should be partially welcome as it may help punish dishonest financiers and help restore market discipline.

However, since trust has fallen across the board, its decline also affects the honest intermediaries, limiting the flow of capital to industry in general. We have proposed a number of measures to rebuild trust. The measures proposed all try, from different angles, to limit the scope for intermediaries' opportunist behaviour – that is to raise their trustworthiness – and because of this, increase trust. In each case, the policy is not imposed; adhering to it is instead to the discretion of the intermediary. However, as we have argued, there is no automatic mechanism that guarantees that intermediaries will all agree to voluntarily adopt these policies. Rather, if dishonest behaviour is dominant among intermediaries, even the honest ones may on their own be unwilling to adopt these measures and help the economy move to a better outcome where competition drives out dishonest behaviour. We have also argued that regulation by itself, without the involvement of the intermediaries, may fail to restore trust; however regulatory agencies may play a very important role in coordinating the selection of the honest equilibrium. For instance, using “moral suasion” to persuade even a small but important number of intermediaries to “play the honest game” may be enough to trigger a response of the same type by the dishonest ones and influence the whole industry outcome.

References

- Aghion, Philippe, Yann Algan, Pierre Cahuc and Andrei Shleifer (2010), “Regulation and Distrust”, *Quarterly Journal of Economics*, forthcoming.
- Arrow, Kenneth (1972), “Gifts and Exchanges”, *Philosophy and Public Affairs*, 1, 343–62.
- Gambetta, Diego (2000) “Can We Trust Trust?” in Gambetta, Diego (ed.) *Trust: Making and Breaking Cooperative Relations*, University of Oxford, 213–37.
- Cole, Shawn, Xavier Giné, Jeremy Tobacman, Petia Topalova, Robert Townsend and James Vickery (2009) “Barriers to Household Risk Management: Evidence from India”, mimeo Harvard University.
- DeBruine, Lisa M. (2002), “Facial Resemblance Enhances Trust”, *Proceedings of the Royal Society of London B*, 269 (1948): 1307–12.
- Guiso, Sapienza, and Zingales (2004), “The Role of Social Capital in Financial Development”, *American Economic Review*, 94(3), 526–56.
- Guiso, Sapienza, and Zingales (2008), “Trusting the Stock Market”, *Journal of Finance*, 63(6), 2557–600.
- Guiso, Sapienza, and Zingales (2009), “Cultural Bias in Economic Exchange?” *Quarterly Journal of Economics*, forthcoming.
- Guiso, Luigi, Paola Sapienza and Luigi Zingales (2009), “Trust and the Fragility of Financial Markets”, mimeo.
- Guiso, Luigi and Tullio Jappelli (2008), “Financial Literacy and Portfolio Diversification”, EIEF working paper 8/12.
- Jappelli, Tullio (2009), “Economic Literacy: An International Comparison”, CSEF working paper 209.
- Lusardi, Annamaria and Olivia Mitchell (2009), “Financial Literacy. Evidence and Implications for Financial Education”, TIAA-CREF Institute Trends and Issues, May.
- Pinotti, Paolo (2008), “Trust, Honesty and Regulations”, MPRA paper 7740.
- Sapienza, Paola and Luigi Zingales (2008), “The Financial Trust Index. The results: Wave I”, <http://www.financialtrustindex.org/resultswave1.htm>
- Carlin, B., F. Dorobantu and S. Viswanathan (2009), “Public Trust, the Law, and Financial Investment”, *Journal of Financial Economics*, forthcoming.
- Knell, Markus and Helmut Stix (2009), “Trust in Banks? Evidence from normal times and from times of crises”, Oesterreichische Nationalbank, mimeo .

FROM FISCAL RESCUE TO GLOBAL DEBT

1. Introduction

A broad consensus seemed to have been reached since the onset of the financial and economic crisis that governments needed to undertake collective action to provide a fiscal stimulus to prevent a deep and long-lasting recession.

For example, a much-cited note by the IMF at the end of 2008 argued that the “optimal fiscal package should be timely, large, lasting, diversified, contingent, collective and sustainable”.¹

The European Council of the EU agreed a “European Economic Recovery Programme” (EERP) in December 2008, which called for a discretionary fiscal stimulus of at least 1.5 percent of GDP. This was regarded as “a crucial contribution to tackling the global economic crisis in which all countries with sufficient fiscal space need to play a role in filling short-term demand gaps”.²

At its meeting in April 2009, the G20 stated: “We are undertaking an unprecedented and concerted fiscal expansion, which will save or create millions of jobs which would otherwise have been destroyed, and that will, by the end of next year, amount to \$5 trillion, raise output by 4 percent, and accelerate the transition to a green economy. We are committed to deliver the scale of sustained fiscal effort necessary to restore growth.” As recently as September 2009, the G20 stated: “We will continue to implement decisively our necessary financial support measures and expansionary monetary and fiscal policies, consistent with price stability and long-term fiscal sustainability, until recovery is secured.”

The issues addressed in this chapter are:

- What has happened so far? What discretionary stimulus has taken place? How does this compare

with the overall changes to fiscal positions? What are the existing and projected levels of public debt relative to GDP?

- Was the consensus correct? Did we need a fiscal stimulus? Can we identify the effects?
- There is now significant concern about debt-to-GDP ratios. Are they too high? How and when should they be reduced?

2. What has happened to fiscal deficits during the crisis?

In 2009 every EU member-state government had a budget deficit. In almost all cases, these deficits are expected to rise in 2010. These deficits varied considerably between countries, and the reasons for the size of the deficit also varied. Most countries introduced some discretionary fiscal stimulus in response to the financial and economic crisis, by cutting taxes or increasing spending. These discretionary measures were small relative to the size of the deficits.

In this section we present some evidence on the pattern of the deficits both over time (since 2004, and up to 2010 using European Commission forecasts), and across countries. We also describe the extent to which these deficits were generated by discretionary measures, and the extent to which they were due to reductions in tax revenues or rises in expenditure.

A starting point is the measurement of government debt. Measuring government indebtedness is difficult, since in principle it should include the extent of future liabilities due to pension provisions and other factors. There are also difficult issues with respect to interventions in the banking sector. For example, if a government guarantees a loan, then typically that is not recorded as an increase in government debt, even though the government has a contingent liability. Box 3.1 describes how such financial sector interventions are typically recorded in national accounts. The figures shown in this chapter are taken from Eurostat and the European Commission, which are based on a consistent approach across the EU.

¹ IMF (2008).

² European Commission (2009a).

Box 3.1**Measuring the impact on government debt of financial sector interventions**

EU governments have made significant interventions into the financial sector since the beginning of the financial crisis. The classification of the costs of these interventions, and their effect on various measures of government debt, are generally estimated in accordance to the *European System of Accounts 1995*.¹

Several accounting issues arise with respect to financial sector interventions. One is whether the intervention represents an institution becoming part of the public sector, and hence its debt becoming a public sector liability.

A second issue is which aspects of the financial accounts of an institution are relevant for measuring public sector debt. The most commonly-used measure of public sector debt is known as *public sector net debt*. This includes the financial liabilities of financial companies which have moved into public ownership. However, only *current* financial assets are netted out against these liabilities. Because other financial assets are not included, the measure does not give a realistic indication of the increase in the overall net indebtedness of the public sector. An alternative measure, *general government gross debt*, does net off all financial assets, and can therefore give very different indications of debt.

For example, it is estimated that, for the UK, the total increase in *public sector net debt* as a result of financial sector interventions is approximately £1.1 trillion to £1.6 trillion, which could raise the debt-to-GDP ratio in the UK by more than 100 percent. (Only a small part of this increase is included in the figures shown here; by far the largest part of this reflects the public ownership of Royal Bank of Scotland, Lloyds TSB and HBOS). But the increase in *general government gross debt* is estimated at only around £77 billion. While this is still, of course, a large amount, it gives a very different picture of the extent of the financial sector interventions.

Finally, government debt guarantees – including those in place before the crisis, and those introduced during the crisis – are typically not included in the figures for debt, even though they represent a contingent liability on the government.

Table 3.6 on page 76 gives an indication of the extent of the public sector interventions in the banking sector during the crisis.

¹ See Eurostat (1995). The European Committee on Monetary, Financial and Balance of Payments Statistics (CMFB) reviewed financial interventions and reported its opinion on their appropriate accounting treatment in March 2009. These were reviewed in detail by Kellaway (2009).

Table 3.1 shows the public sector balances of each member state since 2004; 2009 and 2010 are projections made by the European Commission. It is clear that deficits rose sharply in 2009. In 2007, the EU as a whole had a deficit of only 0.8 percent of GDP. That rose to 2.3 percent in 2008, and then jumped to 6 percent in 2009, and to 7.3 percent in 2010.

Romania is the only country that reduced its deficit between 2008 and 2009, but then it had a relatively high deficit of 5.4 percent of GDP even in 2008. Some countries have seen a notable worsening of the fiscal position. Ireland jumped from a small surplus in 2007 to a deficit of 12 percent of GDP in 2009. Likewise, Latvia went from a small deficit in 2007 to a deficit of 11 percent of GDP in 2009. The UK also moved in a similar way.

Table 3.1
Budget balances of EU member states, 2004–2010
percent GDP

	2004	2005	2006	2007	2008	2009	2010
Austria	-4.5	-1.7	-1.7	-0.7	-0.5	-4.2	-5.3
Belgium	-0.4	-2.8	0.2	-0.3	-1.2	-4.5	-6.1
Bulgaria	1.6	1.9	3.0	0.1	1.5	-0.5	-0.3
Cyprus	-4.1	-2.4	-1.2	3.4	0.9	-1.9	-2.6
Czech Rep.	-2.9	-3.6	-2.6	-0.6	-1.4	-4.3	-4.9
Denmark	1.9	5.0	5.0	4.5	3.6	-1.5	-3.9
Estonia	1.7	1.5	2.9	2.7	-3.0	-3.0	-3.9
Finland	2.2	2.6	3.9	5.2	4.1	-0.8	-2.9
France	-3.6	-3.0	-2.3	-2.7	-3.4	-6.6	-7.0
Germany	-3.8	-3.3	-1.5	-0.2	-0.1	-3.9	-5.9
Greece	-7.4	-5.2	-3.1	-3.9	-5.0	-5.1	-5.7
Hungary	-6.4	-7.8	-9.3	-4.9	-3.4	-3.4	-3.9
Ireland	1.4	1.7	3.0	0.2	-7.1	-12.0	-15.6
Italy	-3.6	-4.4	-3.3	-1.5	-2.7	-4.5	-4.8
Latvia	-1.0	-0.4	-0.5	-0.4	-4.0	-11.1	-13.6
Lithuania	-1.5	-0.5	-0.4	-1.0	-3.2	-5.4	-8.0
Luxembourg	-1.1	0.1	1.4	3.6	2.6	-1.5	-2.8
Malta	-4.7	-2.9	-2.6	-2.2	-4.7	-3.6	-3.2
Netherlands	-1.8	-0.3	0.6	0.3	1.0	-3.4	-6.1
Poland	-5.7	-4.3	-3.9	-1.9	-3.9	-6.6	-7.3
Portugal	-3.4	-6.1	-3.9	-2.6	-2.7	-6.5	-6.7
Romania	-1.2	-1.2	-2.2	-2.5	-5.4	-5.1	-5.6
Slovakia	-2.4	-2.8	-3.5	-1.9	-2.2	-4.7	-5.4
Slovenia	-2.2	-1.4	-1.3	0.5	-0.9	-5.5	-6.5
Spain	-0.4	1.0	2.0	2.2	-3.8	-8.6	-9.8
Sweden	0.6	2.0	2.4	3.8	2.5	-2.6	-3.9
UK	-3.3	-3.3	-2.6	-2.6	-5.4	-11.5	-13.8
EU27	-2.9	-2.5	-1.4	-0.8	-2.3	-6.0	-7.3

Source: 2004–2008, Eurostat; Forecasts 2009–2010 European Commission (2009a).

A small number of countries have had substantial deficits for a number of years: notably Greece, Hungary, Italy, Malta, Poland, Portugal and to a lesser extent, the UK. There are significant differences across countries in 2009, ranging from Bulgaria with a deficit of only 0.5 percent of GDP, to Ireland with a deficit of 12 percent of GDP.

These deficits were only partly due to discretionary responses to the economic and financial crisis. This is shown in Table 3.2 which indicates the size of the discretionary fiscal stimulus in each country in 2009 and in 2010 (taking into account those measures already announced). These are measured relative to the position in 2008, recording all discretionary changes in these two years.

Almost all EU governments introduced a fiscal stimulus in 2009, though some maintained a neutral position. The largest discretionary changes were in Spain, with a stimulus of 2.3 percent of GDP, made up of an increase in spending of 1 percent and a reduction in taxes of 1.3 percent. On average, though, the EU as a whole introduced a discretionary stimulus of only 1.1 percent of GDP. Note though that evidence presented in Chapter 1 suggests that changes in structural deficits – that part of the deficit that is not automatic – were larger than implied by the discretionary responses listed in this chapter.

Tables 3.3 and 3.4 split up the deficits in each country by considering the size of tax revenues (Table 3.3) and public spending (Table 3.4) as a proportion of GDP. Of course, there is considerable variation between countries. Not surprisingly, the Scandinavian countries have the highest revenues: in 2009, Sweden has revenues of 53 percent of GDP, Denmark 52.8 percent, and Finland 52 percent. Their expenditures are similarly high: 56.6 percent for Sweden, 55 percent for Denmark and 52.8 percent for Finland. Some of the newer members states are at the other extreme: Roma-

Table 3.2
Fiscal stimulus measures in 2009/10
percent GDP

	2009			2010
	Total	Expenditure	Revenue	Total
Austria	1.8	0.4	1.4	1.8
Belgium	0.4	0.2	0.2	0.4
Bulgaria	0.0	0.0	0.0	0.0
Cyprus	0.1	0.1	0.0	0.0
Czech Republic	1.0	0.5	0.5	0.5
Denmark	0.4	0.3	0.1	0.8
Estonia	0.2	0.2	0.0	0.3
Finland	1.7	0.6	1.1	1.7
France	1.0	0.7	0.3	0.1
Germany	1.4	0.6	0.8	1.9
Greece	0.0	0.0	0.0	0.0
Hungary	0.0	0.0	0.0	0.0
Ireland	0.5	0.3	0.2	0.5
Italy	0.0	0.2	-0.2	0.0
Latvia	0.0	0.0	0.0	0.0
Lithuania	0.0	0.0	0.0	0.0
Luxembourg	1.2	0.1	1.2	1.4
Malta	1.6	1.3	0.3	1.6
Netherlands	0.9	0.4	0.5	1.0
Poland	1.0	0.3	0.7	1.5
Portugal	0.9	0.9	0.0	0.1
Romania	0.0	0.0	0.0	0.0
Slovakia	0.1	0.1	0.0	0.0
Slovenia	0.6	0.5	0.1	0.5
Spain	2.3	1.0	1.3	0.6
Sweden	1.4	0.6	0.8	1.6
UK	1.4	0.4	1.0	0.0
EU27	1.1	0.5	0.6	0.7

Figures for 2010 represent changes with respect to 2008, i.e. include permanent measures taking effect in 2009 plus the net effect of measures taking effect in 2010.

Source: European Commission (2009a).

nia and Slovakia both have revenues of 32.2 percent of GDP, and expenditures of 38.5 percent and 38.3 percent respectively.

Across the whole of the EU, revenues have been very consistent as a proportion of GDP, at just over 44 percent in each of the 7 years shown. Revenues in 2009 and 2010 are lower than in the preceding years, but only fractionally. There is more variation over time for individual countries, although in most countries revenues typically only changed in 2009 by less than one percent of GDP.

The substantial rises in deficits therefore appear to be mainly driven by increases in spending as a proportion of GDP, rather than reductions in taxation as a proportion of GDP. Some countries – typically those with large increases in their deficits – have seen substantial rises in spending as a proportion of GDP. But note that GDP fell in many countries in 2009. The rise in the spending ratio may therefore not represent only a real increase in spending but also a reduction in

Table 3.3
Revenues of EU member states, 2004–2010
percent GDP

	2004	2005	2006	2007	2008	2009	2010
Austria	49.5	48.2	47.7	48.0	48.2	47.0	47.3
Belgium	49.1	49.4	48.7	48.1	48.4	48.5	48.2
Bulgaria	41.3	41.2	39.5	41.5	39.0	40.8	40.9
Cyprus	38.7	41.2	42.2	46.4	44.9	44.1	44.1
Czech Rep.	42.2	41.4	41.2	42.0	40.9	40.7	41.1
Denmark	56.4	57.8	56.6	55.4	55.4	52.8	53.4
Estonia	35.7	35.5	37.1	38.2	37.9	38.2	38.4
Finland	52.3	52.9	52.6	52.5	52.5	52.0	51.3
France	49.6	50.4	50.4	49.6	49.3	49.4	49.9
Germany	43.3	43.5	43.8	44.0	43.8	43.5	42.3
Greece	38.0	38.1	39.1	40.1	39.9	40.8	40.0
Hungary	42.6	42.3	42.7	44.8	46.5	46.1	46.4
Ireland	35.1	35.4	37.0	35.9	33.8	33.7	33.9
Italy	44.2	43.8	45.4	46.4	46.0	46.5	46.5
Latvia	34.7	35.2	37.7	35.5	35.5	34.1	34.7
Lithuania	31.8	32.8	33.1	33.9	34.0	34.8	36.0
Luxembourg	41.4	41.6	39.9	40.8	43.3	44.0	42.9
Malta	40.8	41.8	41.2	40.4	40.6	41.1	41.2
Netherlands	44.3	44.5	46.2	45.6	46.4	46.1	45.6
Poland	36.9	39.1	39.9	40.2	39.2	40.2	40.3
Portugal	43.1	41.6	42.3	43.1	43.2	42.6	42.4
Romania	32.3	32.3	33.1	34.0	33.1	32.2	32.5
Slovakia	35.3	35.4	33.5	32.5	32.7	32.2	32.1
Slovenia	43.6	43.8	43.3	42.9	42.7	41.7	41.6
Spain	38.5	39.4	40.5	41.0	36.6	36.4	36.9
Sweden	56.1	57.2	56.5	56.3	55.7	53.0	52.7
UK	39.6	40.8	41.6	41.4	42.3	41.4	41.6
EU27	44.0	44.4	44.9	44.9	44.5	44.3	44.1

Source: 2004–2008, Eurostat; Forecasts 2009–2010 European Commission (2009a).

Table 3.4
Government Expenditures of EU member states, 2004–2010
percent GDP

	2004	2005	2006	2007	2008	2009	2010
Austria	54.0	49.9	49.4	48.7	48.7	51.6	52.1
Belgium	49.5	52.2	48.5	48.3	49.9	48.5	48.2
Bulgaria	39.7	39.3	36.5	41.5	37.4	39.5	39.3
Cyprus	42.8	43.6	43.4	42.9	44.0	44.0	45.0
Czech Rep.	45.1	45.0	43.8	42.6	42.4	45.9	47.6
Denmark	54.6	52.8	51.6	51.0	51.7	55.0	57.0
Estonia	34.1	34.0	34.2	35.5	40.9	45.0	47.3
Finland	50.1	50.3	48.7	47.3	48.4	52.8	54.3
France	53.2	53.4	52.7	52.3	52.7	55.6	56.4
Germany	47.1	46.8	45.3	44.2	43.9	48.2	49.0
Greece	45.4	43.3	42.2	44.0	44.9	45.3	45.2
Hungary	48.9	50.1	51.9	49.7	49.8	50.8	52.0
Ireland	33.7	33.7	34.0	35.7	41.0	45.8	49.1
Italy	47.7	48.2	48.7	47.9	48.7	51.2	51.1
Latvia	35.8	35.6	38.2	35.9	39.5	46.8	49.8
Lithuania	33.3	33.3	33.6	34.9	37.2	39.5	42.7
Luxembourg	42.5	41.6	38.6	37.2	40.7	44.2	45.7
Malta	45.5	44.7	43.7	42.6	45.3	44.4	44.8
Netherlands	46.1	44.8	45.6	45.3	45.5	48.3	50.2
Poland	42.6	43.4	43.8	42.1	43.1	46.1	46.8
Portugal	46.5	47.6	46.3	45.8	45.9	48.9	48.7
Romania	33.5	33.5	35.3	36.6	38.5	38.5	38.9
Slovakia	37.6	38.2	36.9	34.4	34.9	38.3	39.4
Slovenia	45.8	45.3	44.6	42.4	43.6	47.7	48.6
Spain	38.9	38.4	38.5	38.8	40.5	45.2	47.1
Sweden	55.6	55.2	54.1	52.5	53.1	56.6	57.3
UK	42.9	44.1	44.2	44.0	47.7	50.5	52.4
EU27	46.9	46.9	46.3	45.7	46.8	50.1	51.1

Source: 2004–2008, Eurostat; Forecasts 2009–2010 European Commission (2009a)

GDP. By contrast, falling national income tends to reduce tax revenues automatically: so it is likely that revenues as a proportion of GDP would remain relatively constant in a downturn.

This analysis of revenues and expenditures helps to identify the automatic stabilisers of the economic downturn. However, other factors may also be relevant. In some cases, such as the UK, 2007 spending plans intended spending to rise sharply, financed by higher revenues. Moving into the recession, spending plans were not reduced, but revenues were much lower than expected, leading to the very high deficit.

Where do these deficits leave the level of outstanding debt as a proportion of GDP for EU countries? For the EU as a whole, the measured debt-to-GDP ratio has increased from 58.7 percent in 2007 to 72.6 percent in 2009, and it is projected to rise again to 79.4 percent in 2010. This figure is likely to continue to rise even after 2010.

Of course, there is again considerable variation across countries: from Estonia with debt of under 7 percent of GDP to Italy with a ratio of 113 percent. There is some evidence that countries with a lower debt ratio before the crisis have responded with a greater overall fiscal stimulus. For example, Ireland's ratio shot up from 25 percent in 2007 to 61 percent in 2009, and the UK from 44 percent to 68 percent. But there is little evidence that this was a discretionary response, whereby countries that were more able to provide a fiscal stimulus did so. Instead, the underlying reasons appear more to do with the

Table 3.5
Debt-to-GDP ratios of EU member states, 2004–2010
percent

	2004	2005	2006	2007	2008	2009	2010
Austria	64.8	63.7	62.0	59.4	62.5	70.4	75.2
Belgium	94.4	92.2	87.9	84.0	89.6	95.7	100.9
Bulgaria	37.9	29.2	22.7	18.2	14.1	16.0	17.3
Cyprus	70.2	69.1	64.6	59.4	49.1	47.5	47.9
Czech Rep.	30.4	29.8	29.6	28.9	29.8	33.7	37.9
Denmark	43.8	37.1	31.3	26.8	33.3	32.5	33.7
Estonia	5.0	4.5	4.3	3.5	4.8	6.8	7.8
Finland	44.2	41.4	39.2	35.1	33.4	39.7	45.7
France	64.9	66.4	63.7	63.8	68.0	79.7	86.0
Germany	65.6	67.8	67.6	65.1	65.9	73.4	78.7
Greece	98.6	98.8	95.9	94.8	97.6	103.4	108.0
Hungary	59.4	61.7	65.6	65.8	73.0	80.8	82.3
Ireland	29.7	27.5	24.9	25.0	43.2	61.2	79.7
Italy	103.8	105.8	106.5	103.5	105.8	113.0	116.1
Latvia	14.9	12.4	10.7	9.0	19.5	34.1	50.1
Lithuania	19.4	18.4	18.0	17.0	15.6	22.6	31.9
Luxembourg	6.3	6.1	6.7	6.9	14.7	16.0	16.4
Malta	72.2	69.8	63.7	62.1	64.1	67.0	68.9
Netherlands	52.4	51.8	47.4	45.6	58.2	57.0	63.1
Poland	45.7	47.1	47.7	44.9	47.1	53.6	59.7
Portugal	58.3	63.6	64.7	63.5	66.4	75.4	81.5
Romania	18.7	15.8	12.4	12.7	13.6	18.2	22.7
Slovakia	41.4	34.2	30.4	29.4	27.6	32.2	36.3
Slovenia	27.8	27.0	26.7	23.4	22.8	29.3	34.9
Spain	46.2	43.0	39.6	36.2	39.5	50.8	62.3
Sweden	51.2	51.0	45.9	40.5	38.0	44.0	47.2
UK	40.6	42.3	43.4	44.2	52.0	68.4	81.7
EU27	62.2	62.7	61.3	58.7	61.5	72.6	79.4

Source: 2004–2008, Eurostat; Forecasts 2009–2010 European Commission (2009a).

planned spending prior to the crisis and the degree to which the economies were affected by the financial crisis.

We discuss the implications of these deficits and their effects on the debt ratio in Section 4 below.

3. Is fiscal stimulus effective? Evidence from the literature

Most economists and policymakers have agreed that the adverse economic effects of the current crisis could not have been contained without a strong fiscal stimulus. Nonetheless, there are also sceptics who denounced the large fiscal expansions from 2008 as a waste of resources that could actually jeopardise the recovery because of their lasting negative impact on government finances. Not surprisingly, the long-standing debate on the fiscal transmission mechanism, and especially on the size of the fiscal multiplier, is raging once again. In this section, we briefly reconsider the theoretical and empirical arguments in this debate.

3.1 Macroeconomic models

3.1.1 Theory

Theoretical macroeconomic models have explored a variety of channels through which a fiscal stimulus can affect the economy. There are of course fundamental differences across paradigms as regards the effectiveness of fiscal policy. Neoclassical models emphasize that fiscal measures are either irrelevant (Ricardian equivalence prevents tax cuts from boosting private demand) or counterproductive (public spending crowds out private spending). Keynesian models emphasise that fiscal policy can actually crowd-in private expenditure, especially when economic resources are underutilised in a recession. An important lesson from these contrasting theoretical analyses, however, is that the macroeconomic response to fiscal expansion can vary widely, depending on the degree of slack in the economy, the monetary policy response, as well as the relevance of market distortions, ranging from credit constraints and other financial imperfections to nominal rigidities.

It is useful to start our analysis with a brief reconsideration of the standard neoclassical model with flexible prices and well-functioning labour and goods markets, see e.g. Baxter and King (1993). A specific reason to do so is that this model clarifies the important difference between wealth and substitution effects from fiscal measures, which are often blurred together in the popular account of the way fiscal policy works. In the classical exercise proposed by the literature, a temporary increase in government spending is eventually matched by an increase in lump-sum taxation which has the same present value (the timing of taxes does not matter, as Ricardian equivalence holds in this case). The increase in spending raises output somewhat, but unambiguously lowers consumption. The fall in consumption occurs for two reasons. First, as agents anticipate rationally the time path of future spending, they also feel that their net-of-tax wealth has fallen by the full increase in the tax burden. Under

Table 3.6

Public interventions in the banking sector
percent GDP

	Capital injections		Guarantees on bank liabilities		Relief on impaired asset and liquidity and bank support		Guarantees on deposits
	Total approved measures	Effective capital injections	Total approved measures	Guarantees granted	Total approved measures	Effective interventions	(€ 000, or percent of GDP)
Austria	5.5	1.7	25.7	6.8	7.1	2	100 percent
Belgium	5.3	6.1	70.8	16.3	8.1	8.1	100
Bulgaria	0	0	0	0	0	0	50
Cyprus	0	0	0	0	0	0	100
Czech Republic	0	0	0	0	0	0	50
Denmark	6.1	2.4	253	2.5	0.3	0.3	100 percent
Estonia	0	0	0	0	0	0	50
Finland	0	0	27.7	0	0	0	50
France	1.2	1.2	16.6	5.5	0.2	0.2	70
Germany	4.4	2	18.6	7.2	1.4	1.4	100 percent
Greece	2	1.5	6.1	1.2	3.3	1.8	100
Hungary	1.1	0.1	5.9	0	0	2.6	100 percent
Ireland	6.6	6.5	164.7	164.7	0	0	100
Italy	1.3	0.1	NA	0	0	0	c. 103
Latvia	1.4	0.9	25.7	2.8	10.9	4.7	50
Lithuania	0	0	0	0	0	0	100
Luxembourg	6.9	7.9	12.4	NA	0.9	0.9	10
Malta	0	0	0	0	0	0	100
Netherlands	6.4	6.8	34.3	7.7	11.4	5.5	100
Poland	0	0	0	0	0	0	50
Portugal	2.4	0	10	3.3	0	0	100
Romania	0	0	0	0	0	0	50
Slovakia	0	0	0	0	0	0	100 percent
Slovenia	0	0.4	32.8	6.3	0	0	100 percent
Spain	0	0	18.6	2.1	2.8	1.8	100
Sweden	1.6	0.2	48.5	11	12.6	0	50
UK	3.5	2.6	21.7	11.3	16.4	14.7	50
EU27	2.7	1.7	20.5	7.8	2.1	1.4	

Source: European Commission (2009b)

standard assumptions, agents react to the negative wealth shocks by reducing consumption and leisure. The reduction in leisure in turn implies an increase in labour supply, which increases output and lowers the real wage. The second effect works through intertemporal substitution of future for present consumption. If the increase in spending is temporary, interest rates (long and short) rise on impact, reflecting the relative scarcity of current output due to the additional demand by the government. In response to real interest rate movements, households postpone their spending plans. Similarly, real wages may temporarily rise in the short run, creating an incentive to work more on impact.³

The relative weight of these two effects, wealth and intertemporal substitution of consumption, depends crucially on the evolution over time of the change in

spending. If the increase in public expenditure is permanent and immediately implemented, it is the wealth shock associated with the higher tax burden that constitutes the lion's share. Otherwise, most of the adjustment in consumption and leisure is driven by intertemporal substitution. To clarify this point, suppose that, over the long run, the growth rate is zero and the real interest rate is 3 percent. All else equal, a temporary increase in spending as high as, say, 10 percentage points of GDP for one year would generate tax liabilities reducing households' permanent income by a mere 0.3 percentage points of GDP⁴ – quite a small amount, relative to the size of the upfront spending expansion.

The distinction between wealth and substitution effects is a key element in assessing the effectiveness of fiscal stabilisation policy. By its very nature, fiscal

³ While consumption is typically crowded out by government spending, investment can respond in different ways, depending on the specification of the model and especially on the persistence of the shock to public spending. There are also a number of extensions of the neoclassical model which could also accommodate a positive effect of the rise in government spending on consumption.

⁴ This result is obtained by calculating the constant flow of real taxes, which is equal, in present discounted term, to the increase in net debt financing the spending expansion. In the example in the text, the increase in debt is 10 percentage points of GDP. Hence $10 = \sum (1+r)^t x = x(1+r)/h$ implies that the additional tax payment ($x = .3/1.03$) must be approximately equal to 0.3 per period.

stimulus is temporary. The wealth shock associated with changes in the tax burden will affect households' consumption decisions in a limited way. The focus should instead be placed on "intertemporal substitution".

As stressed by the Keynesian literature, an important argument in favour of fiscal stabilisation is provided by models allowing for financial frictions. A fiscal stimulus is likely to be effective, for instance, when some households are credit-constrained, so that their spending decisions become sensitive to disposable income, as opposed to permanent income. If current income increases due to either a government expansion which raises economic activity and therefore wage payments, or a cut in taxes, these households are likely to spend more. Depending on the proportion of credit-constrained households in the economy, the positive response of their demand may drive up overall consumption. Similar results may be predicted by models where firms (entrepreneurs) are credit constrained, although the transmission mechanism is different, see e.g. Villaverde (2010) for a recent discussion.

Models with nominal rigidities call attention to an additional important element, that is, the interactions among monetary and fiscal policy. In both the traditional and the new Keynesian models, the effect of a fiscal stimulus is largely determined by the stance of the central bank. The fiscal multiplier is indeed determined by the targeting rule (interest or exchange rate) pursued by monetary authorities. For example, in the classical Mundell-Fleming model, fiscal policy is more effective if the country adopts a fixed exchange rate regime, so that the domestic policy rate is anchored to the foreign interest rate by the uncovered interest parity condition. Similarly, in the new Keynesian model, if the central bank could (and would be willing to) target a constant interest rate in real terms, under standard assumption this monetary stance would completely determine the evolution of consumption: any variation in government spending would exclusively be reflected in changes in output (Woodford 2010). The general point here is that some degree of monetary accommodation in the short run raises the macroeconomic impact of an increase in government spending.

However, as consumers and firms are forward looking, the impact of fiscal stimulus also depends on (private expectations about) how fiscal consolidation will take place in the future. Corsetti et al. (2009a), for instance, show that fiscal multipliers are

higher if a short-run expansion in spending is eventually offset, at least in part, by a decline in spending below trend, rather than exclusively by a rise in taxes. This is because the reversal in government spending generates expectations of a decline in short-term interest rates in the future, which has an immediate effect on long-term rates. With sticky prices (and a relatively accommodative monetary stance), it is possible that this effect may dominate the upward pressure on long-term rates resulting from the additional government spending. It may well be possible that consumption would be crowded in, rather than crowded out, on impact (see also Chapter 1 in the 2009 EEAG Report).

Note that monetary and fiscal interactions in both the short and the long run work mostly through the intertemporal substitution channel already discussed early on in this chapter, in particular through their influence on the path of the long-term rates relevant for private demand decisions.

A new generation of models building on Eggertsson and Woodford (2004) suggest that the fiscal expansions may be extremely valuable in deep recessions in which monetary policy is constrained in setting interest rates by the zero lower bound. In this case, absent fiscal policy, deflationary pressures from large recessionary shock may give rise to a deflationary spiral: with the interest rate at zero, insufficient demand causes firms to cut prices; to the extent that pricing decisions are staggered, falling prices generate expectations of lasting deflation; for a given nominal interest rate, these translate into higher real rates; and higher real rates further weaken demand, reinforcing the fall in output. A fiscal expansion can however stop this adverse mechanism, by raising demand and therefore contrasting the pressure towards lowering prices – a case discussed by Christiano et al. (2009), Corsetti et al. (2010), Erceg and Lindé (2010) and Eggertsson (2009) among others. These contributions are of particular interest in the current situation, not only because they explicitly address issues in fiscal stabilisation when interest rates are already effectively at zero, but also because they provide theoretical instances of very large multipliers for government spending (although not necessarily for tax cuts).⁵

⁵ Eggertsson (2009) emphasises that, when monetary policy is stuck at the zero lower bound, fiscal policies should aim directly at stimulating aggregate demand. These policies include temporary increases in government spending and tax cuts, such as an investment tax credit or a cut in sales taxes (by virtue of their direct effect on aggregate demand rather than aggregate supply). Tax cuts that lower marginal costs may instead exacerbate the risk of a deflationary spiral.

Yet, they mostly rely on restrictive assumptions regarding the origin of the shocks underlying the global slowdown.

As discussed in last year's EEAG Report, a leading explanation of the unexpected and strong drop in demand during the last months of 2008 and throughout 2009 attributes the recession to a rise in perceived uncertainty (see Chapter 2 of the 2009 EEAG Report). Such an interpretation raises the issue of how fiscal policy could stabilise inefficient and large fluctuations in economic activity in the face of rising uncertainty. This issue defines an important chapter in the economics of fiscal stabilisation, largely yet to be written.

It is indeed plausible that during a financial turmoil, when expectations are down, the role of fiscal policy is to inject "optimism" in private markets, helping people to re-gain confidence. Concretely, the government could commit to insure people against some very bad outcomes: to the extent that the crisis is driven by self-validating expectations, such a commitment can in principle coordinate expectations away from those outcomes. An advantage of this approach to fiscal policy is that the premise of the stabilisation strategy would be fully consistent with the leading diagnosis of what causes the crisis.

The design of fiscal stabilisation coherent with this view is however quite complex. Some of the trade-offs are already debated heavily, by and large contrasting the interests of Wall Street with the interest of Main Street. Moreover, there is a budget constraint on the stimulus: in light of the uncertainty surrounding their effects, actions must be such that they do not put fiscal sustainability in peril. We will return to these issues below.

3.1.2 Time series and panel analysis

Empirical work has generated a wide variety of estimates of fiscal multipliers – that is, of the effect on output of a fiscal stimulus. Certainly, we would expect the multiplier to depend on the type of fiscal stimulus. But the range of estimates generated in the literature probably owes more to the difficulty of identifying the effects, the variety of techniques used and the possibility that the multiplier may vary over time and across countries. The Box gives an indication of the different approaches used to identify the effects of an exogenous discretionary shock to government spending or taxation.

The different approaches briefly summarized in the Box have been used on aggregate data in a number of countries to identify the sign and size of the multiplier effect, and the effect on other variables, such as consumption, employment, interest rates and exchange rates.

Tables 3.7 and 3.9 summarise some of the estimates in the literature of the fiscal multiplier.⁶ The estimates shown in these tables are – where it is possible to identify – the cumulative peak effect on GDP of an exogenous shock to government spending (Table 3.7) or taxation (Table 3.9). The cumulative peak effect can occur immediately, or several quarters after the initial shock.

We will not discuss all of these papers. However, it is worth exploring some of the results in a little more detail. For example, in one well-known paper, Blanchard and Perotti (2002) present results from two models, which vary according to whether a deterministic or stochastic trend is added to the model. The results shown in Tables 3.7 and 3.9 are for the latter case. Looking at point estimates, output rises by 0.9 following a unit increase government spending. This effect occurs in the first quarter, and thereafter declines. By contrast, with a deterministic trend, the peak effect reaches 1.29, but occurs only after 15 quarters. Since government spending is itself a component of GDP, these two estimates generate different predictions for the sign of effect on the other elements of GDP: negative under the stochastic trend, and positive for the deterministic trend, although both are close to zero.

Blanchard and Perotti develop their model further, in an attempt to identify the effects on the different components of GDP. Their results are shown in Table 3.8. For both models, they find a positive effect on private consumption, although the size of this effect is quite different between the two models. This is inconsistent with the basic neoclassical model, which would predict a reduction in consumption. They also find negative impacts on investment, exports and imports. Note that the peak effect on GDP is not equal to the sum of the peak individual components of GDP. This is because the peak effects occur at different times. For example, the peak effect on GDP overall with the deterministic trend is in quarter 15. But in that quarter, the cumulative effect on each of the components is not at its maximum.

⁶ These tables draw on the survey by Hebous (2009).

Box 3.2**Estimating the fiscal multiplier**

A variety of techniques have been used to estimate the effects of discretionary fiscal policy on the economy, including the effects on output, consumption, employment and other factors.

The starting point for most models is a Vector Autoregression (VAR) model. This is of the form

$$X_t = A(L)X_{t-1} + U_t$$

where X_t represents a vector of variables (typically, output, government spending and taxation, although more recent approaches include variables such as the stock of debt, exchange rates and interest rates), $A(L)$ is a distributed lag function, and U_t is a vector of error terms. The key issue in using a VAR model is to identify the effects of an exogenous change to either government spending or to tax revenue. Four approaches have been used.

A recursive approach to estimating the effect of a shock to one variable (Sims, 1980) is to assume an ordering of the variables such that one variable – typically government spending – does not react contemporaneously to other variables. The second – typically tax revenue – responds contemporaneously only to the first, government spending. The third – typically output – responds contemporaneously to both, and so on for more variables.

A structural approach (SVAR in Tables 3.7 and 3.9) is used by Blanchard and Perotti (2002), based on a particular structure of the residuals from the estimated relationship. External is used to identify the contemporaneous effects of output on taxation and government spending. These generate instruments which can be used to estimate the contemporaneous effect of taxation and government spending on output. Essentially, the idea is that there are decision and implementation lags which prevent new government spending decisions in a quarter (year) from responding to contemporaneous economic circumstances. Hence, innovations to spending not systematically explained by the evolution of the business cycle (contemporaneous and lagged output gaps), the own dynamics of spending (lagged spending), and the state of the public finance (debt) can be treated as unexpected (structural) shocks to fiscal policy, whose effect on the economy gives information about fiscal transmission. A potential problem in this approach is that the variation in public spending defining these fiscal shocks may actually be the subject of a political debate prior to implementation. Hence they are to some extent anticipated by the private sector, and thus they cannot necessarily be treated as unexpected. As a partial solution to this problem Beetsma et al. (2006) use annual instead of quarterly observations.

A “narrative” approach aims to exploit some clearly exogenous shocks to one of the variables in the system. For example, Ramey and Shapiro (1998) identify changes to government expenditure in several episodes of military build-up in the USA. These episodes are exploited by introducing dummy variables into the VAR. The response of the system to these dummy variables provides a direct estimate of the multiplier.

A clear advantage of a narrative approach is that anticipation effects can be accommodated in the estimation by tracing the timing in which the political discussion about policies with clear fiscal implications (such as going to a war) begins. An important open issue however is that the approach is more effective, the larger the variation in spending or tax changes to be proxied by the dummies. Recent papers have encompassed both of these latter approaches: see Perotti (2007), Ramey (2008). Perotti (2007) provides a useful comparison of these techniques.

A fourth approach is a sign restriction approach, proposed by Uhlig (2005), and used by Mountford and Uhlig (2009) and Pappa (2009a). This involves imposing sign restrictions on the impulse responses of some variables.

A useful critical discussion of identification has recently been provided by Barro and Redlick (2009), who emphasize the problem of reverse causation (output growth explaining more spending) in the macro literature. In their approach, the best identification strategy consists of focusing on episodes of large variations in defence spending (for the US: World War II and the Korean War).

How large is the government spending multiplier? Returning to Table 3.7, there is clearly considerable variation in estimates of the impact of a shock to government spending on overall GDP. Most, though not all, of the estimates are positive (with a few in excess of 1). However, it is worth stressing that confidence intervals are quite large: in most cases the point estimates are not significantly different from zero.

From a theoretical perspective, this overall conclusion should not come as a surprise. Theory has long emphasized that the effectiveness of fiscal stabiliza-

tion crucially hinges on financial development, trade openness, the state of public finances, the exchange rate regime and, last but not least, the health of the financial sector, see e.g. Perotti (1999), Giavazzi and Pagano (1990), Giavazzi, Jappelli, and Pagano (2000), Ilzetzki, Mendoza, and Vegh (2009), and Corsetti, Meier and Mueller (2009b). Linear estimations averaging out multipliers across economic conditions (which can vary over time) may hide large and significant differences. For this reason, the fiscal transmission mechanism should be systematically analysed conditional on different economic environments.

Table 3.7

Estimates of the effects of a government spending increase shock

Study	Data	Period	Technique	Multiplier for output
Ramey and Shapiro (1998)	USA	1947–96	Narrative	approx 1
Fatas and Mihov (2001)	USA	1960–96	Recursive	0.3
Blanchard and Perotti (2002)	USA	1960–97	SVAR	0.9
Perotti (2005)	Australia	1960–79	SVAR	–0.1
	Australia	1980–01	SVAR	0.21
	Canada	1960–79	SVAR	0.59
	Canada	1980–01	SVAR	–0.28
	Germany	1960–74	SVAR	0.41
	Germany	1975–89	SVAR	0.4
	UK	1960–79	SVAR	0.48
	UK	1980–01	SVAR	–0.20
	USA	1960–79	SVAR	1.13
Heppe-Falk et al. (2006)	Germany	1974–04	SVAR	0.62
Ravn (2007)	Australia, Canada, UK, USA		SVAR	0.52
Giordano et al. (2007)	Italy	1960–79	SVAR	0.06
Favero and Giavazzi (2007)	USA	1980–06	SVAR	0.13
	USA	1980–06	SVAR	0.02
Gali et al. (2007)	USA	1954–03	SVAR	0.78
Caldara and Kamps (2008)	USA	1955–06	Recursive	1
	USA	1955–06	SVAR	1
	USA	1955–06	Sign restriction	approx 0.5
	USA	1955–06	Narrative	0
Beetsma et al. (2006)	EU14	1970–04	Recursive	1.2
De Castro and De Cos (2008)	Spain		SVAR	1.31
Ramey (2008)	USA	1947–03	Narrative	approx 1
Pappa (2009b)	Canada	1970–07	Sign restriction	0.18
	EU	1991–07	Sign restriction	0.16
	Japan	1970–07	Sign restriction	0.13
	UK	1970–07	Sign restriction	0.13
	USA	1970–07	Sign restriction	0.74
Bilbiie et al. (2008)	USA	1957–79	Recursive	1.71
	USA	1983–04	Recursive	0.94
Mountford and Uhlig (2009)	USA	1955–00	Sign restriction	0.44

Specifically, focusing on OECD countries, Corsetti et al. (2009b) contrast average linear estimates of the government spending multiplier, with estimates explicitly allowing for “non-linearities”. In their analysis, the estimated linear effect of a government spending shock is in line with the VAR literature on

fiscal transmission: output and consumption multipliers are small and positive; trade balance turns into a deficit; the exchange rate experiences a short-lived real appreciation, followed by a weakening. But these average linear responses are not necessarily confirmed when the estimation is conditional on specific economic features/environments. In

Table 3.8

Effects of government spending shock on components of GDP, from Blanchard and Perotti (2002)

	Deterministic trend estimates		Stochastic trend estimates	
	Peak effect	Quarter	Peak effect	Quarter
Government spending	1.14	4	1.00	1
Consumption	1.26	14	0.46	2
Investment	–1.00	5	–0.98	9
Exports	–0.80	9	–0.37	13
Imports	–0.49	9	–0.08	9
GDP	1.39	15	0.95	1

accord with standard theory, the study finds that spending policies are more effective in relatively closed economies (“openness matters”) and under a peg (“the exchange rate regime matters”); and less effective or even counter-productive in economies with high public debt (“the state of public finances matters”).

Most strikingly, multipliers are significantly larger during years

with financial and banking crises, identified using the information in Reinhart and Rogoff (2008). Indeed, during such episodes the point estimate for the output multiplier is a multiple of the other estimates. While, given the reduced number of observations featuring a crisis (Spain, Japan, Finland and Norway), confidence intervals are large, these results appear to corroborate the argument that fiscal support to economic activity has been key to stabilising output during the current crisis.

Table 3.9 summarises estimates of the multiplier arising from a change in taxation. Beginning with Blanchard and Perotti (2002) again, they find that GDP falls by 0.7 in response to unit increase in taxes. However, there is a large variation in estimates from other papers. The sign of the effect on output is not agreed, and neither is the size. One well-known recent approach is that of Romer and Romer (2010), who identify various exogenous shocks to taxes in the US, and trace out their effects in a single equation model of output. They find a very high effect of taxation.

These results are challenged by Favero and Giavazzi (2009). They point out various restrictions in the Romer and Romer approach – for example, that only tax shocks are incorporated into the model. Relaxing these restrictions, they find much lower estimates: before 1980 the estimate never exceeds 1, and after 1980 it is not significantly different from zero.

The extent to which multipliers change over time is also examined in other papers. For example, Perotti (2005) finds that multipliers are not constant over time or across countries (see Tables 3.7 and 3.9). In particular, this paper presents some evidence that the size of the multiplier has declined over time. A number of possibilities for differences over time are discussed by Perotti, including countries becoming more open and introducing flexible exchange rate regimes. These explanations are consistent with the results in Corsetti et al. (2009b). However, it should be kept in mind that the export/GDP ratio is small in many countries, and also that the evidence of crowding out of net exports by fiscal shock is controversial.

Another possibility is the gradual relaxation of credit constraints over time. Since credit-constrained individuals are more likely to change their consumption in response to a change in the real income, relaxing these constraints is likely to reduce any positive effect on consumption of a positive fiscal shock.

However, while credit constraints may have been progressively relaxed with the process of deregulation and market liberalisation, their incidence can still be expected to fluctuate along business cycle movements. This observation raises a fundamental problem of using the estimates in Tables 3.7 and 3.9 to identify the effects of a fiscal stimulus during the recession, as the extent of credit constraints is itself affected by the recession. As the financial crisis in 2008–09 generally reduced the supply of credit, more

Table 3.9

Estimates of the effects of a tax increase shock

Study	Data	Period	Technique	Multiplier for output
Blanchard and Perotti (2002)	USA	1960–97	SVAR	– 0.69
Perotti (2005)	Australia	1960–79	SVAR	0.46
	Australia	1980–01	SVAR	0.36
	Canada	1960–79	SVAR	0.03
	Canada	1980–01	SVAR	– 0.30
	Germany	1960–74	SVAR	0.22
	Germany	1975–89	SVAR	– 0.02
	UK	1960–79	SVAR	– 0.10
	UK	1980–01	SVAR	0.23
	USA	1960–79	SVAR	– 0.69
	USA	1980–01	SVAR	0.43
Favero and Giavazzi (2007)	USA	1980–06	SVAR	0.02
Caldara and Kamps (2008)	USA	1955–06	Recursive	0
	USA	1955–06	SVAR	0
	USA	1955–06	Sign restriction	– 0.8
Romer and Romer (2009)	USA		Narrative	– 3.0
Mertens and Ravn (2009)	USA	1947–06	Narrative	– 2.17
Mountford and Uhlig (2009)	USA	1955–06	Sign restriction	– 0.2

individuals are likely to have moved into a position of being denied credit. That in turn would make a tax cut, for example, more effective in expanding consumption and hence GDP.⁷ Once again, the estimates by Corsetti et al. (2009b) regarding the effect of spending expansions in crisis periods appear to support this notion.

This is an example of a more general problem with empirical analysis based on VAR models, already

⁷ Auerbach and Feenberg (2000) discuss the automatic stabilising properties of the US income tax with reference to the proportion of consumers who are credit-constrained.

mentioned above in regards to spending policy: the estimated parameters may vary according to economic conditions, and so be an unreliable guide to the multiplier in any other period or country.

3.2 Microeconomic factors

The discussion of the macroeconomic evidence implies that the strength of the fiscal multiplier, and its effects on economic welfare, depends on the particular measures used and the underlying state of the economy. Table 3.10 summarises the fiscal stimulus measures adopted by EU member states in 2009

Table 3.10

Fiscal stimulus measures in the EU, 2009

	Net stimulus		Net contraction	
	Country	Percent of GDP	Country	Percent of GDP
Revenue				
Personal income taxes, including social contributions, capital gains tax and dividends taxes	Belgium Bulgaria Czech Republic Denmark Germany Spain Cyprus Lithuania Malta Netherlands Poland Portugal Slovenia Finland Sweden UK	0.3 0.2 0.5 0.3 0.6 0.5 0.5 0.6 0.2 0.3 0.6 0.2 0.6 0.9 0.7 0.3	Estonia Ireland Latvia Luxembourg Romania Slovakia	0.3 0.8 1.0 0.9 0.8 0.2
Corporate income tax and other business taxes	Czech Republic Denmark Germany France Cyprus Netherlands Poland Portugal Slovenia UK	0.2 0.1 0.1 0.2 0.2 0.2 0.2 0.1 0.4 0.1	Ireland Greece Italy Lithuania Luxembourg Hungary Sweden	0.4 0.2 0.4 0.4 0.3 0.1 0.2
VAT and other indirect taxes	Belgium Spain Portugal UK	0.1 0.6 0.2 0.5	Bulgaria Ireland Greece Cyprus Latvia Lithuania Malta Netherlands Poland Romania Slovenia Slovakia Finland	0.3 0.4 0.2 0.2 0.7 0.7 0.3 0.1 0.2 0.1 0.9 0.2 0.1
Other taxes	Spain France Cyprus Portugal	0.4 0.1 0.1 0.1	Bulgaria Estonia Ireland Greece Italy Luxembourg Poland Romania	0.8 1.1 0.7 0.5 0.1 0.3 0.2 0.1

continued: Table 3.10

Expenditure				
Public investment, support for business, infrastructure and research	Bulgaria	0.1	Ireland	1.2
	Czech Republic	0.4	France	0.2
	Denmark	0.3	Netherlands	0.1
	Germany	0.4		
	Spain	1.0		
	Cyprus	1.3		
	Luxembourg	0.7		
	Hungary	0.1		
	Malta	0.9		
	Poland	0.9		
	Portugal	0.6		
	Romania	1.0		
	Slovenia	0.3		
	Slovakia	0.1		
	Finland	0.3		
Sweden	0.3			
UK	0.4			
Social expenditure	Belgium	0.1	Ireland	0.7
	Bulgaria	0.3	Hungary	0.6
	Czech Republic	0.2	Poland	0.2
	Greece	0.2		
	France	0.1		
	Italy	0.2		
	Latvia	2.1		
	Lithuania	1.4		
	Luxembourg	0.6		
	Portugal	0.2		
	Romania	0.1		
	Slovakia	0.5		
	UK	0.2		
Housing, labour market, education expenditure	Belgium	0.1	Lithuania	0.7
	Germany	0.1	Netherlands	0.4
	Estonia	0.8		
	Greece	0.3		
	France	0.1		
	Malta	0.1		
	Slovenia	0.8		
	Finland	0.1		
	Sweden	0.1		
	Other spending	Belgium	0.1	Czech Republic	0.6
Germany		0.4	Ireland	0.1
Greece		0.2	Italy	0.3
Cyprus		0.2	Lithuania	1.4
Slovenia		0.1	Hungary	0.5
Finland		0.1	Malta	1.2
			Poland	0.7

Source: European Commission (2009a)

(more details are shown in the Appendix), which is taken from European Commission (2009a).

It is easy to see how different measures with the same fiscal cost could have different impacts on aggregate demand. For example, a credit-constrained household would generally like to increase its consumption, but is unable to do so because of the lack of opportunity for borrowing. A tax cut aimed at such households would be immediately translated into an increase in consumption, boosting aggregate demand. The effect of the same tax cut on a household that could already borrow as much as it wanted to would be much smaller. Broadly, we would expect such a household to hardly regard the tax cut as

increasing its lifetime wealth. So, such a measure would tend to generate some additional spending, but also additional saving. In the context of the increased uncertainty generated in a recession, it would be plausible to believe that much of the increased wealth would initially be saved.⁸

To see how various measures may have different effects, compare three forms of fiscal stimulus, say: (a) an increase in social security benefits for the less well-off, who are more likely to be credit-constrained; (b) a

⁸ Some evidence on households' response to tax rebates after the start of the crisis is provided by Parker, Souleles, Johnson and McClelland (2009), who study the impact of the 90 billion dollar tax rebates in 2008 on consumer spending in the US. This study finds the response to be largest for lower-income households and homeowners.

reduction in the general VAT rate; and (c) a reduction in the income tax rate. Neither (b) nor (c) need to be targeted towards groups that are more likely to spend the additional income. It is therefore likely that there would be a greater effect on aggregate demand per euro of a fiscal stimulus from (a).

As Table 3.10 indicates (and the Appendix sets out in more detail), many countries did enact increases in social expenditure, which are more likely to lead to increases in aggregate demand. Unlike most of the other categories in the Table, only three countries actually reduced social expenditure. By contrast, few countries sought to stimulate their economies by reducing the VAT rate – and many sought to offset the costs of a stimulus elsewhere by increasing the rate. Where the VAT rate was cut, it was sometimes a temporary measure: the UK, for example, introduced a lower rate for one year only. The fact that the VAT rate was due to rise again may have provided a greater stimulus to higher spending, as we discuss below. However, many countries also reduced income taxes and other taxes on individuals.

Similar considerations apply to business investment. Here measures designed to create additional incentives to invest, such as a more generous definition of taxable profit through increasing depreciation allowances, may have had some effect for firms that are not credit-constrained. Of course, even these firms may be unwilling to respond to such incentives, given the uncertainty surrounding the returns to investment.

Such measures are unlikely to have any impact on the investment of firms which cannot raise finance. By contrast, for such firms, measures which encourage lending by banks would have a greater impact on investment. Alternatively, a simple cut in the tax rate may achieve this, by allowing firms to retain a higher proportion of pre-tax profit. However, this would only be true for firms that were profitable entering the recession. For firms making a taxable loss, a reduction in the tax rate may represent a cost, as the value of any tax rebate would be lower.

In general, in setting fiscal stimulus packages, European governments appear to have targeted personal consumption more than business investment. While 17 countries did make reforms to business taxation, only 10 of these represented a cut, while 7 actually increased their tax take from business.

The apparent preference for measures targeted at personal consumption may not be surprising if it was believed that firms would be reluctant to undertake significant investment in the midst of a recession: investment is generally more volatile than consumption, and is perhaps less likely to respond to any form of fiscal stimulus. Nevertheless, investment clearly has longer term benefits in creating conditions for greater output in the future.

Public spending measures were more heavily targeted towards such activity. Many countries increased public investment or provided additional support for infrastructure spending and research.

Overall, though, the Table suggests that there has been no firm consensus amongst EU governments on the appropriate fiscal response to the financial and economic crisis. In each of the categories in the Table, some countries created a positive discretionary stimulus while others created a negative one. This to some extent may reflect differing conditions between countries. But it also suggests that there has been considerable uncertainty about the appropriate types of fiscal policy required to best combat the crisis.

4. When and how should deficits be reduced?

In some parts of the EU at least, the political debate has moved swiftly on from the need for a fiscal stimulus to a recognition that fiscal deficits have grown substantially and need to be reduced. This raises two related questions. First, how quickly should deficits be reduced? Second, how can they be reduced?

4.1 The costs of maintaining high fiscal deficits

A first point to note is related to the analysis above. The larger part of the fiscal deficits currently facing EU governments does not result from discretionary policy in response to the financial and economic crisis. It is due to partly to an automatic response, and partly to structural factors which would have created larger deficits in any event. The automatic responses result from lower growth, which is translated into lower than expected tax receipts and higher than expected costs of social transfers.

These automatic factors work in reverse as economies move out of recession: economic growth will raise revenues (and typically, coming out of a recession, revenues rise more quickly than the underlying growth of

Box 3.3**Credit Default Swaps**

A credit default swap (CDS) is a financial instrument in which the buyer makes a series of payments to the seller in exchange for a payoff if a credit instrument defaults.

This can be seen as a form of insurance. For example, suppose A lends €100 to B. Then A could purchase a CDS on that debt which would pay €100 in the event that B defaults on the repayment. The CDS spread is the annual amount that A pays to the insurer over the length of the contract, expressed as a percentage of the insured amount.

An important difference from a normal insurance contract, though, is that the purchaser of this CDS need not be A. That is, other investors can purchase the CDS even though they do not bear the underlying risk. That implies that the CDS can be used as a speculative instrument rather than as a means of insurance. Such opportunities for speculative investment raise regulatory issues about such contracts.

The underlying credit instrument can be a government-issued security. For such assets, the spread can be used as a measure of the price of the risk associated with that security by the market. However, there are caveats to using the spread for such a purpose. The main caveat is that the CDS only has value if the seller of the security is able to make the insurance payment in the event the government in question defaults. If, for example, the US government were to default, then it is highly likely that many financial companies would also default, and the CDS insurance payment would not be made. The spread should therefore be seen as reflecting the joint probability that the government defaults but that the seller of the CDS does not default.

Leaving that aside, in a well-functioning capital market, the spread on the CDS should be equal to the annual risk premium which the government would have to pay on issuing debt. The yield on such debt will also reflect other factors, such as expectations of future interest rates. So the difference in yields will not exactly match CDS spreads.¹ This is why the CDS spread itself is potentially a useful measure of the risk premium.

¹ The differences in yields across countries are shown in Figure 1.26 in Chapter 1.

the economy). And as unemployed and others find work, social transfers are reduced and replaced by higher tax revenues.

It is possible to do some basic calculations to estimate how long it would take for economic growth to lift the EU back to a position of budget balance. Take as a starting point the projections made by the European Commission for revenue and public expenditure as a proportion of GDP in 2010; these are 44.1 percent and 51.1 percent respectively, and would result in an overall stock of public debt of 79.4 percent of GDP.

Now suppose that the EU returns to a steady state 2 percent growth from 2011 onwards. Assume also that revenues rise slightly faster than economic growth (so that the elasticity of revenues with respect to GDP is 1.1) and that public expenditure is held constant in real terms. Under this scenario, the EU as a whole would return to fiscal surplus in 2017, reaching a peak debt/GDP ratio in 2016 of approximately 100 percent.

Obviously, the return to a fiscal surplus would be faster if economic growth were higher, and slower if public expenditure rose in real terms. For example, if instead, public expenditure grew at just 0.5 percent per year in real terms, then a fiscal surplus

would not be reached until 2019, and the debt/GDP ratio would peak at 106 percent. On the other hand, if expenditure were kept constant in real terms, and growth were 2.5 percent per year, a fiscal surplus would be reached in 2016, with debt peaking at 95 percent of GDP.

While there is of course, considerable uncertainty about future growth rates, and about the ability of EU governments to hold down public expenditures relative to the rate of economic growth, these projections suggest that it will be some years – and possibly a decade or more – before the EU can reach a fiscal surplus and begin to cut the aggregate stock of debt. Of course, this will happen more quickly in some countries than in others.

What are the costs of maintaining such high levels of debt? The most obvious cost is that of servicing the debt through interest payments. At the end of 2009, the yields on 10 year bonds issued by EU governments lie mostly in a range between 3.2 percent and 3.8 percent, although some countries lie outside this range (for example, Ireland and Greece). Yields on shorter-dated bonds tend to be lower than this. But very roughly, the nominal cost of servicing debt at the 2010 level of around 80 percent of GDP is approximately 3 percent of GDP. For example, the European Commission's current projections of the

interest liability in 2010 are: 3 percent of GDP in Germany, 3.1 percent in France, 3.1 percent in the UK, 1.9 percent in Spain, and 4.8 percent in Italy. As the stock of debt inevitably rises, these costs will increase further.

The cost will rise as interest rates rise above their current low levels. And the interest rate for the debt of any country will depend on how risky that debt is perceived by financial markets. The risk of the debt depends on a number of factors. Clearly, it depends on the size of the outstanding debt as a proportion of GDP. But it also depends on the rate at which that debt is increasing, and the state and prospects of the economy.

In addition, some countries have provided guarantees to private sector bank debt which could result in large liabilities but which are not reflected in the measures of the current stock of public debt. Some evidence on the extent of the contingent liabilities taken on by governments through their financial sector interventions is shown in Table 3.10, which shows the size of a number of different measures undertaken by EU governments to stabilise their banking sectors.

Three forms of intervention are shown: capital injections, guarantees on bank liabilities, specific relief on impaired assets and other direct bank support. The Table also shows the extent of guarantees on deposits. As would be expected, these forms of intervention varied considerably across countries. To take one notable example, the UK has injected capital into banks worth around 2.6 percent of GDP; it has provided guarantees for bank liabilities of over 11 percent of GDP, and has injected a further nearly 15 percent of GDP in supporting banks through relief for impaired assets and other measures. As such, the UK clearly has contingent liabilities that are not reflected in the figures for public debt presented in Section 2 of this chapter. Other countries also have huge contingent liabilities, notably Ireland, and to a lesser extent, Belgium and the Netherlands.

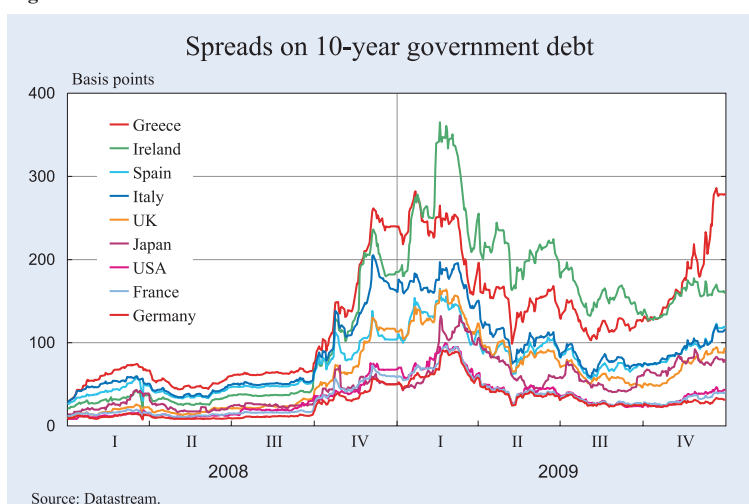
One way of assessing the perceived risk is to look at the spreads of credit default swaps on sovereign debt.

Figure 3.1 shows the development of CDS spreads on 10 year bonds issued by a number of governments since the beginning of 2008. Prior to the development of the financial crisis, these spreads were typically less than 0.1 percent. They increased dramatically over the course of the crisis, reaching much higher levels – and in the case of Ireland, around 3.5 percent. Since then, they have declined again, though they remain well above their pre-crisis levels.

The spreads at the end of 2009 differ considerably across countries. Spreads in Germany have fallen back considerably to around 0.3 percent. The spreads in France and the USA are slightly higher at around 0.4 percent. However, the UK's spread is only a little under 1 percent, Ireland is at 1.6 percent and Greece is at 2.6 percent. The higher spread in the UK may reflect the high level of the current deficit in the UK, even though its stock of debt is not out of line with that in France or Germany. It may also reflect the potential liabilities that the UK has in providing guarantees to the UK financial system. The high spreads for Ireland and Greece reflect their much higher risk.

The cost to governments in terms of higher interest payments due to the risk reflected in these CDS spreads is, however, modest. Most government debt is issued at a fixed rate of interest. The selling price of a new government bond will reflect the risk which the market attaches to that bond, and this implicitly defines the premium which the government must pay. Also, as risk rises, the market price of existing debt falls, reflecting the higher rate of return required by the market. But it is the owners of existing bonds that bear this cost through the reduction in the value of

Figure 3.1



their asset: the cash paid by the government on existing debt does not change.

The cost to governments of the risk premia associated with these CDS spreads therefore apply only to new debt and not to the stock of debt. New debt includes both new borrowing and the replacement of debt which matures, and so exceeds the fiscal deficit. (For example, a government with a new debt of say 10 percent of GDP and a risk premium of 0.5 percent would need to pay an additional 0.05 percent – i.e. one twentieth of one percent of GDP – a year to service this debt.) While these amounts may still be significant – especially for governments with high current deficits – they are small relative to the overall costs of servicing the stock of debt.

Of course, the longer that these risk premia are maintained, though, the more their cost will build up as more and more of the stock of debt has been issued at relatively high risk premia. To reduce these risk premia in the short, medium and long term, it is necessary for governments to demonstrate that they have credible plans to reduce the deficits in the medium term, thereby reducing the possibility of eventual default.

One option here would be simply to point to the type of calculations set out above: that with economic growth and holding down expenditure rises, then deficits will eventually be closed. But other policies may also be required. We now discuss options for such policies.

4.2 Options for reducing deficits

The most obvious problem facing governments that wish to reduce their fiscal deficits is that doing so may generate a negative fiscal stimulus, reducing or even overturning any economic recovery. The evidence for this is summarised above in Section 3. Given the depth of the recession which faced the EU in 2008 and 2009, governments should be cautious in raising taxes or cutting expenditure to reduce their deficits. The costs associated with a delay in such policies are relatively small compared with the possible costs of restricting economic growth.

But there is an important timing issue. As discussed in Section 3, timing works mostly through intertemporal substitution effects. Consider, for example, the possibility that a government may try to develop a credible strategy for reducing its deficit by announc-

ing a rise in income tax. If implemented at an early stage, when the economy is still at the beginning of its recovery path, the rise would be expected to generate some reduction in spending, which would be a negative shock to the economy. Now compare that option with an announcement that the rise in income tax will take effect with sufficient delay – say in one or two years' time. In this case, the government would be delaying the reduction in the deficit, presumably in the hope of allowing the economy to recover further before implementing the change. The problem with this is that individuals who face a future rise in their income tax perceive a reduction in their lifetime wealth immediately. They therefore consider themselves to be worse off now, and consequently would be likely to reduce their spending now. There is of course the possibility that individuals would seek to bring income forward from the following year in order to benefit for the lower tax rate while it lasts. This could provide a stimulus to the economy. But shifting income across years is generally much harder than shifting consumption. So it seems implausible that this effect could outweigh the effects on the economy of the reduced spending.

The main lesson here is that, from the vantage point of the effect of changes in taxes on permanent income, the announcement of a future income tax rise may not have specific advantages over the announcement of an immediate income tax rise. The timing of the fiscal adjustment, however, can and does make a large difference through channels other than permanent income.

A clear instance is provided by taxes on consumption, such as VAT and excise duties. Suppose the government announced that the rate of VAT would rise in one year's time. This would also reduce the lifetime wealth of individuals in the sense that, for a given income, they would be able to afford to buy less goods and services. The higher tax burden would tend to depress the economy, as would be the case with other tax rises.

However, the announcement could provide an important fiscal stimulus, since there would be a clear incentive to bring forward spending to take advantage of the lower VAT rate before it was increased. This would provide an immediate stimulus to current private demand, despite raising additional revenue in the medium term.

In some ways such a policy mirrors the fiscal stimulus measure announced by the UK government in

December 2008: to reduce the VAT rate from 17.5 percent to 15 percent for a fixed period of about one year. Arguably the most effective element of this stimulus was its fixed time period. A permanent reduction in the VAT rate may not have had a large effect at the point at which the country entered a recession. But the fact that the rate increased again a year later is likely to have had a more significant impact on consumption in 2009.

A second important instance (already discussed in Section 3) is the possibility of designing consolidation packages including cuts of government spending below trend. Anticipation of lower public demand in the future tends to contain long-term interest rates (as future short term rates will be lower). Lower real rates in turn stimulate current demand. The effect of anticipated cuts is expansionary because, to the extent that firms set prices subject to nominal rigidities, today's prices will already optimally incorporate expectations of the path of future demand and inflation. With sticky prices, prospective spending cuts (all else equal) lower prices, containing the dynamic of inflation, and thus allowing the central bank to be more expansionary.

For the above mechanism to work, however, the central bank must be able to control policy rates, i.e. the economy cannot be in a situation in which the central bank would like to lower policy rates, but it cannot, because these are already at zero. In these circumstances, as shown by Corsetti et al. (2010), the timing of fiscal adjustment is crucial.

With a near-zero nominal interest rate, implementing spending cuts too soon would add to the deflationary pressure of the ongoing recession. These pressures may end up raising inefficiently the interest rates in real terms, and may possibly exacerbate the zero-lower-bound problem. In contrast, a *delayed* implementation of spending cuts can be quite beneficial, as it would help the central bank maintain an expansionary monetary stance *after* the economy exits from the zero-lower-bound constraint (and it may shorten the period of the zero lower bound episode).

These considerations are important in light of the fact that the large rise in public debt requires fiscal consolidation to be substantial. Households reasonably expect adjustment not to take place exclusively via increases in taxes but also via some cut in spending. With interest rates still close to zero, anticipation of early spending cuts may actually harm the effective-

ness of current fiscal stimulus, as their deflationary impact materialises when the economy is still struggling with the aftermath of the recessionary shock. A credible plan gradually phasing in spending cuts over a two year horizon not only can reduce this risk: it can also enhance the expansionary impact of the ongoing fiscal stimulus.

A final point to note here concerns the need for coordination across countries. As noted in the introduction, in 2008 there was general agreement that enacting a fiscal stimulus would be more effective if all (or at least many) countries followed a similar policy, increasing demand everywhere. By contrast, a single country enacting a stimulus on its own would see much of the stimulus flowing abroad through the purchase of imports.

But in light of the need to consolidate debt, measures to reduce public deficits across the world sum up to a global recessionary impulse. In this case, international policy coordination may still be beneficial insofar as it would be a way to internalise the negative demand spillovers on foreign output created by fiscal adjustment in a country. To wit: the same way in which coordination leads to stronger global stimulus at the start of a recession, coordination would lead to gradualism in fiscal consolidation once the initial stimulus is withdrawn. If all countries simultaneously reduced their deficits by increasing taxes and reducing spending ignoring spillovers, aggregate demand would fall everywhere too much, and adjustment would create a much greater recessionary impulse, possibly harming the nascent world recovery.

However, coordination is not necessarily desirable. The risk is that gradualism in the name of coordination could provide an excuse to delay the adoption of the necessary measures to preserve stability. Appealing to the need for a coordinated fiscal consolidation, for instance, incumbent governments may leave unpopular decisions for future governments to make.

Conversely, in the current circumstances it makes sense that the worst hit countries or the countries with the most fragile public finances should adjust upfront and most deeply so as to prevent the spreading of concerns about fiscal sustainability. The benefits from coordination, which may be small initially, can quickly turn largely negative if this ends up interfering with the most efficient path of debt consolidation.

5. Conclusions

In this Chapter we have discussed a number of issues surrounding the large rises in fiscal deficits in Europe. The key points raised are as follows.

- There have been large increases in budget deficits throughout the EU, leading to considerable rises in the stock of public debt as a percentage of GDP. In 2009, the total deficit in the EU was around 6 percent of GDP, and it is expected to rise further in 2010. There has been a corresponding increase in outstanding debt, rising to 72 percent of GDP in 2009 and to nearly 80 percent of GDP in 2010.
- There are also wide variations across countries. The UK, Ireland and Latvia have particularly high deficits, though in all three cases their outstanding debt is moderate. Italy, Greece and Belgium have much higher outstanding debt, though all three have had high debt for some years.
- These high deficits have generally not reflected discretionary changes by EU governments. While most governments introduced a discretionary fiscal stimulus in 2008 and 2009, these were small relative to the overall deficits. The form of these discretionary changes (and even their sign) has varied considerably between countries.
- There is considerable empirical evidence that a fiscal stimulus has a positive effect on output, although there are many problems in measuring the effect, so that the size of the fiscal multiplier is not known with any certainty. In any case, there is little reason to suppose that effects estimated on historic data are likely to be valid in the midst of a recession. This is particularly the case when interest rates are effectively at zero and the economy is shaken by an ongoing financial and economic crisis, when there may be very large multipliers for government spending. There is also little reason to suppose that different forms of fiscal intervention have similar effects.
- The scope for reducing deficits depends crucially on the rate of economic growth achieved over the next few years, and the degree to which real public spending can be curtailed. For example, a simple calculation suggests that if spending is kept constant in real terms throughout the EU, then economic growth of around 2 percent would see the aggregate EU deficit reduced to zero by 2017, with outstanding debt reaching a peak of around 100 percent of GDP. Of course, some countries would need a higher growth rate to achieve fiscal balance within this period.
- There are costs of maintaining high levels of debt, though these should not be exaggerated. Especially at low interest rates, the cost of servicing debt is of the order of 3 percent of GDP, though again there is considerable variation across member states. Two factors could increase this cost in the short to medium term. First, interest rates are likely to rise. Second, public debt appears increasingly risky to the market, which implies that higher risk premia could be charged.
- Although these risk premia are currently not large, they could be lowered – or at least prevented from growing – if governments announced credible strategies to reduce deficits over the medium term. A downside of such a strategy is that announcements of future tax rises may hamper the economy immediately as individuals perceive their lifetime income to be lower.
- One way of reconciling the need for a credible deficit-reduction strategy with the need to avoid harming a fragile economy is to announce rises in taxes on spending – such as VAT – to take effect from some future period, say in one year's time. This would induce individuals to bring spending forward, which would provide a temporary stimulus to the economy.
- Another way consists of announcing well-designed measures bringing government spending on goods and services below trend, to be implemented sufficiently far in the future as to avoid the risk of exposing the economy to additional deflationary pressures when policy interest rates are still close to zero. Provided that they are not implemented too early, future spending cuts are beneficial to the recovery, as they contain the rise in long-term interest rates (as well as attenuating concerns about debt sustainability).
- A final point concerns co-ordination. In attempting to stimulate the economy there were gains from co-ordination. For an individual country, a stimulus to spending might be largely reflected in increased imports, creating demand for goods and services produced elsewhere. A coordinated policy reduces this risk. In principle, the same argument also applies (with a different sign) to fiscal adjustment. If all countries implemented a contractionary fiscal adjustment simultaneously and independently, without internalizing negative output spillovers abroad, then this would be likely to hamper the economic recovery. This adverse effect would be reduced if such policies were introduced in a coordinated way, possibly leading to more gradualism.

- However, coordinated gradualism should not interfere with the adoption of measures necessary to preserve stability. The worst hit countries or the countries with the most fragile public finances should adjust upfront and most deeply, to prevent the spreading of concerns about fiscal sustainability. If gradualism in the name of coordination feeds doubts about debt consolidation, then no coordination is a much better option.

References

- Auerbach, A. and D. Feenberg (2000), “The Significance of Federal Taxes as Automatic Stabilizers”, *Journal of Economic Perspectives* 14, 37–56.
- Barro, R. J. and C. J. Redlick (2009), “Macroeconomic Effects from Government Purchases and Taxes”, NBER Working Paper 25369.
- Baxter, M. and R. King (1993), “Fiscal Policy in General Equilibrium”, *American Economic Review* 83, 315–34.
- Beetsma R., M. Giuliodori and F. Klaasen (2006), “Trade Spillovers of Fiscal Policy in the European Union: a Panel Analysis”, *Economic Policy*, 48, 640–87.
- Bilbiie, F., A. Meier and G. Müller (2008), “What Accounts for the Changes in U.S. Fiscal Policy Transmission?”, *Journal of Money Credit and Banking*, 40, 1439–70.
- Blanchard, O. and R. Perotti (2002), “An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output”, *Quarterly Journal of Economics* 117, 1329–68.
- Caldara, D. and C. Kamps (2008), “What are the Effects of Fiscal Policy Shocks? A VAR-based Comparative Analysis”, European Central Bank Working Paper 877.
- Christiano, L. J., M. Eichenbaum and S. Rebelo (2009), “When is the Government Expenditure Multiplier Large?”, NBER Working Paper 15394.
- Corsetti, G., A. Meier and G. Müller (2009a), “Fiscal Stimulus with Spending Reversals”, International Monetary Fund Working Paper 09/106.
- Corsetti, G., A. Meier and G. Müller, G. (2009b), “When Where and How Does Fiscal Stimulus Work”, mimeo, EUI.
- Corsetti, G., K. Kuester, A. Meier and G. Müller (2010), “Debt Consolidation and Fiscal Stabilization of Deep Recessions”, *American Economic Review Papers and Proceedings*, forthcoming.
- De Castro, F. and P. de Cos (2008), “The Economic Effects of Fiscal Policy: the Case of Spain”, *Journal of Macroeconomics* 30, 1005–28.
- Eggertsson, G. (2009), “What Fiscal Policy is Effective at Zero Interest Rate”, Federal Reserve Bank of New York Staff Report 402, November.
- Eggertsson G. and M. Woodford (2004), “Optimal Monetary and Fiscal Policy in a Liquidity Trap”, *NBER International Seminar on Macroeconomics* 2004.
- Erceg, C.J. and J. Lindé (2010), “Is there a Fiscal Free Lunch in a Liquidity Trap?” CEPR Discussion Paper 7624.
- European Commission (2009a), “Public Finances in EMU”, European Commission Directorate-General for Economic and Financial Affairs.
- European Commission (2009b), “Sustainability Report 2009”, European Commission Directorate-General for Economic and Financial Affairs.
- Eurostat (1995), “European System of Accounts”, <http://circa.europa.eu/tirc/dsis/nfaccount/info/data/ESA95/en/titelen.htm>
- Fatás, A. and I. Mihov (2001), “The Effects of Fiscal Policy on Consumption and Employment: Theory and Evidence”, CEPR Discussion Paper 2760.
- Favero, C. and F. Giavazzi (2007), “Debt and the effect of fiscal policy”, NBER Working Paper 12822.
- Gali, J., J.D. López-Salido and J. Vallés (2007), “Understanding the Effects of Government Spending on Consumption”, *Journal of the European Economic Association* 5, 227–70.
- Giavazzi, F. and M. Pagano (1990), “Can Severe Fiscal Contractions be Expansionary? Tales of Two Small European Countries”, *NBER Macroeconomics Annual* 5, 75–111.
- Giavazzi, F., T. Jappelli and M. Pagano (2000), “Searching for Non-Linear Effects of Fiscal Policy: Evidence from Industrial and Developing Countries”, *European Economic Review* 44, 1259–89.
- Giordano, R., S. Momigliano, S. Neri and R. Perotti (2007), “The effects of fiscal policy in Italy: Evidence from a VAR model”, *European Journal of Political Economy* 22, 707–733.
- Hebous, S. (2009), “The Effects of Discretionary Fiscal Policy on Macroeconomic Aggregates: A Reappraisal”, mimeo, University of Frankfurt.
- Heppke-Falk, K., J. Tenhofen and G. Wolff (2006), “The Macroeconomic Effects of Exogenous Fiscal Policy Shocks in Germany: a Disaggregated Analysis”, Deutsche Bundesbank Discussion Paper 41.
- Izetzki E., E. Mendoza and C.A. Vegh (2009), “How Big are Fiscal Multipliers?”, CEPR Policy Insight 39.
- IMF Staff Position Note (2008), “Fiscal Policy for the Crisis”, SPN/08/01.
- Kellaway, M. (2009), “Public Sector Interventions in the Financial Crisis”, London, Office for National Statistics.
- Mertens, K. and M. Ravn (2009), “Understanding the Aggregate Effects of Anticipated and Unanticipated Tax policy Shocks”, mimeo, EUI.
- Mountford, A. and H. Uhlig (2009), “What are the Effects of Fiscal Policy Shocks?”, *Journal of Applied Econometrics* 24, 960–92
- Pappa, E. (2009a), “The Effects of Fiscal Shocks on Employment and Real Wages”, *International Economic Review* 50, 217–44.
- Pappa, E. (2009b), “The Effects of Fiscal Expansions: an International Comparison”, mimeo, Universitat Autònoma de Barcelona.
- Parker J. A., N. S. Souleles, D. S. Johnson and R. McClelland (2009), “Consumer Spending and the Economic Stimulus Payments of 2008”, mimeo, The Wharton School, University of Pennsylvania.
- Perotti, R. (1999), “Fiscal Policy in Good Times and Bad”, *Quarterly Journal of Economics* 114(4), 1399–1436.
- Perotti, R. (2005), “Estimating the Effect of Fiscal Policy in OECD Countries”, Proceedings, Federal Reserve Bank of San Francisco, <http://www.frbsf.org/economics/conferences/0503/fpoecd.pdf>.
- Perotti, R. (2007), “In Search of the Transmission Mechanism of Fiscal Policy”, *NBER Macroeconomic Manual* 2007 22, 169–226.
- Ramey, A. (2008), “Identifying Government Spending Shocks: It’s All in the Timing”, NBER Working Paper 15464.
- Ramey, A. and M. D. Shapiro (1998), “Costly Capital Reallocation and the Effects of Government Spending”, *Carnegie-Rochester Conference Series on Public Policy* 48, 145–94.
- Ravn, M., S. Schmitt-Grohé and M. Uribe (2007), “Examining the Effects of Government Spending Shocks on Consumption and the Real Exchange Rate”, mimeo, Duke University.
- Reinhart, C. M. and K. Rogoff (2008), “Banking Crises: An Equal Opportunity Menace”, NBER Working Paper 14587.
- Romer, C. and D. Romer (2010), “The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks”, *American Economic Review*, forthcoming.
- Sims, C.A. (1980), “Macroeconomics and reality”, *Econometrica* 48, 1–48.
- Tenhofen, J. and G. Wolff (2007), Does Anticipation of Government Spending Matter? Evidence from an Expectation Augmented VAR, Deutsche Bundesbank Discussion Paper 14.
- Uhlig, H. (2005) What are the effects of monetary policy? Results from an agnostic identification procedure. *Journal of Monetary Economics* 52, 381–419.
- Van den Noord, P. (2000), The Size and the Role of Automatic Fiscal Stabilizers in the 1990s and Beyond, OECD Economics Department Working Paper 230.
- Villaverde J. F. (2010), “Fiscal Policy in a Model With Financial Frictions”, *American Economic Review Papers and Proceedings*, forthcoming.
- Woodford M. (2010), Simple Analytics of the Government Expenditure Multiplier, presented 2010 AEA meetings.

Appendix:
Fiscal stimulus measures in Europe in 2009

	Belgium	Bulgaria	Cyprus	Czech Republic	Denmark	Estonia	Finland
	Tax revenue measures (percent of GDP)						
Personal income tax	Flemish income tax cuts (-0.2 percent); Federal income tax cuts (-0.1 percent)	Increase in mandatory minimum insured income thresholds (0.7 percent)			Income tax cuts (-0.3 percent)		Income tax cuts (-0.7 percent); Lowering tax on pension income (-0.1 percent)
Deductions from personal income tax base							Increasing various tax deductibles (-0.1 percent)
Social contributions		Cut in the pension social contribution rate (-0.9 percent)		Reduced social security contributions (-0.5 percent)		Increase in unemployment insurance contribution rate (+0.3 percent)	
Corporate income tax			Reduction of the corporate tax rate for the semi-governmental organisations (-0.2 percent)				
Investment allowances				Write-down of capital goods (-0.2 percent)			
Other measures on business taxes					Tax credit for companies (-0.1 percent)		
Capital gains taxes			Application of the reduced VAT rate on hotel accommodation (<0.1 percent)				
Dividend taxes			No dividend income from semi-governmental organisations (-0.5 percent);				
VAT	VAT reduction for residential construction (-0.1 percent)						

Excise duties		Increase in excise rates on kerosene, coal, and electricity for economic and administrative needs and cigarettes (0.3 percent)	Increase of the excise duty on petrol (0.15 percent)				Increase in alcohol and tobacco excises (0.05 percent)
Measures related to housing		Increase in property valuations for local property taxes (0.3 percent)					
Environmental taxes							
Other measures		Increase of the healthcare contribution (0.5 percent)	Reduction of landing fees at airports and cancellation of overnight stay fees levied by local authorities on hoteliers (-0.12 percent)			Increase in social tax minimum contribution basis (+0.5 percent); Suspension of state contributions to the mandatory funded pension scheme (+0.6 percent)	
Government expenditure measures (percent of GDP)							
Public investment		Higher capital spending (0.1 percent)				Building repair and maintenance (0.1 percent); Municipal investments (0.1 percent)	
Support for business and industry			Boosting tourism promotion and encouraging domestic tourism (0.13 percent of GDP)			Supporting enterprises access to finance (0.2 percent)	
Social expenditure		Increase in pensions (1 percent); Increase in allocations for salaries in the budgetary sector (0.3 percent)		Indexation of pensions (+0.2 percent)			
Housing expenditure			Application of the minimum VAT rate on building land (<0.1 percent)			Boosting construction of rental housing (0.05 percent)	
Infrastructure spending			Increase of public	Infrastructure	Green transport	Boosting	

				infrastructure investments (1.2 percent)	investment (+ 0.4 percent)	infrastructure (0.1 percent)	infrastructure investment (0.1 percent)	
Spending on research								
Spending on education								
Spending on labour market measures	Reduction in the tax wedge on labour through subsidies (0.1 percent)							
Spending on public sector employment								
Spending on environmental issues								
Other expenditures	Acceleration of payment of invoices (0.1 percent)		Compensating measures offsetting the impact of the increase on the excise duty on petrol (0.15 percent)	Government consumption and wages (- 0.6 percent)			Funding municipal mergers (0.05 percent)	
Tax revenue measures (percent of GDP)								
	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	
Personal income tax		Income support, incl. cut in income tax (- 0.2 percent)	One-off supplementary tax contribution for taxpayers with annual income above 60,000 euro (>0.1 percent); The introduction of a new tax on stock options, in line with rules pertaining to wage income (<0.1 percent)		Widening of standard rate tax band (- 0.1 percent); Introduction of income levy (0.7 percent);			Reduction of personal income tax; increase of minimum wage; increase of threshold of PTT tax-exemption (0.63 percent).
Deductions from personal income tax base		Re-introduction of commuter allowance (- 0.1 percent)						
Social contributions		Reduction in social contributions rates (- 0.3 percent)						Maintaining the rate of social contribution accruing into the state funded pension scheme and increasing the

Corporate income tax								Corporate income tax relief (- 0.1 percent)	minimum wage (+ 0.34 percent).
Investment allowances									
Other measures on business taxes	Acceleration of government payments to corporations (- 0.3 percent); Increase of the tax on the turnover of complementary insurance and on pharmaceutical companies (0.1 percent)	Support to private investment, incl. more favourable depreciation rules (- 0.1 percent)	Increase in the advance payment rate for enterprises to 80 percent from 65 percent (0.15 percent)	Temporary tax (surcharge) on profits of energy companies (+ 0.1 percent)	Advancing corporation and capital gains tax payment dates (0.3 percent)	One-off tax on revaluation of company assets (+ 0.2 percent); Taxes on energy/banking/insurance sectors (+ 0.3 percent)			
Capital gains taxes	New tax on capital gains (0.1 percent)		The introduction of a tax rate on dividends; the same rate holds for capital gains (<0.1 percent)		Increase in capital gains tax rate (0.1 percent)			Increase of standard and reduced VAT rates (+ 1.92 percent).	
Dividend taxes	Change in the dividend taxation (- 0.1 percent)								
VAT					Increase in standard VAT rate (0.1 percent)				
Excise duties			Increase in the excise duties of tobacco and alcohol (0.15 percent)		Increase in excise duties (0.3 percent)			Increases of excise taxes on alcohol, tobacco, petrol, and certain non-alcoholic beverages (+ 0.74 percent)	
Measures related to housing					Reduction of stamp duty top rate (- 0.1 percent)				
Environmental taxes									

Other measures	Fiscal package (- 0.1 percent)	Tax settlement (0.5 percent)	Introduction of health levy, change in pay related social insurance (0.5 percent); Transfer of pension fund assets (0.3 percent)	Intensified fighting of tax evasion/avoidance (+ 0.1 percent)	
Government expenditure measures (percent of GDP)					
Public investment	Additional public investment (- 0.3 percent)	Investment, incl. infrastructure (+ 0.3 percent)	Reprioritisation of public investment (- 1.2 percent)		
Support for business and industry	Aid for housing and automobile industry (0.1 percent)	Industry support (+ 0.1 percent)			
Social expenditure	Measure in favour of low income households (0.1 percent)	National Fund for Social Cohesion (0.2 percent)	Social welfare package (0.3 percent); Savings in social transfers (- 0.3 percent); "Pension levy" on public sector wages (- 0.4 percent)	One-off household income support (+ 0.2 percent)	Increase in social payments (+ 2.1 percent)
Housing expenditure					
Infrastructure spending			Capping the 13th monthly pension payment (- 0.2 percent); Suspension of the 13th monthly salary in the public sector and nominal freeze of public wages (- 0.25 percent); Savings in social transfers (- 0.15 percent)		
Spending on research					
Spending on education					
Spending on labour market measures	Making work pay measure (0.1 percent)	Labour market support (+ 0.1 percent)	Modernisation and subsidy programme for district heating schemes (+ 0.1 percent)		
Spending on public		Restraining public	Reduction in public		

sector employment			sector employment growth (0.3 percent); Cuts in the public sector's high-level officials' remuneration (<0.1 percent)		service payroll (- 0.2 percent); Postponement of agreed pay increase (- 0.1 percent)		
Spending on environmental issues		Environmental premium (+ 0.2 percent)					
Other expenditures		Higher expenditure on the health-care sector (+ 0.2 percent)	10 percent cut in elastic public expenditure items; Public wages freezing for 2009 (0.2 percent)	Cuts in the operational costs of budgetary institutions (- 0.2 percent); Cuts in government programmes (- 0.25 percent)	Reduction in overseas development aid (- 0.1 percent)	Rationalisation of government resources (- 0.3 percent)	
Tax revenue measures (percent of GDP)							
	Lithuania	Luxembourg	Malta	Poland	Portugal	Romania	Slovenia
Personal income tax	Reduction of personal income tax (- 0.45 percent)	Indexation of personal income tax brackets (0.9 percent)	Widening of personal income tax bands (- 0.2 percent)	Personal income tax (- 0.6 percent)			Elimination of payroll tax (- 0.6 percent)
Deductions from personal income tax base							
Social contributions	Inclusion of some professions into social security system (0.17 percent); Ongoing pension reform (2nd pillar) (- 0.3 percent)				Temporary reduction of social contributions for selected groups (- 0.2 percent)	Increase of social contribution rate (+ 0.8 percent)	
Corporate income tax	Increase of corporate income tax and tax on dividends (0.4 percent)						Reduction of corporate tax rate (- 0.1 percent)
Investment allowances							Additional investment allowance for companies (- 0.1 percent); Additional investment

Other measures on business taxes		Abolition of the tax paid on the capital of a new company or on an increase in the capital of an existing one (0.3 percent)		Taxes on business (- 0.2 percent)	Support to firms liquidity (- 0.1 percent)		allowance for sole proprietors (- 0.2 percent)
Capital gains taxes							
Dividend taxes							
VAT					Reduction of the VAT standard (- 0.15 percent)		
Excise duties	Increase in excise duties on fuel, tobacco and alcohol (0.65 percent)		Increase in excise duty (0.3 percent)	Excise duties (+ 0.2 percent)		Increase of excise duties (+ 0.1 percent)	Increase in excise duties (0.9 percent)
Measures related to housing					Lower tax burden related to housing assets (- 0.1 percent of GDP)	Updating the tax base for local property taxes (+ 0.1 percent)	
Environmental taxes			Environmental measures (0.1 percent)				
Other measures		Replacement of the tax reduction for children by a tax bonus (0.3 percent)	Motor Vehicle Licences reform (- 0.1 percent)				
Government expenditure measures (percent of GDP)							
Public investment		Increase in government investment: 0.7 percent of GDP	Investment projects related to industry (0.1 percent); Higher incentives for investment (0.2 percent); Support for tourism (0.1 percent)	Investment (+ 0.3 percent); Investment (+ 0.6 percent)		Public investment (+ 1 percent)	
Support for business and industry					Special support to activity, exports and SMEs (0.1 percent); Support to firms (0.1 percent)		Support for SMEs and start-up companies (0.1 percent)

Housing expenditure									
Infrastructure spending				Infrastructure – roads, maritime facilities (0.2 percent); Investment in educational institutions (0.3 percent)			Renewal of schools premises (0.2 percent); Investment in energy and telecommunications infrastructure (0.2 percent)		
Spending on research				Education (0.1 percent)				Subsidies for investment in new technologies and R&D (0.2 percent)	
Spending on education									
Spending on labour market measures								Wage subsidy for shorter hours worked (0.6 percent)	
Spending on public sector employment				Cuts in public sector wages (–0.7 percent)				Public sector wage bill (0.2 percent)	
Spending on environmental issues				Sustainable development at local level (0.1 percent); Environmental measures (0.1 percent); Reduction in energy subsidies (–1 percent)				Cuts in personnel expenditure (–0.9 percent)	
Other expenditures				Reduction in other subsidies (–0.4 percent)					
				Reduction in transfers to local governments (–0.5 percent); Cuts in current government expenditure (–0.9 percent)	Intermediate consumption (–0.7 percent)			Lower expenditure on goods and services (–1.3 percent)	Increases in specific transfers in kind (0.1 percent)

	Slovakia	Spain	Sweden	The Netherlands	United Kingdom
	Tax revenue measures (percent of GDP)				
Personal income tax	Income tax (- 0.2 percent)	Reduction in Personal Income Tax (- 0.47 percent)	Lower taxes on earned income (- 0.5 percent); Lower taxes on pensions (- 0.1 percent)		Lower income taxation (- 0.3 percent)
Deductions from personal income tax base			Tax deductibility of home improvement services (- 0.1 percent)		
Social contributions	Changes in social contributions and capital transfers from the second pension pillar (0.4 percent)		Lower social contributions (- 0.3 percent)	Reduction in social contributions (- 0.3 percent)	
Corporate income tax			Lower corporate income tax (- 0.2 percent)		
Investment allowances			Changed deduc- tibility of interest costs for companies (+ 0.2 percent)	Accelerated depreciation for investments (- 0.2 percent)	
Other measures on business taxes			Changed under- pricing rules for certain companies (+ 0.2 percent)		Deferral of busi- ness rate increase (- 0.1 percent)
Capital gains taxes					
Dividend taxes					
VAT		Change of the system of VAT returns (- 0.56 percent)			VAT rate reduction (- 0.6 percent)
Excise duties	Excise duties on tobacco (0.2 percent)			Increase in excise duties (0.1 percent)	Tobacco and alcohol duties (0.1 percent)
Measures related to housing					
Environmental taxes					
Other measures		Specific reduction of tax withholdings to taxpayers with		Lower health care premiums (- 0.1 percent);	

			mortgages (-0.15 percent); Abolition of the wealth tax (-0.21 percent)			Exceptional ex- penses deductible (0.1 percent)	
Government expenditure measures (percent of GDP)							
Public investment			Central Government Fund for Local Public Investment (+0.72 percent)				Front-loading capital spending (0.2 percent)
Support for business and industry	Subsidy for purchases of new cars (0.1 percent)		Fund to improve certain strategic sectors (+0.27 percent)				Support for busi- ness and industry (0.2 percent)
Social expenditure	Changes in welfare measures (0.5 percent)						Social and housing expenditure (0.2 percent)
Housing expenditure							
Infrastructure spending					Increased invest- ment in and main- tenance of infra- structure (+0.2 percent)	Increase in infra- structure projects (-0.1 percent)	
Spending on research					Increased education and research expenditure (+0.1 percent)		
Spending on education						Increase in edu- cation expenditure (-0.3 percent)	
Spending on labour market measures					Increased coaching, activation and training of unemployed (+0.1 percent)		
Spending on public sector employment						Labour market measures (-0.1 percent)	
Spending on environmental issues							
Other expenditures							

Source: European Commission (2009a).

IMPLICATIONS OF THE CRISIS FOR US ADJUSTMENT NEEDS

1. Introduction

The US economy is arguably following an unsustainable trajectory. The main indicators of this are a large current account deficit, a large federal budget deficit and trend-wise increasing costs of Social Security and Medicare. In this chapter, we will discuss these observations and to what extent the financial and economic crisis may have changed the outlook. Before this, we need to define what we mean by sustainability. An often used definition of sustainability is that the inter-temporal budget restriction is satisfied. In the context of fiscal sustainability, this means that the discounted sum of current and future government revenues (at least) covers the discounted sum of current and future outlays plus the value of current outstanding debt. Similarly, a sustainable path of current accounts must imply that the discounted value of income generated by exports of goods and services covers the cost of imports and other transfers to abroad plus the initial value of foreign debt. Sustainability implies that the ratios of government debt to GDP and foreign debt to GDP do not follow an explosive path.¹

Defining a sustainable fiscal policy as one that satisfies the inter-temporal budget constraint is not free of problems. First, it can be argued that it is trivial in the sense that if extraordinary income, like inflation taxes or the implicit income generated by defaults is included, all government spending will be financed in one way or another. Second, the definition requires that the future is predictable, which is difficult, but the definition also allows different future scenarios. The multitude of different future possibilities calls for other criteria to be included in the definition of sustainability. Specifically, one may require that the future paths of government revenues and outlay should (i) be fair from an inter-generational perspec-

tive, (ii) be efficient, for example, not involving strongly increasing or variable tax rates, and (iii) that they should be politically feasible. The latter is certainly an important issue in the US, where tax paths that would be easy to implement in Europe may be politically impossible in the US.

Despite these caveats, an important policy question is whether current fiscal policy, including current spending programmes and tax law, is sustainable given forecasts of economic growth and demographic change. If this is not the case, creditors will in some way or another force the government to change its policy. Pre-crisis estimates of the long-run sustainability of US fiscal policy suggests that government income would have to be raised and/or expenditure cut. Gokhale and Smetters (2003) calculated that the required change is dramatic – to be sustainable, the government's fiscal balance would have to be permanently improved by 6.5 percent of GDP over pre-crisis long run forecasts (see Box 4.2). To the extent that the crisis will have long-run negative effects on economic growth and activity, the required adjustments are even larger. The Congressional Budget Office (CBO, 2009a), has calculated that the required adjustment has increased and is now 8.1 percent of GDP. They also show that by waiting, the required adjustment continues to grow; to 9.7, 12.1 and 15.5 percent of GDP if adjustments wait for another one, two or three decades, respectively. These figures illustrate the claim by Kotlikoff (2006) that the US is going bankrupt.

Recognising that fiscal sustainability requires a long-run perspective on future spending and revenues, our aim in this chapter will, however, be narrower. We will focus on two questions. We will first describe how fiscal deficits have evolved over recent years and in particular study how the forecasts for the coming decade have changed during the crisis. This allows us to discuss whether the crisis has increased the urgency of fiscal consolidation. The second question is to what extent the current account deficit of the US is an indicator of a non-sustainable consumption pattern that needs to be corrected.

¹ See, e.g., Neck and Sturm (2008) on this.

Before discussing the empirical issues, we need to demonstrate some arithmetic facts and make some definitions. The definition of sustainability as derived from the inter-temporal budget constraint of the government implies that public debt as a share of GDP is non-explosive. However, this does not rule out a permanent deficit. As shown in Box 4.1, a permanent fiscal deficit d will lead to a stable debt-to-GDP ratio of d/g where g is the growth rate of nominal GDP. If, for example the deficit is 3 percent, a 5 percent growth rate of nominal GDP leads to a stable debt-to-GDP ratio of 60 percent. Given that interest rate on government debt tends to be larger than the growth rate of GDP, a positive debt crowds out other types of spending or requires higher government revenues, i.e. it must be financed by a primary surplus. In steady state this crowding out is equal to the relative difference between the interest rate and the growth rate times the deficit. As an example, if interest rates are 6 percent and the growth rate of GDP is 5 percent, the interest rate is 20 percent larger than the growth rate. A permanent deficit of

say 3 percent thus requires a primary surplus of $(0.2 * 0.03 =)$ 0.6 percent of GDP. During the transition to the steady state from a lower debt ratio, the crowding out is smaller than in steady state. Therefore, the transition involves inter-generational transfers from future to current generations.

2. US government debt

Let us now focus on the development of the debt of the US government. An immediate problem is that there are a number of different definitions of government debt. The two main dimensions in which these measures differ are (i) what branches and levels of government are included and (ii) whether the measure is gross or net of financial assets like loans to the private sector, shares in publically traded companies and foreign exchange reserves. A particular problem, making international comparisons difficult, is that assets and liabilities related to the pension system are treated differently in different countries. For example, the US government has an un-

Box 4.1

The arithmetic of stable deficits

The law-of-motion for public debt can be written

$$b_{t+1} = (b_t + d_t)/(1 + g_{t+1}) \quad (1)$$

where b_{t+1} is the debt-to-GDP ratio in period $t+1$, g_{t+1} is the nominal growth rate of GDP between period t and $t+1$ and d_t is the fiscal deficit. Here we note that the term $1 + g_{t+1}$, i.e., GDP-growth, tends to reduce the debt ratio. All else equal, a high rate of GDP growth dilutes the debt-to-GDP ratio by spreading a given debt over a larger GDP base.

It now follows immediately that as long as growth is positive, any constant deficit will lead to a non-explosive debt ratio and is therefore consistent with the general definition of sustainability. Specifically, assuming for simplicity a constant GDP growth rate, a constant deficit d leads to a constant debt ratio of d/g . We see this by assuming all variables in equation (1) to be constant and then solving for b :

$$b(1 + g) = b + d \Rightarrow b = \frac{d}{g}$$

This is, however, generally not a free lunch for the government, since a higher debt requires more interest payments. Specifically, note that the fiscal deficit can be written

$$d_t = r_t b_t - p_t \quad (2)$$

where r_t is the interest rate on public debt and p_t is the *primary surplus*, defined as government revenues minus net interest payments. Using the steady state result $b=d/g$ in this equation and solving for p , we find that in a steady state with deficit d , the primary surplus must satisfy

$$p = d \frac{r - g}{g} \quad (3)$$

Thus, as long as the interest rate is higher than the GDP growth rate, a permanent deficit leads to a debt buildup that requires a permanent primary surplus. Specifically, at any point in time, sustainability requires that outstanding government debt equals the discounted sum of all future *primary surpluses*.

The arithmetic of budget deficits can easily be adapted to the issue of sustainability of the foreign affairs of a country. The equivalent of a budget deficit is a current account deficit, and a permanent current account deficit is therefore in principle consistent with sustainability. Specifically, a constant current account deficit CA leads to a stable foreign debt ratio b_f equal to CA/g , where g is the growth rate of nominal GDP. The counterpart of the primary surplus is the trade balance plus other net income from abroad not related to the debt position. Sustainability requires that the initial foreign debt is matched by future surpluses from trade and other income.

Box 4.2

Long run fiscal and generational imbalances

To evaluate the long run fiscal sustainability and inter-generational fairness, the development of government debt is an insufficient indicator. A major reason is that various long-term government payment obligations, notably in Social Security and Medicare, are underfinanced and the shortfall is not included in the national debt. Gokhale and Smetters (2003) argue that the government should report two more informative measures, namely the fiscal imbalance (FI) and the generational imbalance (GI). The first is defined as the difference between the present value of projected government spending (not counting interest payments) plus current debt and the present discounted value of projected revenues. Both spending and revenues are calculated using current spending programmes and tax law but take into account trends in demography and expected growth. If FI is positive, it means that sooner or later government spending must be reduced and/or revenues (taxes) increased to prevent government bankruptcy – i.e., the current fiscal system is not sustainable.

The generational imbalance is defined as the share of the fiscal imbalance that is due to *past and living* generations. A higher GI measure thus implies that past and living generations are passing on a debt to future generations.

Gokhale and Smetters (2003) estimate that FI is of an order of 4 times GDP, i.e. much larger than the official debt. About 80 percent of this debt is due to the Medicare system being seriously underfinanced in the long run. Around 40 percent of the deficit in the Medicare system is due to past and living generations. This means that past and living generations are handing over a debt larger than GDP to future generations via Medicare. The imbalance in social security is smaller but is mostly due to past and living generations, implying that another debt almost as large as GDP is handed over to future generations.

The calculations by Gokhale and Smetters imply that US fiscal policy is very far from being sustainable. Changes must necessarily be made and the later these are undertaken the larger they must be. If measures are taken immediately, they are still very large. If no spending cuts are undertaken, revenues must permanently be increased by 6.5 percent of GDP. If this extra revenue is to be achieved by income taxes, these have to be raised by 16.6 percentage points according to Gokhale and Smetters calculations. Alternatively, Social Security and Medicare spending could be permanently cut in half.

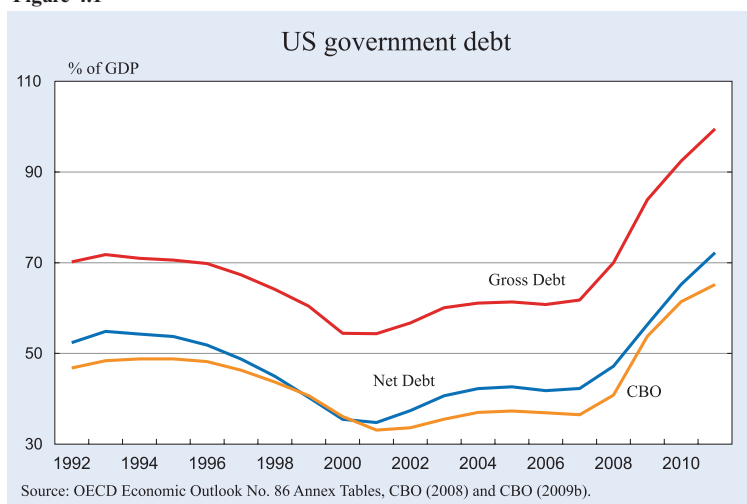
The European Commission regularly publishes sustainability reports (EU 2009). The key index is the S2 indicator that in principle is similar to the GI measure. However, rather than expressing the deficit in the inter-temporal budget, it is defined as the necessary improvement in the government budget to reach sustainability. The S2 indicator shows that also EU needs to change its fiscal policies. In particular, the aging population implies that the fiscal balance of the EU as a whole needs to be improved by 3 percent permanently. This number should be compared to the 6.5 percent necessary improvement for the US. In the latest sustainability report, the consequences for sustainability of various post-crisis scenarios are evaluated. It is shown that if growth remains lower than what was previously expected for the coming decade, only gradually returning to trend at 2020, an extra percentage point improvement in the fiscal balance is required to reach sustainability.

funded pension liability to its own employees amounting to around 10 percent of GDP that is not included in the official debt figures.² For other countries, this implicit debt may be larger or smaller than for the US.

In Figure 4.1, we report three measures of the US government's debt. The upper curve is the OECD's measure of general government gross financial liabilities including forecasts for year 2009–2011.³ Here, all branches and levels of the government are consolidated, but financial assets of the government are not deducted from the debt. The next curve from above is the OECD

measure of net debt, where the government's financial assets are deducted from its financial liabilities. The third curve is the Congressional Budget Office's (CBO) measure of US federal government debt held by the public.⁴ Assets and intra-government assets and liabilities are here netted out.

Figure 4.1



² OECD reports that this debt was 10.2 percent of GDP in 2005.

³ OECD Economic Outlook No. 86 Annex Tables.

⁴ Historical data from CBO (2008) and forecasts from CBO (2009).

In Figure 4.1, we see that the curves for OECD net and gross debt are fairly parallel. A closer look reveals that net debt has been around 70 percent of the gross figure for the whole period. The higher debt level for the forecast years 2009–2011, shows that while the net debt remains at around 70 percent of gross debt, the difference has increased from less than 20 to close to 30 percentage points. We also note that while the CBO measure of net debt differs from OECD measures, the differences are quite small, reflecting small levels of debt in state and local government. Since the net debt is the one most relevant for our notion of sustainability and since CBO produces biannual long-run forecasts of the US fiscal balances, we will use the CBO measure for the analysis in this section.

In January 2008, just before the full consequences of the financial crisis for the macroeconomic developments became apparent, the CBO forecasted that the fiscal deficit would continue to be on a decreasing trend. After three years of declining deficits, CBO forecasted a small reduction in deficits to around 1.5 percent of GDP for 2008–2011, a smaller deficit for 2012 and surpluses thereafter. Thus, the pre-crisis forecast implied substantially falling debt-to-GDP ratios over the coming decade. That meant that the trend towards increasing debt was broken. This is shown in Figure 4.2 as the blue solid

Figure 4.2

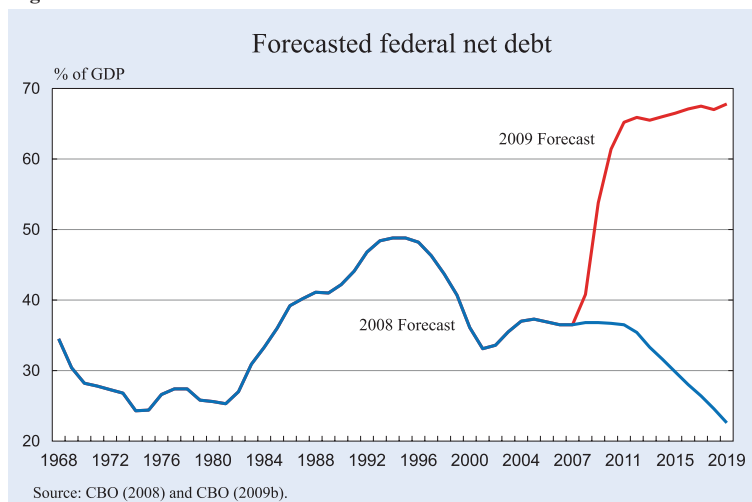
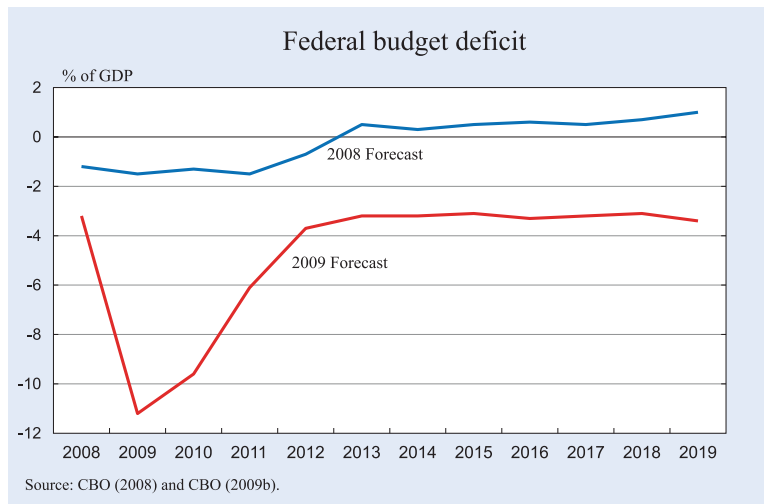


Figure 4.3



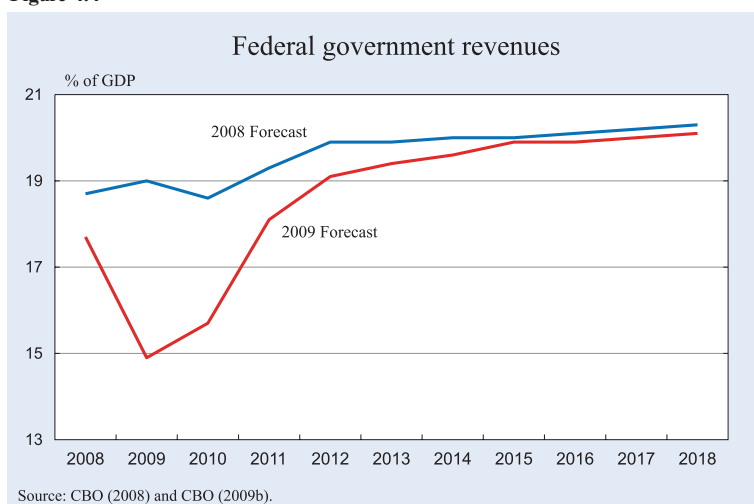
line, where data from 2008 are the forecasts done in January 2008.

The CBO forecasts changed dramatically during the macro-financial crisis. In August 2009, the forecast was that the debt of the US government would increase at a high speed. The increasing trend in the debt as a share of GDP during the 1980s seems to be back and perhaps even stronger than before, as indicated by the red dashed line.

CBO's federal deficit forecasts calculated in January 2009 and August 2009 are shown in Figure 4.3. The largest change in the forecast is for the year 2009. In January 2008, the forecast was a deficit of 1.5 percent of GDP. Half way into 2009, this forecast had changed to an unprecedented deficit of 11.2 percent. In fact, this is almost twice as large as the previous record deficit of 6.0 percent in 1983. Furthermore, the CBO forecast implies that the deficit remains above the previous record in 2010 and 2011.

Furthermore, while GDP growth was according to the 2008 CBO forecast projected to rebound substantially in 2012, the budget deficit is not expected to return to the previous track. The 2008 real GDP growth forecast was a moderate 2.9 percent for 2012 and 2.6 percent for 2013 and 2014. During this period, the 2008 forecast implied a turnaround in deficits, from negative in 2012 to

Figure 4.4



positive from 2013 onwards. The revised CBO growth forecasts implied a high 5.0 percent real GDP growth rate for 2012 and 4.5 and 3.0 percent growth for 2013 and 2014, respectively. Despite these optimistic growth forecasts, deficit-to-GDP ratios are projected to be close to 4 percentage points higher during this period than previously forecasted. Subsequently, there is even a tendency for the discrepancy between the two forecasts to increase.

The gigantic increase in the deficit for 2009 is due to a 4.1 percentage point reduction in revenues and a 5.7 percentage point increase in outlays. As seen in Figure 4.4, the difference between the two revenue forecasts is temporary, reflecting a projected rebound of tax bases. By 2011, the difference is 1.1 percentage points and falls to close to zero after that. The picture for outlays is quite different and depicted in Figure 4.5. Even at the end of the forecast period, i.e., in 2018, total outlays as percentage of GDP are in the 2009 forecast are close to 4 percentage points higher than in the 2008 forecast. Most of the increases in outlays are projected to fade away over time. For example, the Troubled Asset Relief Program (TARP) and costs associated with the support to Fannie Mae and Freddie Mac add a full 3 percent of GDP to the projected deficit for 2009. The American Recovery and Reinvestment Act also adds substantial amounts to the federal deficit. This comprehensive

fiscal stimulus act contains tax cuts to individuals and firms as well as increased spending on infrastructure, education and transfers such as more generous unemployment benefits. The CBO estimated that the bill increases the deficits by 1.3 percent of GDP for the fiscal year 2009, which ended on 30 September 2009. The budgetary effects peak during the fiscal year 2010 at 2.8 percent of GDP and then fall to below 1 percent of GDP the following year.

The large debt build-up during the crisis means increasing interest payments in the long run. In the 2009 forecast, interest payments are nearly three times as high as in the 2008 forecast, i.e., 3.3 percent rather than 1.2 percent of GDP.

As we noted in the introductory section, sustainability requires that the outstanding government debt is balanced by future primary surpluses. Before the 2009 crisis, government debt was in the order of 35 percent of GDP. For this debt ratio to remain stable, future primary surpluses needed to average a few 10ths of a percent of GDP. In Figure 4.6, we depict the primary surplus forecast before and after the crisis. Before the crisis the forecasts implied the primary surplus should stabilise at around 2 percent of GDP. This clearly exceeded what was necessary to keep the debt ratio constant but was, as noted above, far from sufficient to compensate for the projected long-term increases in

Figure 4.5

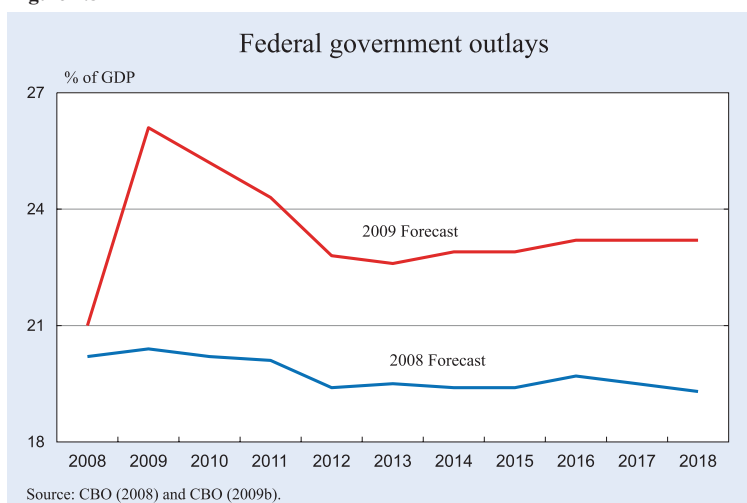
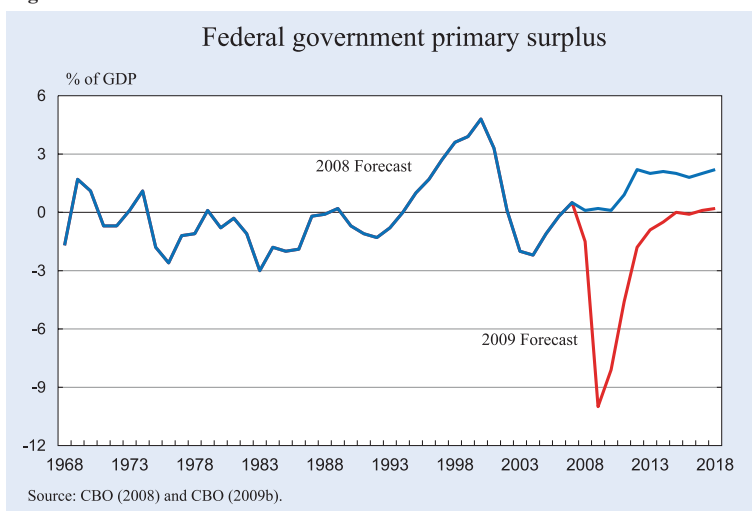


Figure 4.6



the costs of Medicare and Medicaid after the depicted forecast period.

The 2009 crisis has changed the picture quite dramatically. The debt build-up due to the crisis is around 50 percent of GDP, which will require additional future primary surpluses in the order of a quarter to a third of a percent of GDP. Instead, the latest forecast implies primary surpluses around 2 percentage points of GDP lower than the pre-crisis forecast. Clearly, if there were doubts about fiscal sustainability before the crisis, these doubts have strengthened substantially. There now seems to be no other way for the US than to immediately reconsider its fiscal policies. This must be done sooner or later, but on grounds of intergenerational equity and efficiency, sooner is better than later.

3. US current account

For some time, the US current account has been at the centre of policy discussions about the so called global imbalances. A key feature of these imbalances is the large current account deficit in the US, financed by surpluses in swiftly developing Asian countries, notably China, and in oil exporting countries. The sustainability of the current account deficit of the US has been questioned. Furthermore, the large demand for liquid assets from surplus countries has led to low interest rates in a time of high output growth rates and, in particular, optimistic expectations about future growth.

Although it is clear that a balanced current account at all times should not be a policy target, a large cur-

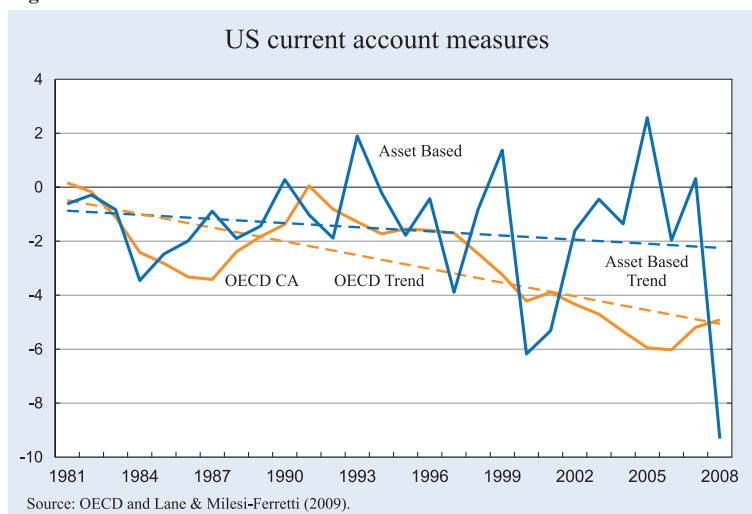
rent account deficit is worrisome. If it is unsustainable, it must eventually be corrected, and there is ample empirical evidence that such corrections often are done in the form of a “sudden stop”, where creditors abruptly halt the financing of a deficit. If such a sudden stop were to happen to the US, this would obviously have dramatic consequences for the global economy. Even if the US current account deficit was not directly responsible for the crisis, it continues to be a worry. However, it is important to note that there

are substantial discrepancies in different measures of the US current account. As we will see, these measures differ substantially in how alarming a picture they paint. By definition, a country's current account deficit is equal to the change in its net foreign liabilities. Measuring the current account by summing flows of income should yield the same result as measuring the change in the values of assets and liabilities. However, since income generated by revaluations in assets and liabilities are not necessarily recorded accurately, there are large discrepancies between the measures.⁵

Figure 4.7 shows two measures of the US current account from 1981 to 2008. The solid line with squares is the OECD measure, calculated from transactions data. The solid line without squares is instead measured as the yearly change in the net asset position of the US. The dotted lines are linear regression trends. As we see, there are substantial differences between the two curves. The transaction-based measure is consistently negative, except for a small surplus in 1981 and 1991. There is also a strong negative trend such that the current account worsens by 1.7 percentage points per decade. The valuation based measure is instead dominated by large swings, reflecting large revaluations of the asset positions of the US. The trend in the latter measure is barely negative at -0.5 percentage points per decade. The average deficit over the whole period differs substantially – it is 2.8 percent of GDP for the transaction-based measure and only 1.6 percent for the valuation based. The difference is large

⁵ See Gourinchas and Rey (2007a,b), Curcuru et al. (2008) and Hausman and Sturzenegger (2007).

Figure 4.7



also for the last decade, where the valuation-based measure is at a deficit of 2.2 percent and the transaction based at 4.8 percent. Also including 2009 will reduce this difference but only by about 1 percentage point.

Looking at the two curves, it is clear that the discrepancies between the two current account measures have increased quite dramatically over time. To understand this, we need to consider the fact that behind the trend-wise deterioration of the US net asset position, there are much larger changes in gross positions. Since 1986, when the net US foreign debt was approximately zero, net foreign debt has increased to 24 percent of GDP in 2008. However, gross assets have increased from 33 percent in 1986 to 139 percent in 2008 and gross debt from 33 to 164 percent of GDP during the same period. Thus, the ratio of debt to assets has only increased from unity to 1.17. Under-reporting of income generated by the increasing large gross foreign asset position yields an increasing divergence between the two measures. Since revaluations of foreign assets and liabilities are more volatile than export and import, the volatility of a valuation-based measure increases relative to the OECD measure as gross positions increase.

As we have seen, both measures of the current account show a downward trend in the current account. Clearly, the continuation of these trends is not consistent with sustainability. However, in exact parallel to the case of fiscal deficits, sustainability does not necessarily rule out a stable deficit. Suppose that the US current account deficit stabilised at some level. In such a scenario, the US net

foreign debt ratio might continue to increase, but not indefinitely. The reason is that nominal GDP growth tends to reduce debt as a fraction of GDP. When GDP grows, the debt can grow at the same speed without increasing the debt-to-GDP ratio. Since a growing debt is equivalent to a current account deficit, the latter is consistent with a constant debt ratio. Applying the calculations in Box 4.1, we find that this constant debt ratio is given by the current account deficit divided by the nominal growth rate of GDP.

Again assuming a 5 percent growth rate of US nominal GDP, a current account deficit of say 3 percent would lead to the foreign debt stabilising at $\frac{3}{5} = 60$ percent of GDP, i.e. approximately a doubling of the current debt. A debt of 60 percent of GDP is large but not large enough to be obviously impossible to sustain. Again in parallel to the case of fiscal deficits, a constant debt ratio needs to be balanced by a positive trade balance in the same way government debt must be financed by a positive primary surplus. In other words, part of the revenue generated from abroad must be used to pay the percentage difference between the interest rate and GDP growth times the deficit and cannot be used for consuming imports. Given that the interest rate on US foreign debt remains only marginally above the growth rate of GDP, sustainability in itself requires only quite small increases in the trade balance to stabilise this higher foreign debt level.

So far, we have implicitly assumed that the return on assets and liabilities is equal. However, the US has consistently earned a higher return on its foreign assets than what it pays on its foreign debt. Gourinchas and Rey (2007a), for instance, report that over the post-Bretton Woods period, the average real return on US foreign assets has been as high 6.8 percent while the real interest rate paid on liabilities has been 3.5 percent. While there is some debate on the magnitude of the US return privilege (Curcucu et al. 2008), there is little doubt that net inflow of asset income has been historically positive. To the extent that this return privilege remains, a

more highly leveraged portfolio generates more income to the US and even a portfolio where liabilities are larger than assets can generate a positive income that can be used to finance a negative trade balance.

US net nominal capital income from abroad is $r_a A - r_l L$, where r_a and r_l are the nominal rates of return on assets and liabilities, respectively. As noted by Obstfeld and Taylor (2005), there is a tipping point, given by r_a/r_l , such that only if the ratio L/A is larger than the tipping point, net capital income is negative. Given the historical real capital returns and adding an inflation rate of 2 percent, the tipping point is 1.6, i.e., substantially above the current value, indicating that if historical rates are maintained, the US still *makes money* on its foreign asset portfolio.

Suppose that the real rate of return paid on US foreign debt remains at 3.5 percent and that the inflation rate is 2 percent. Suppose also that the current account stabilizes at 3 percent. Then, if the US had no foreign assets or had no return privilege, the trade balance must be positive at a value given by one third of a percent of GDP if the nominal GDP growth rate is 5 percent. With current assets of 139 percent of GDP and a return privilege of 3.3 percent, this generates excess revenues of 4.5 percent of GDP, i.e., much larger than the trade balance required without the return privilege. If the return privileges were to disappear, the US would therefore need to make very substantial adjustments, in particular reduce consumption very dramatically. Such a change would most likely require large dollar depreciation.

Recently, several authors have analyzed the reasons for the return privilege. Gourinchas and Rey (2007a) decompose the return difference into a return effect and a composition effect. The latter comes from borrowing in one type of assets and investing in another, for example borrowing in fixed income short maturity instruments and investing in stocks. The return effect instead arises to the extent that the US manages to get higher returns on assets than on liabilities within each asset class.

It is well known that maturity conversion is an important part of US foreign investment strategy – Gourinchas and Rey call the US the “venture capitalist” of the world. By investing in foreign equity and borrowing in short maturity bonds, the expect-

ed return on assets is higher than the cost of borrowing. Quite surprisingly, however, Gourinchas and Rey (2007a) find that the return privileges are mostly accounted for by the return effect. Of the three plus percentage point return privilege in the post-Bretton Woods period, only about a quarter can be accounted for by the composition effect. Doubt is cast on this result, however, by Curcuru et al. (2008), who argue that the US earns little excess return within asset classes. As yet, this issue is unresolved.

It seems reasonable that the more developed financial markets in the US allow its citizens to take on more risk. Thus, the US is in a better position to take advantage of the equity premium. To the extent the return premium is due to the equity premium, it seems reasonably safe to assume that it will remain. Less, however, is known about return differences within similar assets. In a recent paper, Hassan (2008), shows that returns on similar assets denominated in different currencies do vary systematically. Assets denominated in currencies of large OECD countries have paid substantially lower returns over the period 1980–2007. The estimates are stark – increasing the size of a country from zero to 10 percent of world GDP reduces the rate of return by over 2 percent. The result appears quite robust and holds for bonds of different maturities as well as for stocks. Hassan also provides a theoretical explanation for his findings. A shock to the productivity in a country affects its real exchange rate. Since a large country has a larger impact on the world, its exchange rate is more negatively correlated with world consumption of tradables. Therefore, assets denominated in the currencies of large countries provide a better insurance against fluctuations in tradables consumption and yields a lower expected return.

There is a systematic currency bias in the US foreign portfolio – assets are more often denominated in foreign currency than liabilities. Therefore, Hassan’s results point to a fundamental factor indicating that the return privilege of the US may remain, also if it is not due to maturity conversion. But clearly, much caution is warranted regarding this prediction. The surprisingly strong appreciation of the dollar in autumn 2008, when the crisis took a sharp negative turn, and the dollar behaviour afterwards, have also focused attention on the hedging properties of different currencies and assets against “disaster” risk. According to a leading opinion among market participants, also men-

tioned by Fed chairman Ben Bernanke in a public speech in November 2009, the US currency strengthens whenever markets' assessment of global systemic risk increases. Specifically, this opinion seemingly contrasts different regimes driving global risk factors, whereas fear of disasters would motivate a flight to quality into the largest economic and military power of the world. This observation points in the same direction as the argument of Hassan (2008) – the US enjoys a return privilege because of the currency composition of its assets and liabilities – although, again, the quantitative relevance is unclear.

4. Concluding discussion

The medium-run forecasts of government debt before the crisis were consistent with sustainability, showing a primary surplus for the coming decade. In the longer run, however, there is no doubt that very large adjustments are necessary and will be undertaken, voluntarily or by the force of creditors. In particular the cost of Medicare, Medicaid and Social Security is forecasted to grow substantially, mostly due to a larger share of elderly. This is shown in Figure 4.8.

The worrisome factors behind the longer run sustainability have certainly not disappeared during the current economic crisis. The difference between before and after the crisis is instead that now also the medium-run forecasts point towards non-sustainability. We are also worried that the discrepancy between what US citizens' expectations of what the government should provide and how much tax they

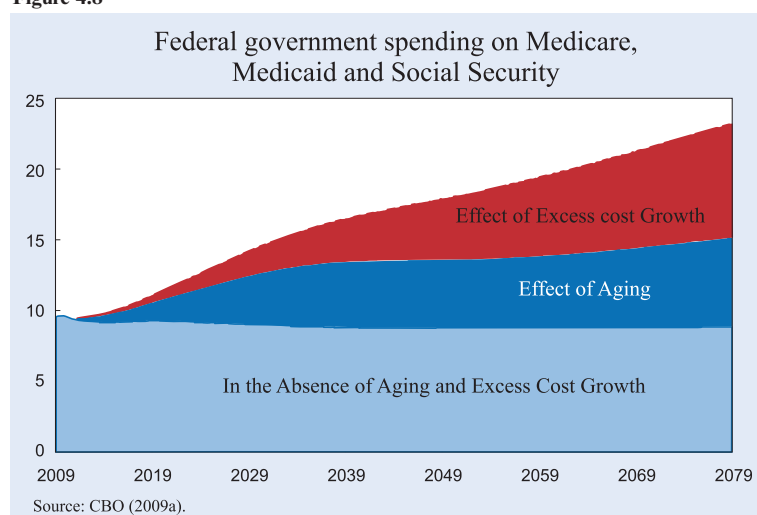
are willing to pay has widened during the crisis. Although increased taxes and spending cuts should not be undertaken before the economy is well on its way out of the crisis, we urge the US government as well as fellow economists to help prepare US citizens to accept substantial changes. A serious discussion about the introduction of a federal value added tax and increased personal income taxes must begin immediately.

We also believe that the US government should systematically produce indicators of its long-run fiscal viability and the consequences for intergenerational redistribution of current policies. Such indicators should be based on forecasts of spending and revenues given current laws and long-term projections of growth and demographic change. Sustainability indicators are already produced for the EU by the European Commission but would seem to be also useful for the US. An important purpose of a systematic reporting of sustainability indicators is to affect the public debate. Hopefully this can lead to an increased awareness that spending programmes must be financed. Then, the government's inter-temporal budget constraint may be satisfied in a process with a deliberate consideration of the consequences for efficiency and intergenerational equity of different policies. The alternative is that creditors will eventually force a change in policy in which these considerations are likely to be absent.

Regarding the current account deficit, we are less worried by the actual deficit and its long run trends than by the US's vulnerability to its foreign return privileges. Given that these remain, they yield a sufficient income to finance a large trade deficit. Were

they, however, to disappear, quite dramatic adjustments would be required, likely including a large depreciation of the dollar. It is difficult to make forecasts for the return privilege. On the one hand, it appears unlikely that financial markets in China and other emerging market economies will develop quickly. On the other hand, the restructuring of the financial sector in the US made necessary by the current crisis may reduce its productivity advantage and thus its ability to generate excess returns on the world capital markets.

Figure 4.8



References

- CBO (2008), *The Budget and Economic Outlook: Fiscal Years 2008 to 2018*, January 2008.
- CBO (2009a), *The Long-Term Budget Outlook*, June 2009.
- CBO (2009b), *The Budget and Economic Outlook: An Update*, August 2009.
- Curcuro, S., T. Dvorak and F. Warnock (2008), "Cross-Border Returns Differentials", *Quarterly Journal of Economics* 123(4), 1495–1530.
- European Union (2009), "Sustainability Report 2009", European Commission, Directorate-General for Economic and Financial Affairs, http://ec.europa.eu/economy_finance/publications/publication15998_en.pdf
- Gokhale, J. and K. Smetters (2003), "Fiscal and Generational Imbalances: New Budget Measures for New Budget Priorities", The AEI Press.
- Gourinchas, P.-O. and H. Rey (2007a), "From World Banker to World Venture Capitalist: The US External Adjustment and the Exorbitant Privilege", in R. Clarida (ed.), *G7 Current Account Imbalances: Sustainability and Adjustment*, Chicago: University of Chicago Press, 11–55.
- Gourinchas, P.-O. and H. Rey (2007b), "International Financial Adjustment", *Journal of Political Economy* 115, 665–703.
- Hassan, T. (2008), "Country Size, Currency Unions, and International Asset Returns", The University of Chicago Booth School of Business, mimeo.
- Hausmann, R. and F. Sturzenegger (2007), "The Missing Dark Matter in the Wealth of Nations, and Its Implications for Global Imbalances", *Economic Policy* 22, 469–518.
- Kotlikoff, L.J. (2006), "Is the United States Bankrupt?", *Federal Reserve Bank of St. Louis Review* 88(4), July/August.
- Neck, R. and J.-E. Sturm (editors) (2008), *Sustainability of Public Debt*, MIT Press.
- Obstfeld and Taylor (2005), "Sources of America's 'Exorbitant Privilege'", mimeo, University of California.

THE FINANCIAL CRISIS: RISKS AND CHALLENGES FOR THE EURO AREA

1. Introduction

The current crisis has led many analysts to re-assess the role of the euro. At face value, the euro area has done relatively well at avoiding the massive financial crisis of the Anglo-Saxon countries. Does the crisis prove the virtues of the euro, or can it be a source of tensions that stress the viability of the monetary union? In this chapter we discuss these issues. We acknowledge that membership in the euro area has helped to eliminate the possibility of a “twin crisis”, i.e. a joint banking and balance of payment crisis in the member countries. To the extent that such crises are self-fulfilling rather than driven by fundamentals, this is unambiguously beneficial. On the other hand, the crisis brings about some scenarios that may be problematic for the euro area. One such scenario is a rapid, excess appreciation of the euro reflecting a flight out of US assets. Another is a balance-of-payments crisis in Central and Eastern European countries. Despite the fact that these countries are not members of the monetary union, they are slated to join some day, and financial and macroeconomic fragility there affects the euro area.

Finally, we document a number of asymmetries and imbalances between the core members of the monetary union, in particular with respect to inflation differentials and net foreign asset positions. It is unclear whether the crisis has exacerbated or dampened these asymmetries. But the evolution of spreads in government yields during the crisis suggests that the credibility of the euro area is not absolute. It is plausible that these asymmetries, while not accentuated by the crisis, undermine the credibility of the area, which itself becomes more of an issue in times of crisis. That is, a shrinking economic activity may make imbalances such as low competitiveness, high trade deficits or high public

debt more problematic, which increases the likelihood of an exit from the euro area or of a default on public debt. The rise of the spreads during the crisis suggests that over a ten-year horizon and for a peripheral country, markets do not consider those possibilities as rare events.

One case in point is Greece. In December 2009, its sovereign debt was downgraded to BBB. The spreads shot up again as debt is quickly growing well beyond 100 percent of GDP, while low competitiveness due to past cumulated inflation differentials makes it difficult to exit the recession. Possible scenarios include outright default, exiting the euro area, or a bail-out from core euro countries. None of these scenarios is favourable for the euro. A bail-out can be especially problematic if it fails to prevent contagion to other, much larger economies with a public debt overhang, such as Belgium or Italy, for which a bail-out would be too costly.

2. The international transmission of the crisis

Historically, macroeconomic shocks that originate in the United States eventually spread to Europe, but this happens with a substantial lag. Typically, the transmission is thought to take place through international trade.¹ Essentially, a recession in the US is associated with a fall in import demand by US consumers, which reduces the demand for foreign-produced goods and thus depresses aggregate demand in the rest of the world. The effect is small because the share of imports in consumption expenditures is not very large; and it is associated to a lag because it takes some time for consumers to rebalance their expenditure and for exporters to realise that demand has fallen and to adjust their employment and production decisions. Thus, Krugman (2008) has argued that for aggregate demand in the rest of the world to be reduced by 1 percent, the US would need to be in a recession where output has fallen by 8 percent.

¹ The academic literature on the international transmission of business cycles is large. The reader may refer to Clark and van Wincoop (2001), Canova and Dellas (1993), or Calderon (2008).

In that respect, the recent crisis seems unique in that despite having originated in the United States, its transmission to the euro area has been instantaneous and the magnitude of the recession has been of the same order as in the US. The reason for this unusual pattern is that the transmission mechanism is different; due to financial globalisation, there now exists an international financial transmission mechanism of macroeconomic disturbances, and this mechanism is more rapid than the traditional one. Thus, the world economy is now in a regime where economies are more interdependent and react more quickly to shocks in other countries.

The increased financial interdependence is illustrated in Figure 5.1 (taken from Krugman), which shows that in three decades the level of foreign assets in the balance sheet of financial institution has been multiplied by 5 relative to world GDP. Similarly, a 2007 study finds a portfolio exposure of French banks to US assets equal to 22 percent, to which one may want to add a 15 percent exposure to UK assets.

That the transmission of the crisis is now synchronised is evidenced by the synchronisation of the responses of stock markets and real economic variables across economic blocks in the current crisis, as is depicted in Figures 5.2 and 5.3.

The mechanism underlying the financial transmission of the crisis lies in the balance sheet of international investors and its effect on asset prices. Those in turn affect the “financial accelerator”, which is the transmission mechanism from the financial to the real sector.

Financial institutions must hold a fraction of their liabilities in the form of equity rather than debt, generally for regulatory reasons. Because their portfolios are valued at market prices, when market prices fall, they have trouble matching their regulatory ratios if they are leveraged. This is essentially because their equity, which is equal to the value of their assets minus their debt, is more sensitive to stock prices than their total assets, because debt, which does not fall with stock prices, is subtracted from total assets when computing

equity. This is illustrated by the following example. Suppose an investor has 10 shares, worth 10 each, financed with equity of 40 and debt of 60. The total value of the portfolio is equal to 100. If stock prices fall by 20 percent, equity falls to $10 * 8 - 60 = 20$, i.e. it falls by 50 percent. The ratio of equity over total portfolio value falls from 40 percent to $20/80 = 25$ percent. Assuming the firm wants to restore that ratio, short of getting new capital, for example by issuing new shares, it must sell assets to reduce its debt – this is the essence of the deleveraging process. Assume it sells n shares. Then its debt falls to $D' = 60 - 8 * n$, and its equity is unchanged at $8 * (10 - n) - (60 - 8 * n) = 20$. To restore a ratio of $20/(20 + D') = 0.4$, we need $D' = 30$, so that the firm needs to sell 3.75 shares. To fix ideas, let us assume that 4 shares are sold.

Therefore, a fall in asset prices induces investors to reduce their portfolio holdings. Note that this in turn increases the supply of the asset on the market, which may further exacerbate the initial fall in the price.

Assume now that the investor is internationally diversified, and owns 50 percent of his portfolio in US shares and 50 percent in euro shares. Assume the price of those shares is initially equal to 10, and that the investor owns 5 of each share. The initial value of the portfolio is $10 * 5 + 10 * 5 = 100$, which again we assume is split between 60 of debt and 40 of equity. Next, assume that the price of US shares falls to 6. The new value of the firm's assets is $6 * 5 + 10 * 5 = 80$ again. The investor must again deleverage, and let us assume that his preferences are such that he wants to keep an equal proportion of each asset. If he sells n assets, that will be $n/2$ of each kind, and the resulting value of the portfolio is $6 * (5 - n/2) + 10 * (5 - n/2)$

Figure 5.1

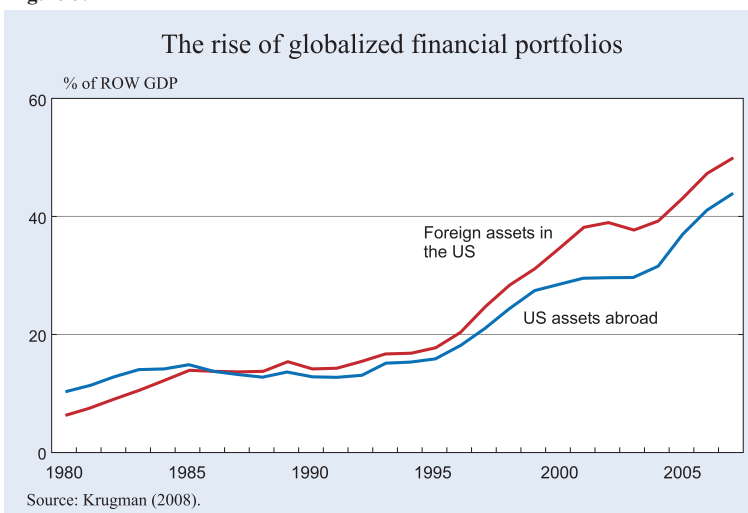
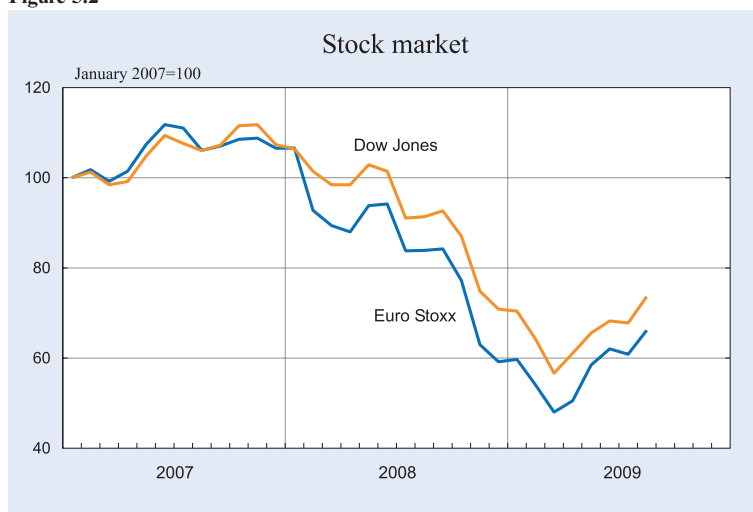


Figure 5.2



$= 8 * (10 - n)$. Debt falls by $6 * n/2 + 10 * n/2 = 8 * n$, and equity is unchanged. These are the same computations as before, and thus $n = 4$. The investor dumps 2 US shares and 2 euro shares on the international market. We now have a fall in euro stock prices, which deteriorates the balance sheet of investors who hold those assets. This triggers another wave of deleveraging, which alters both euro and US markets if those investors also hold US assets. The spiral continues until a new equilibrium is found.

3. The impact of the crisis on the euro exchange rate

We now discuss how the economic crisis may affect the likely evolution of the exchange rate of the euro vis-à-vis the dollar. Potentially, the crisis can have a large effect on the euro area through massive movements in nominal exchange rates. We start by discussing the mechanisms by which the recession and the response of policy makers may affect the exchange rate of the euro vis-à-vis other currencies.

In the United States, the crisis is characterised by

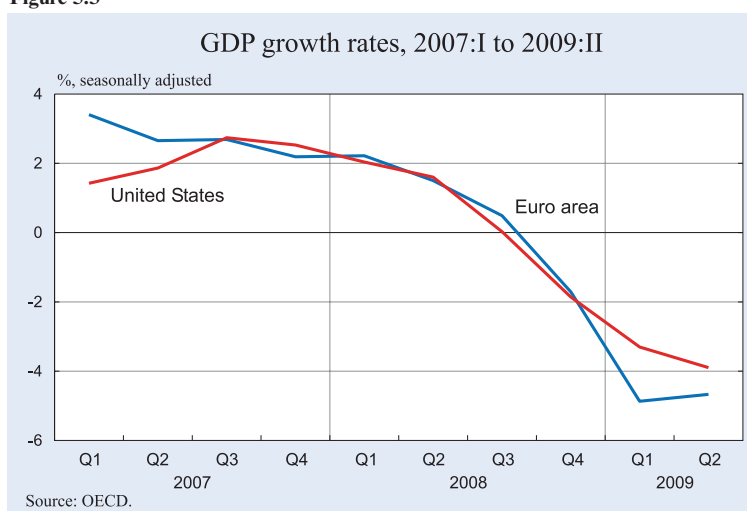
- A severe contraction in aggregate demand
- A massive policy response, in the form of
 - Large scale stimulus packages that may lift the budget deficit to some 13 percent of GDP in year 2009.
 - Aggressive cuts in interest rates by the Fed to a level close to zero.

These developments have diverging effects on the exchange rate. At any point in time, the exchange rate clears the market for foreign exchange. The demand and supply for foreign exchange comes from two motives. First, exporters and importers need to acquire foreign currency to finance their purchases, or conversely get rid of the foreign currency they got in international transactions. Second, portfolio investors also generate a demand and a supply for foreign currency depending on the denominations of the assets they want to hold in

their portfolio. In particular, their demand for, say, dollar denominated assets will be greater, the greater the rate of return on those assets compared to the rest of the world is. That rate of return is in turn more favourable when either the rate of return of US assets, expressed in dollars, goes up, or the dollar is expected to appreciate. Nowadays, the second motive for foreign exchange transactions plays a far greater role than the first, because the volume of FOREX trade induced by international capital movements dwarfs the one associated with international trade in goods and services.

Let us now tackle the presumed impact of each aspect of the US crisis on the euro/dollar exchange rate. Consider first the fall in aggregate demand. Let us discuss its impact on the exchange rate by first assuming that inflation in the US relative to the rest of the world, as well as rates of returns on assets, are unchanged. A fall in aggregate demand implies a per-

Figure 5.3



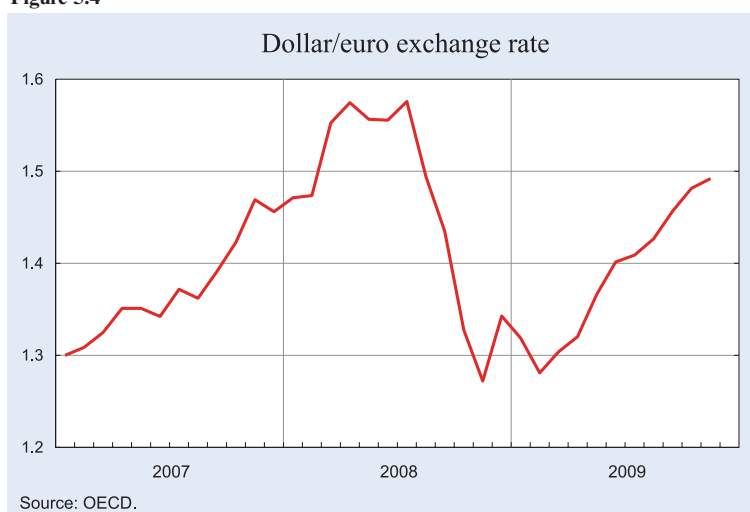
Source: OECD.

manent improvement in the US's net foreign asset position, as the US imports less goods from the rest of the world. Furthermore, it should be matched by a once-and-for-all adjustment in the exchange rate, because any future movements in the exchange rate beyond the impact effect of the shift would be arbitrated away by financial markets. If the real exchange rate were to depreciate, the US trade deficit would improve by even more. If markets were expecting the US foreign asset position to be balanced in the long run before the fall in aggregate demand, they would now expect it to be ever-improving. This is clearly not an equilibrium since the US consumer would eventually want to consume part of that added wealth. Therefore, the fall in aggregate demand has to be matched by an appreciation of the real exchange rate, which reflects the associated lower demand for US goods.

However, this argument holds everything else equal, i.e. assuming that there is no reaction by monetary authorities to the slump in demand and more generally that the return to US dollar denominated assets does not fall. In practice we rather expect the latter to fall, for example because monetary authorities will reduce interest rates to counteract the recession. This would then trigger a shift out of US assets and a depreciation of the dollar – this effect is likely to dwarf the effect of an expected improvement in the net foreign asset position.

Let us now consider the effect of a fiscal expansion. A fiscal expansion, everything else equal, needs to be financed; the rate of return on dollar denominated debt increases, which attracts foreign capital and triggers an appreciation of the exchange rate. This is what was observed during the 1980s with the so-called “Reagan” deficits. Again, this is everything else equal. If markets expect that the additional debt will be financed by inflation, thus expecting a low return on US assets, deficits may well trigger capital flight and a depreciation of the dollar. Finally, a monetary expansion, by lowering nominal interest rates, makes it more profitable to exit dollar-denominated assets in order to invest one's money elsewhere where returns are higher, and this leads to a depreciation of the dollar.

Figure 5.4



Thus we see that in the current crisis there are forces for appreciation along with forces for depreciation. What has actually happened? Figure 5.4 depicts the evolution of the euro/dollar exchange rate since the beginning of 2007. We observe three phases:

Initially, the dollar gradually depreciates to end up below 1.5 dollars per euro. This coincides with the “pre-crisis” period, during which investors started to be increasingly worried about global imbalances and subprime mortgages.

- Then we have another period of appreciation, which ends in November 2008.
- Finally, a new depreciation period started in January 2009.

Such evolutions are notoriously difficult to interpret, in light of the complex forces outlined above. The expectations of market participants play a key role in shaping them. One important question for the euro area is: Can the current trend of depreciation continue? If so, this would be a mixed blessing, as it would trigger a substantial appreciation of the euro and a loss in competitiveness, and therefore make the recession more persistent in Europe. As documented below, it is likely that competitiveness problems are building up in some euro countries, such as Spain, France and potentially Italy.

There are some arguments against such a scenario. In particular, euro-denominated assets are not overall more attractive than US-denominated ones. Historically, monetary conditions in the euro area typically have been more restrictive than in the United States. As we have seen in Chapter 1, though, the pre-

sent difference in interest rates is smaller than ever. Thus compared to the recent past there is no particular reason for a portfolio shift in favour of euro assets. Nor is there any clear evidence that growth prospects are better in Europe than in the United States: the crisis is at least as severe as in the US, the aging problem is worse, and, despite the rhetoric of the Lisbon Agenda, there are no expectations of broad reforms that might unleash some unexploited growth potential – if anything, the crisis has postponed such reforms. Finally, while budget deficits in the US are substantially higher than in the euro area (See Chapter 1 and Chapter 4), the initial situation in the United States is more favourable because its initial level of public debt is lower. Thus even though the crisis has made the US less attractive than before, it does not seem to justify a massive portfolio shift in favour of euro assets. This is further compounded by two stabilising forces. First, at some point markets seem to internalise the effect of exchange rate misalignments on competitiveness and future trade deficits. For example, in previous EEAG reports we have documented that the US dollar/euro exchange rate seems to remain between two boundaries: an upper boundary where a German basket of goods is as expensive in the US as in Germany (and further euro appreciation would make it cheaper in the US), and a lower boundary where the converse is true, i.e. a US basket of goods is as expensive in Germany as in the US. Between these two boundaries, a sort of “no-envy” situation holds, with the German basket being cheaper in Germany than in the US, while the US basket of goods is cheaper in the US. While we lack a firm theory that would account for such an empirical regularity, it is possible that these two critical points capture somewhat the level of bilateral rates beyond which massive arbitrage in goods markets would take place, i.e. beyond which trade imbalances would clearly be unsustainable. If so, then intertemporal arbitrage by speculators would prevent the boundaries from being trespassed. Such an interpretation is consistent with the halt of the preceding phase of appreciation, when the euro started falling again after hitting 1.55 dollars per euro – which is around the level where in the US the German basket becomes as cheap as the US one. We should then expect the current phase of appreciation to stop at around a rate of 1.5. Another stabilising mechanism is the well-known valuation effect, which was already discussed in our 2008 report. Because the US tends to borrow in its own currency, while it is holding assets (such as equities) that are real, a depreciation of the dollar reduces the value of the debt of US citizens relative to their assets.

Consequently, their net debt falls. This tends to improve its net foreign asset position which, as we have discussed above, is a force for appreciation; thus, we have an additional mechanism for correcting an appreciation of the dollar. In particular, this rules an insolvency/depreciation spiral out by which as the dollar depreciates US residents would increasingly be unable to meet their (foreign-denominated) debt, which would trigger a run away from US assets and further depreciation of the currency.² Such a mechanism has been important in previous episodes in emerging economies, for example during the Asian crisis or the Argentinean crisis of the 1990s. As we discuss below, it is actually more likely to come into play at the periphery of the euro area than in the United States.

Thus there are compelling reasons to rule out both, a continuation of the appreciation of the euro beyond 1.5–1.6 dollars/euro and a sudden portfolio shift away from US dollar-denominated assets and in favour of euro-denominated assets. One scenario that cannot be ruled out, though, is a sharp rise in expectations of inflation in the US, if say markets anticipate persistently high budget deficits and it appears that inflation will be the most likely form of taxation that will be used to reduce the burden of debt. Such a realisation by markets could trigger a sharp drop in the dollar. In the long run this would not be associated with competitiveness problems in the euro area: On average, the rate of depreciation merely offsets the inflation differential between the two zones. However, upon impact the drop may indeed cause competitiveness problems, as the fall in the dollar reflects expected increases in the US price level that have not yet materialised. Through imports, such a fall may exert deflationary pressure in the euro area which would have contractionary effects through higher real interest rates, while making it more likely that a liquidity trap arises. In the longer run, the ECB will be faced with the dilemma between aligning itself to US monetary policy, which amounts to importing US inflation, and fighting an endemic appreciation of the euro.

This inflationary scenario is plausible given the massive liquidity that has been injected in the economy by the Fed and the poor quality of many of the assets that it has acquired in exchange for that. However, at present markets do not anticipate that it will prevail. If it were to prevail, the nominal yield on 5 year US

² Such a run would quite often be associated with a bank run, and therefore one would have a “twin crisis”, as discussed below.

treasury bonds would be substantially higher than for short term maturities, and as we have seen in Chapter 1 this is not observed. This may mean either that markets do not see an end to the recovery (which would be necessary to ignite inflation), or that they are confident in the Fed's ability to fine tune the rate of inflation when the recovery comes, by gradually reducing the monetary base.

4. Is the euro area a safe haven?

There has been much debate regarding whether the euro area has acted as a successful shelter against the financial crisis. This argument is motivated by the experience of Iceland, where the failure of large banks has led to government insolvency (along with a collapse of the value of the currency). The role of a single currency in preventing those outcomes has to be clarified. Clearly, participating in a currency union does not reduce the likelihood of a bank run, insofar as such a run is motivated by the fact that the bank is not able to pay back all depositors should it occur, given the illiquidity of the asset side of its balance sheet. Thus, a priori, financial crises bear little relation to the exchange rate regime. On the other hand, macroeconomists have identified "twin crises", i.e. episodes where a banking crisis occurs simultaneously with a balance of payments crisis (see Kaminsky and Reinhart (1999), Dornbusch et al. (1995), Sachs et al. (1996)). While this literature is still burgeoning, there are reasons to believe that there are complementarities between the two types of crises (which explains that they both happen at the same time in many cases). More specifically, if the liabilities of financial institutions are denominated in foreign currency, expectations of a sudden drop in the exchange rate reduce the solvency of those institutions, which makes it more likely that a run may take place. In that respect, it is reasonable to believe that for a number of small countries in the euro area, the euro has made a run on the financial sector less likely, since it is very unlikely that a massive fall in the euro would have taken place, contrary to the case of a small country with its own currency where domestic macroeconomic problems can sub-

stantially increase the probability of an attack on the currency. Thus, Ireland, which had a large exposure to toxic US assets, was spared the problems experienced by Iceland.

Does that mean that the euro is an unambiguous blessing? The answer is "no", and we have three main reasons for concern:

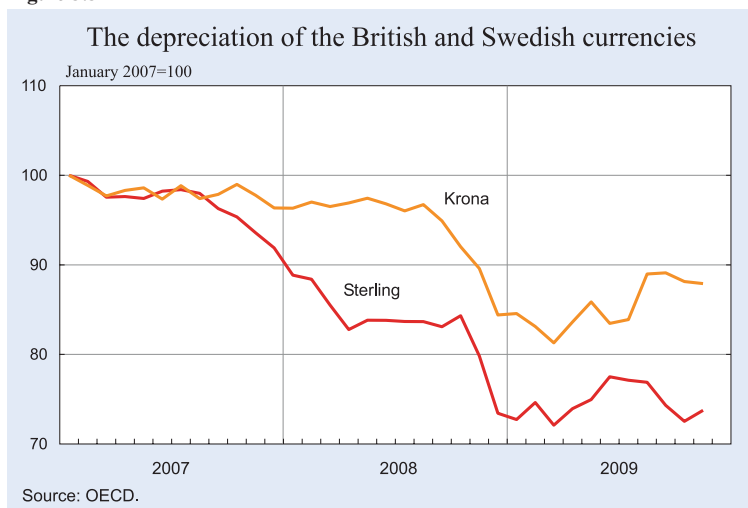
- The crisis in some non-members has a severe impact on some members through the depreciation of those non-members' currencies.
- The crisis in accession countries generates important policy dilemmas that may weaken the euro.
- The fiscal and macroeconomic position of at least one peripheral member country is straining the monetary union.

We discuss these three issues successively.

4.1 Depreciation of contiguous currencies

Essentially, while the euro is overall a blessing in that it protects some countries against a financial crisis, as discussed above, its drawback that the European Monetary Union (EMU) is not an optimal currency area may be particularly salient under a crisis. This is because non member countries that trade heavily with some member countries may experience a large depreciation of their exchange rate, which will induce a strong economic contraction in the member country. In the case of the EMU, two member countries are in such a situation: Ireland, which trades heavily with the United Kingdom, and Finland, which trades heavily with Sweden. Figure 5.5 documents the very large depreciation of the British

Figure 5.5



pound during the crisis as well as the milder depreciation of the Swedish krona.

These factors certainly play some role in the fact that Finland and Ireland are the two euro area countries where the recession has been most severe, with an estimated contraction of 8.8 percent and 7.5 percent respectively for 2007.³ Thus, while membership of the euro area is favourable for financial stability by shutting down channels for twin crises, it may make the actual contractionary impact of the crisis more severe by preventing a quick adjustment of the real exchange rate. In contrast, non euro countries can rebalance their economies quite quickly by having a sharp depreciation. The UK, for example, suffered from substantial trade deficits and arguably from an overvalued exchange rate; the quick depreciation of the pound has gone a long way toward restoring equilibrium.

4.2 Critical macroeconomic developments in candidate countries

Another critical issue is the effect of the crisis on Eastern European countries and the timetable of those countries' adoption of the euro. In principle, these countries have a claim to join the euro after a period of two years of moderate exchange rate fluctuations, and no devaluation (the so-called ERM-II arrangement). However, a number of these emerging countries are particularly vulnerable to the crisis. This is not so much due to their exposure to toxic assets as to the sharp rise in their foreign-currency denominated liabilities during the period of strong growth and imbalances that preceded the crisis. This generates the risk of self-fulfilling balance of payment crises, as investors anticipate that a collapse in the currency would make a lot of debtors insolvent, and get rid of their domestic assets. The world recession clearly does not help as these small countries rely more on exports and are therefore more vulnerable to a slump in world aggregate demand.

To illustrate this, let us take two examples: Latvia and Hungary (see Tables 5.1, 5.2 and 5.3). The rapid boom in Latvia prior to the crisis was fuelled by strong capital inflows and international investor euphoria. As a result, a large stock of foreign debt was accumulated and up to 90 percent of debt was denominated in foreign currency (See Stokes (2009));

the boom was associated with a current account deficit of 25 percent of GDP and the foreign debt reached 140 percent of GDP.

To foster early accession to the EMU, Latvia has adopted a narrow peg to the euro. This leads to the problem that markets may force a devaluation because they face a high foreign debt, a poor performance of the economy and a probable overvaluation of the currency. In 2009 the economy contracted at an annual rate of 18 percent. Among the results is a sharp rise in budget deficits, estimated at 13 percent of GDP, which along with the recession create expectations of a devaluation. The government has received support from the IMF, but due to the magnitude of the contraction it cannot meet the conditionality attached to it in terms of fiscal discipline. All these issues are making a self-fulfilling balance of payments crisis more likely, along with the rapid appreciation of the real exchange rate that was accumulated during the period of pegging to the euro.

Hungary has experienced similar developments, on a milder scale: a commitment to a euro peg, strong growth and large external imbalances, with a prevalence of foreign-currency borrowing and again the risk of a twin crisis. Inflation has been less strong than in Latvia (Table 5.3) though, and is probably compatible with the exchange rate peg, given the necessary appreciation of non-traded goods over time vis-à-vis those prevailing in the euro area. By contrast, inflation in Latvia has been incompatible with the exchange rate peg and is now having a sharp contractionary effect through the loss of competitiveness. As in other countries, this tends to correct the trade deficit because imports massively fall; nevertheless, such rebalancing of external trade only comes at the cost of an internal recession and does not eliminate the need for a real depreciation.

Table 5.1
Trade balance/GDP Hungary and Latvia

	Hungary	Latvia
2006Q04	-7.4	-29.0
2007Q01	-6.5	-22.4
2007Q02	-7.6	-23.0
2007Q03	-6.4	-25.2
2007Q04	-6.3	-19.1
2008Q01	-5.3	-15.2
2008Q02	-5.3	-15.3
2008Q03	-8.5	-13.0
2008Q04	-9.4	-8.3
2009Q01	-1.3	1.2

Source: Eurostat.

³ See Table 5.

Table 5.2
Real GDP growth, Latvia and Hungary

	Latvia	Hungary
2000	6.9	4.9
2001	8	4.1
2002	6.5	4.4
2003	7.2	4.3
2004	8.7	4.9
2005	10.6	3.5
2006	12.2	4
2007	10	1
2008	- 4.6	0.6
2009	- 18	- 6.5

Source: Eurostat.

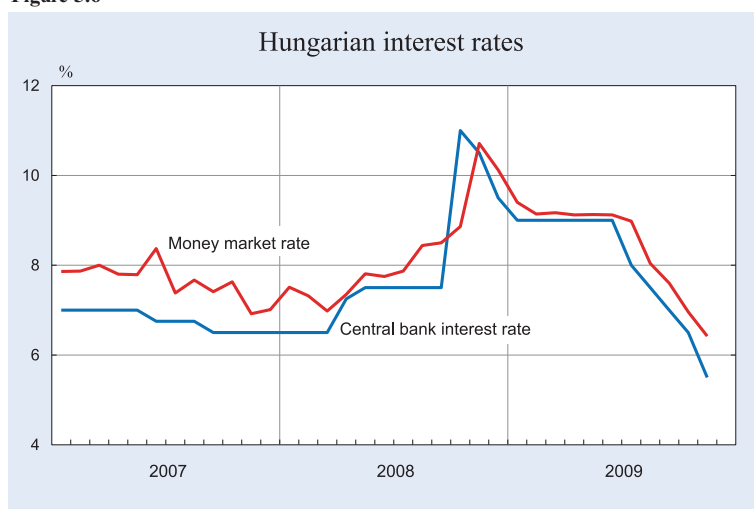
Table 5.3
Inflation, Latvia and Hungary (%)

	Latvia	Hungary
2007	17	5.5
2008	11	4.5

Source: Eurostat.

Hungary, has maintained high interest rates in order to defend its currency. For example, throughout 2008 interest rates in Hungary soared from 7 percent to more than 11 percent and they remained above 9.5 percent throughout most of 2009 (Figure 5.6). The policy dilemma is clear: either the central bank lowers interest rates and runs the risk of a depreciation and a crisis induced by the insolvency of borrowers in foreign currency, or it maintains high nominal and real interest rates and fuels a recession driven by weak aggregate demand. So far it has chosen the latter course and the result is a sharp contraction in economic activity. Since the peak of the crisis, though, tensions seem to have eased and the central bank has managed to reduce its interest rate to 5.5 percent.

Figure 5.6



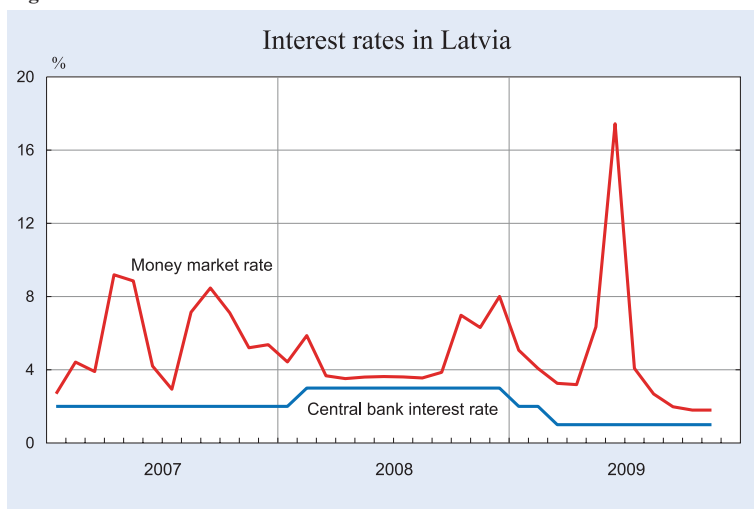
In Latvia, monetary authorities have been able so far to defend the currency peg at a remarkably low cost in terms of interest rates. This is especially surprising given that, as shown on Figure 5.7, money market rates experience large swings that reflect the sensitivity of market expectations to news regarding the possibility of a devaluation or a balance of payment crisis (such a disconnect between bank rates and market rates is not observed in Hungary). It is possible that covert intervention by the ECB to defend the Latvian currency (lats) explains such a pattern.

How do the macroeconomic problems of peripheral accession countries affect the euro area? First, they create pressure for early entry in the euro area. The point, again, is that the risk of a self-fulfilling attack would have been nil if those countries had been members of the euro area. A “surprise” adoption of the euro by the CEECs (as advocated by some commentators⁴) would kill any prospect of a balance payment crisis in these countries. The problem is that, presumably, with a critical mass of vulnerable countries in the euro area, the euro itself would eventually become vulnerable. We have seen in the case of Ireland that euro membership did not preclude a sharp contraction of GDP, and such a contraction is typically associated with large budget deficits. Having the troubled CEECs join the euro would further weaken the overall budget outlook of the euro area, thus raising pressures for loose monetary policy while fixing another nail in the coffin of the EU’s Growth and Stability Pact. This point is especially relevant in light of the issues faced by some peripheral member countries, as discussed in the next subsection.

More fundamentally, given the constraints associated with euro membership, it is unwise that a country joins the euro area at a time of crisis, because prices are more likely to be incorrect. In the case of Latvia, for example, we may assume that entry in the euro area at current exchange rates will lead to overvaluation and therefore be associated with a prolonged slump in that country. On the other hand, entry in the euro area immediately after a

⁴ Marcin Piatkowski and Krzysztof Rybinski, “Let us roll out the euro to the whole Union”, *Financial Times*, June 11, 2009.

Figure 5.7



devaluation may lead to under-valuation, especially if such devaluation is the by-product of a balance-of-payments crisis.

The second issue is that the problems in Eastern Europe may lead to a bailout from Western Europe. This may happen both because Western banks are exposed to substantial credit risk in the East, and because the West may want to inject money in those economies in order to stabilise them, in particular so as to avoid a postponement of their joining the single currency. Indeed, rescue packages were implemented during the first half of 2009 under the auspices of the IMF. Such a bailout will make the overall fiscal situation of euro area countries more fragile. Again, there is a limit to the extent to which the problems of small countries can be solved by mutualising their liabilities and diluting them in a larger, more stable area. Beyond that limit, the stability of the whole area may be in danger. If one compounds the scenario of an Eastern bailout with the poor situation of a number of peripheral member states and the rapidly rising public debt in core countries such as Spain, Germany and France, it is not far-fetched to argue that such a limit may be surpassed.

4.3 Fiscal imbalances in peripheral member states

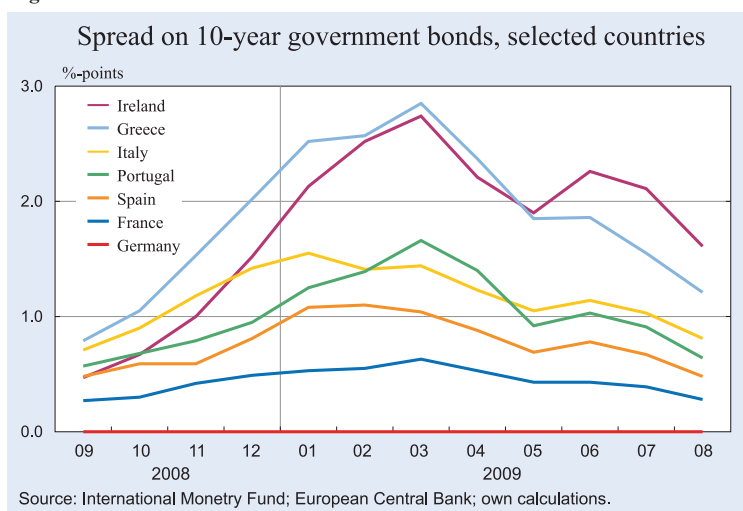
The third challenge faced by the euro area is that while it is true that member countries have avoided a balance-of-payment

crisis, the safe haven hypothesis is currently being tested by markets for the most highly indebted countries – especially Greece.

This is apparent when one looks at the yield on government bonds of the euro area countries. Given that these are denominated in euros, the euro value of a sovereign bond's coupon is unaffected by the domestic inflation rate. Therefore, a higher yield on such a bond can only reflect the market's expectation of outright default or perhaps an exit from the euro area and a conversion of the bonds in the (reintroduced) domestic currency. At present such a move is not on the political agenda of any member country,⁵ and, in Europe, outright default is only observed in the context of war or revolution. If in addition to that one expects that the devaluation of domestic debt cannot be forced by a balance of payment crisis, due to the protective effect of euro membership, we would think that the yields on euro sovereign bonds should be very similar across member countries. Yet, not only are the spreads substantial, but they widened considerably during the crisis. Going back to Figure 3.1, which is reproduced in Figure 5.8 for convenience, we see that for the most exposed countries, Ireland and Greece, they exceeded 250 basis points at the peak. To put this in perspec-

⁵ And the consensus view among economists is that it cannot happen. See Eichengreen (2007).

Figure 5.8



Source: International Monetary Fund; European Central Bank; own calculations.

tive, consider that this can be interpreted as a yearly probability of total default on the debt. Over a ten-year period, and assuming the baseline country Germany never defaults, this means that for Ireland or Greece the market evaluates such an event as having a probability of $1 - (1 - 0.025)^{10} = 22.4$ percent. This is huge. While the tensions have eased somewhat, the spreads remain considerable. If neither default nor devaluation are possible options, a speculator could make infinite profits by arbitraging those spreads away. Therefore, there must be some reason why default or exiting the euro are more likely outcomes than we thought.

To see this, let us take the example of Greece. It entered the crisis with a ratio of public debt over GDP equal to 100 percent, after more than a decade of very large trade deficits – this latter feature probably reflecting an entry into the euro area at an overvalued exchange rate. In the absence of euro membership Greece would probably have experienced a balance-of-payments crisis and massive currency depreciation, as both exchange rate overvaluation and high public debt would have created expectations of loose monetary policy in the future. But we can see from the evolution of spreads and the more recent downgrading of Greece's sovereign debt by rating agencies that the safe haven mechanism works at best imperfectly. Public debt is forecast to hit the 135 percent mark in 2011 (recent revisions of the deficit put it at some 12 percent of GDP for 2009). Furthermore, the economy is harmed by its poor export competitiveness and the ability of the government to effectively increase tax receipts remains to be proved. As a result, a default triggered by markets' expectations of the government being unable to repay its obligations in the future cannot be ruled out as a scenario. In such a case, though, many analysts would typically expect a bail-out to occur by major euro area countries, perhaps with the help of the IMF.⁶ But contagion may well spread to bigger economies with a debt overhang, such as Belgium, Italy, or even France (as the latter is rapidly headed toward the 100 percent debt/GDP ratio mark). In such a case, bail-out would clearly be impossible and some form of default would have to occur. It must be the case that markets do not rule out an incomplete bail-out and/or a contagion scenario that would make a complete bailout impossible; otherwise we would not observe such high spreads on Greek public debt.

⁶ See, for example, "Greece: A New Deal?", BNP Paribas note, 15 Dec 2009, <http://www.roubini.com/citation/401470/4/0/11109>.

The other issue regarding Greece is that given the political climate, it is unclear whether a policy of fiscal consolidation or wage moderation will be politically feasible. Reforms are often met with violent protests and populist electoral platforms tend to gain the upper hand, as in the 2009 election when the Socialist party won with a program of wage increases and greater public spending. It is possible that a radicalisation of Greek politics might lead to new options such as exiting the euro being considered, and that such a possibility is already reflected in the behaviour of markets.

The lesson to be drawn from this discussion is that while euro membership provides an insurance against currency and financial crises, its real effects on peripheral countries may lead to such large imbalances that they may end up in a crisis despite the safe-haven effect.

One may interpret recent proposals to issue so-called "euro bonds" backed by future tax receipts of the European Union as a step toward mutualising claims between member countries. Given the size of the EU budget, additional resources to pay for such bonds must inevitably be the outcome of a strategic game between countries in which each member tries to shift the burden of taxation to the others. Typically, we expect such a game to benefit the more highly indebted countries. Thus, the euro bonds would create an implicit commitment of the more virtuous governments to bail-out the least virtuous ones in the future, and at the same time generate perverse incentives for all countries to increase their debt so as to benefit from such a bail-out. This mutualisation indeed partially helps the most indebted countries, but only by diluting their fiscal insolvency in a wider geographical area, while it weakens fiscal discipline in the monetary union. The end result would be an overall weakening of the euro and an increase in the risk premium over euro-denominated assets.

5. How have member economies reacted to the crisis?

We now discuss how the crisis has affected the various countries participating in the EMU. In dealing with the crisis, the euro area faces a number of specific challenges due to its heterogeneity and the decentralised character of budget decisions. The more the euro area countries are similar in terms of shocks and policies, the lower are the costs of having the single currency. Thus it is important to understand the

sources of heterogeneity within the euro area and how they affect the response to the crisis of each member country as well as the scope for a coordinated policy response. We now turn to these issues.

5.1 Differences in openness

As discussed above, one important transmission channel is international trade. It is known that different countries in the euro area have different trade intensities and therefore different sensitivities to a fall in world aggregate demand. Figure 5.9 illustrates this by plotting the fall in the share of exports over GDP during the crisis (i.e. between 2007 and 2009) versus the initial level of openness (measured as imports plus exports over GDP): bigger exporters have experienced a larger external shock.

These differences imply differences in the preferred policy response to the crisis. Everything else equal,

- a stronger external shock generates a greater demand for stimulus coming from the policy authorities, but
- greater openness means that a larger fraction of the stimulus is going to “leak” through imports, so that the net effect of the stimulus is smaller.

Since the more open economies had the bigger shock, these two effects go in opposite directions and it is therefore not clear what their net response should be. On the other hand, the more open economies are the ones that are likely to benefit most from a global coordinated stimulus, whereby the leak-out of activity associated with imports is compensated by a leak-in associated with exports.

Figure 5.9

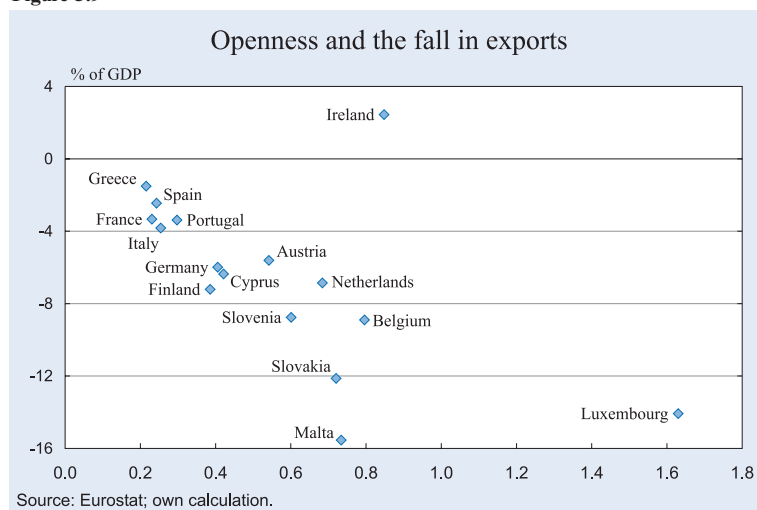


Table 5.4
Share of US equity held
by euro area investors

euro area	45.8
Austria	48.2
Belgium	44.8
France	42.5
Germany	45.5
Italy	44.8
Luxembourg	42.7
Netherlands	54.6
Finland	31.8
Greece	40.0
Ireland	46.8
Portugal	41.3
Spain	32.4

Source: Lane and Milesi-Ferretti (2005).

5.2 Differences in financial exposure

Second, countries may differ in their sensitivity to the financial transmission channel. As the above argument has shown, that channel is stronger, the larger the fraction of an investor’s portfolio that is invested in US assets. That fraction clearly differs across countries, but a look at the data suggests this is not a big source of heterogeneity. Table 5.4, taken from Lane and Milesi-Ferretti (2005), gives us the equity share of euro area countries in the US as of 2005. We see that the exposure rate of the larger countries is around 45 percent, with the exception of Spain which seems more financially insulated from the crisis, with only 32 percent of its equity portfolio invested in US assets.

Therefore, with the exception of Spain, the rate of exposure to US assets is not a big source of heterogeneity.

5.3 Different initial conditions

Euro area countries are subjected to different initial conditions at the time they enter the crisis. These initial conditions will in turn have an effect on the economic consequences of the crisis in a given country, on its margin of manoeuvre for counter-cyclical policy measures and on the nature of the policy response that it prefers. Two important aspects, in particular, are the evolution of the country’s competitiveness and its trade balance,

and its initial budget position. We have already seen in the case of Greece that poor initial conditions may lead to a loss of market confidence and a very reduced margin of manoeuvre for the government.

An important source of disparity is that some euro area countries are more competitive than others, meaning that their exports are cheaper relative to some reference and their trade balance is more favourable. These countries can hope to have increased living standards and an appreciation of their real exchange rate in the future, while the others can expect to have to “tighten their belt” and reduce their consumption so as to restore external balance. This means that the crisis, to the extent that it comes from a reduction in exports, is somewhat more “harmful” to the second kind of countries relative to the first. In turn these countries will be more reluctant to engage in fiscal stimulus, because they are more concerned by the import leakages. On the other hand, they are more likely to favour an aggressive monetary policy because it would tend to lead to a depreciation of the euro.

Since the introduction of the single currency, a creeping divergence in competitiveness and trade balances had been observed among the four major countries. This divergence is depicted in Figure 5.10 for the trade balance. We observe that Germany has been accumulating trade surpluses, Italy remains

Figure 5.10

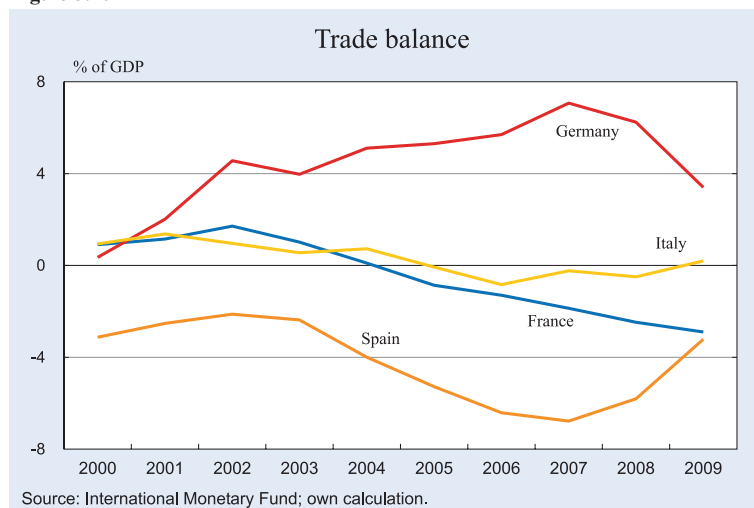
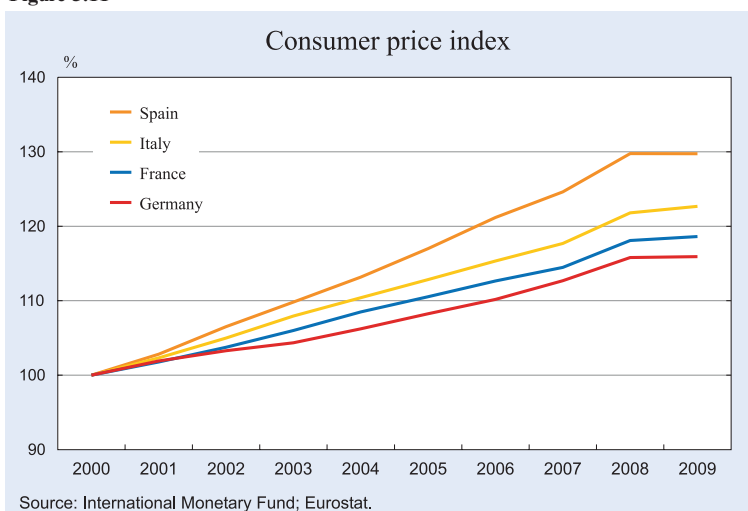


Figure 5.11

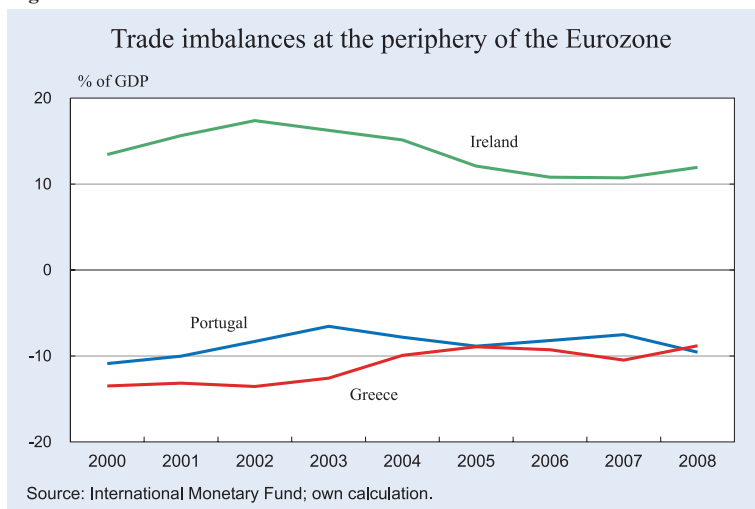


more or less balanced although slightly on the deficit side, Spain has a large deficit and France is gradually deteriorating, being in a surplus situation at the onset and now with a deficit which is nearing three percentage points of GDP. Thus we see substantial heterogeneity. Ironically, the responses to the crisis tend to correct those heterogeneities, as Germany's exports are plummeting while Spain's imports are falling due to the slowdown of activity in non-traded goods such as construction. In that respect, the crisis has not exacerbated the imbalances; rather, it has corrected them.

These developments are themselves due at least in part to the cumulative effects of inflation differentials over time. These inflation differentials are depicted in Figure 5.11, which reports the consumer price index for the four major euro economies. We see that Germany is gradually gaining competitiveness while Spain is losing competitiveness. In the long run, the persistence of those inflation differentials would typically exert pressure on the euro area.

It also seems that large trade imbalances have been accumulating at the periphery of the euro area since the establishment of the single currency. On the one hand, Ireland has had a very substantial trade surplus. On the other hand, Portugal and Greece have accumulated double-digit trade deficits. These issues are documented in Figure 5.12.

Figure 5.12



Inevitably, small peripheral countries have little impact on euro area monetary policy, and that is the reason why such imbalances may accumulate. For example, a country with a strong boom driven by internal demand may gradually accumulate a positive inflation differential vis-à-vis the other euro area countries. Such a differential will only lead to a small increase in the euro interest rate as the boom affects the inflation rate in the euro area only to a small extent. And, when the real overvaluation and the adverse net foreign asset position start having a negative impact on the economy, it cannot implement a devaluation, again because its own recession has little impact on economic conditions in the euro area.⁷

Member countries also differ in their fiscal margin of manoeuvre, as we have already discussed in Chapter 3 of this report. Figure 5.13 shows the evolution of the debt/GDP ratio over the last decade. It does not reflect the increment in public debt associated with the spending packages of 2009. We see that there are three types of countries: “high debt” countries, with a debt/GDP ratio greater than 90 percent, “middle debt countries”, with a ratio between 50 and 90, and low debt countries, with a ratio below 50. For high debt countries, the margin of manoeuvre in engi-

⁷ The challenges of adjustment for asymmetrical countries in the euro area have been discussed in our 2007 report for Ireland and Italy.

neering a massive US-style stimulus package is very low. This would tend to induce them to support monetary easing, which would in addition help them to finance their debt. The middle debt countries are in a worse situation than the United States but they can still afford some stimulus provided they manage to commit to stabilise debt when the economy has exited the recession. Finally the low debt countries have a greater margin of manoeuvre.

Finally, euro area countries are heterogeneous in their preferences. Historically, some of them, like Germany, have insisted on price stability, while others have been more tolerant of inflation, resorting to recurrent devaluations to regularly offset their inflation differential. The latter are more likely to engage in stimulus than the former, and to be in favour of aggressive monetary easing.

This disparity of initial conditions will likely make it difficult to engineer coordination over fiscal stimulus. And it also means that we will observe heterogeneity in the impact of the crisis across countries as well as in the policy responses to the crisis. We discuss these two aspects in turn.

5.4 The macroeconomic impact of the crisis

The performance of the main euro area countries during the crisis is summarized on Table 5.5, which

Figure 5.13

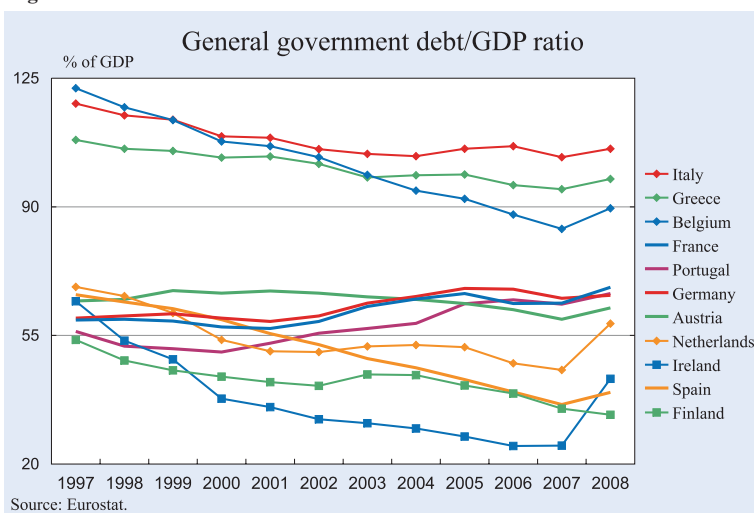


Table 5.5
Real annual GDP growth between 2008:Q3
and 2009:Q3 in the euro area

Country	GDP growth
<u>Austria</u>	-3.7
<u>Belgium</u>	-3.4
<u>Denmark*</u>	-7.0
<u>Finland</u>	-8.8
<u>France</u>	-2.4
<u>Germany</u>	-4.8
<u>Greece</u>	-1.7
<u>Ireland</u>	-7.6
<u>Italy</u>	-4.6
<u>Luxembourg*</u>	-5.3
<u>Netherlands</u>	-4.0
<u>Portugal</u>	-2.5
<u>Spain</u>	-4.0
<u>European Union</u>	-4.3
<u>euro area</u>	-4.1

*: data are between 2008:Q2 and 2009:Q2.

Source: OECD.

reports annual GDP growth between 2008Q3 and 2009Q3. The rate of contraction is similar between the euro area and the United States. There are substantial disparities in the contraction rate between countries: The growth rates range from -1.7 (Greece) to -8.8 (Finland).

If one looks alternatively at unemployment rates (Figure 5.14), we also find disparities; however, a paradox emerges. The rise in unemployment does not match the fall in GDP. France and Spain have experienced a larger rise in unemployment than Italy and Germany, while the fall in GDP has been larger in the latter countries. It is not easy to explain this pattern. In general, employment may be more or less cyclical relative to output depending on the cost of adjusting employment. This cost in turn is affected by labour market institutions and particularly by employment protection. If employment protection is large, we will observe a lower fall in employment during a downturn – workers are retained by the firm and asked to work fewer hours or to exert lower effort, thus we observe a substantial fall in productivity per worker along with a small drop in employment rather than a larger drop in employment and a lower fall (or even a rise) in productivity. Since the mid-1980s, a number of countries have reduced employment pro-

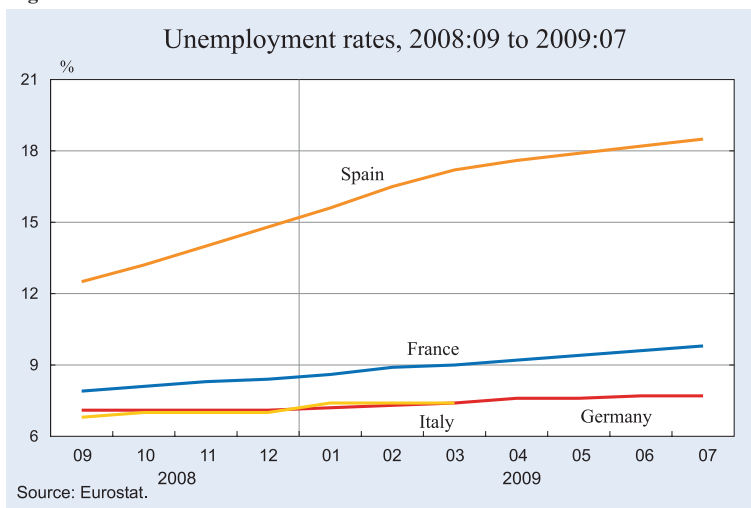
tection at the margin by easing the use of temporary contracts and other flexible forms of employment. In principle, we expect those countries to become more cyclical in terms of employment, relative to those that have not engineered those reforms. This seems to go some way in explaining the sharp rise in unemployment in Spain, since Spain is the country where such reforms have been most far-reaching. However, when one looks at the remaining three major euro area countries, things are not so clear-cut. If anything Italy makes more use of flexible contracts than France, yet unemployment has risen very little there.

Therefore, other factors must explain the disparity in unemployment rates. In particular, in Germany a large program of subsidisation of part-time unemployment has been implemented. In Spain, the sharp increase in unemployment is related to the fact that a restructuring of the economy is underway: The construction boom is over and as the reduction in activity in that sector is perceived as permanent, firms have no incentive to hoard labour and instead implement large, immediate employment cuts.

5.5 The fiscal policy response

We now briefly discuss the fiscal policy response of the euro area economies, referring the reader to Chapter 3 for further discussion of the fiscal issues. Figure 5.15, based on Table 3.1, depicts the size of the budget deficits, as a percentage of GDP, in the OECD, for year 2009. These numbers differ from the official “stimulus package” numbers. The latter refer to the official pro-active measures that are being implemented over and beyond both the effect of auto-

Figure 5.14



matic stabilisers and of measures that have been decided independently of the crisis. We believe the total deficit number is a better measure: clearly, if a country has a less ambitious stimulus package but if its automatic stabilisers are stronger or its fiscal policy is otherwise more expansionary, it has less need and margin of manoeuvre for such a package.

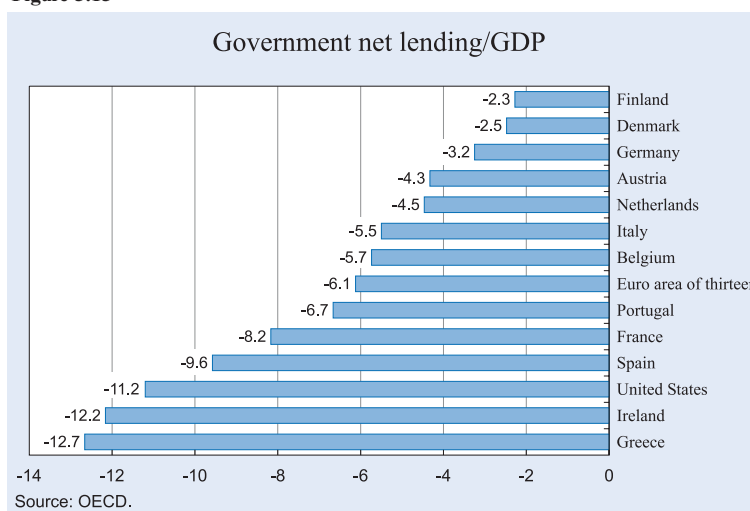
Overall, the size of deficits in the euro area is smaller than for the United States. In many countries, they are comparable to the numbers that prevailed during the 1993–94 recession. We also note a substantial heterogeneity among euro area countries. Is that problematic? As noted above, this is to be expected given differences among member countries in terms of preferences and initial conditions. However, there are substantial coordination issues that may be problematic.

First, stimulus in one country increases demand in another through the channel of international trade. As a result, to the extent that one's own fiscal stimulus is costly, one country may want to free ride on the others' fiscal expansion. In fact, the more my neighbours are stimulating their economy, the more I want to take advantage of it by reducing my own spending. In equilibrium, the level of stimulus is too small and coordination between countries may improve outcomes, although coordination does not mean uniformity and the gains from it may be small for those countries that desire less stimulus.

Such coordination failure may help explain why the scale of fiscal expansion in Europe is smaller than in the United States. Of course, coordination failure is a problem if governments target the right level of fiscal spending. The economic literature has proposed some mechanisms by which spending may be too large. For example electoral considerations may induce incumbent governments to accumulate too much public debt. In such a case, the coordination failure acts as a corrective for the expansionary biases.

The other coordination problem has to do with the interplay between national governments and the ECB. In an economy with independent central

Figure 5.15



banks, governments may refrain from implementing a fiscal expansion because they anticipate that the central bank will react with an increase in interest rates to fight the inflationary effects of such an expansion. In a monetary union, the effects of expansionary policies in one country are diluted throughout the union. Since the central bank only reacts to union-wide macroeconomic developments, its response to a national government's fiscal expansion is likely to be small. This generates incentives for each government to be more expansionary than absent a monetary union. Of course, in equilibrium all governments engage in expansionary policies and the monetary policy is tighter – the monetary union generates a bias toward loose fiscal policies and tight monetary policies. It is not totally clear, however, how relevant this mechanism is in present circumstances. Given the level of slack, it is unlikely that central banks, whether a monetary union or an independent national one, would react to additional stimulus by increasing interest rates. This leads us to discuss the monetary policy response of the ECB to the crisis.

5.6 The monetary policy response

How appropriate has the ECB's response been to the crisis? In particular, some analysts complain that the ECB is not "doing enough" to stimulate the economy. The response of the central bank has been actually two-fold:

First, it has acted as a liquidity provider of last resort in the face of a shortage of interbank lending. This process amounts to substituting base money, i.e. money created by the central bank, for "internal

money”, i.e. money created by the financial sector. When the financial sector is subject to a collapse in lending, this reduces internal money and to prevent broad monetary aggregates from shrinking, one must provide liquidity to the financial sector. It is not difficult to evaluate whether this process is being successful. Absent liquidity injunctions, one would have observed persistent increases in short-term interest rates. Clearly, the intervention of the ECB has avoided this.

Second, it is traditionally believed that reducing interest rates contributes to an increase in aggregate demand because it stimulates consumption and investment. The question is: how important is this channel at the margin, once one has reached the zone of near-zero interest rates? If it is important, then further cuts by 50 basis points could have a strong effect on economic activity. But that which determines investment and consumption are the terms under which private agents can borrow. If those terms are disconnected from the bank policy rates, then the economy is in a zone where monetary policy can achieve little. In particular, in a credit crunch, the total amount of credit has more to do with the financial institutions’ beliefs about the characteristics of the borrowers than with the rate at which they can refinance themselves. In any case, while the response of the ECB has arguably not been as aggressive as that of the Fed, in part because it was not able to do so due to a lower interest rate before the onset of the crisis; its key rates fell by three points during 2009. The deposit facility rate is now at 0.25 percent since May 2009, down from 3.25 percent in October 2008. This means that the liquidity trap is not out of sight. The stimulus effect of such policy is unclear. Artus (2009) reports a fall in interest rates on loans to businesses from a peak of 5.5 percent to 5 percent. This suggests a relatively low impact of monetary policy on actual lending rates. Incidentally, this rate is lower than the one prevailing in the US, despite looser monetary conditions there. Furthermore, according to Artus, part of this decline is due to a fall in the demand for loans associated with the deleveraging process. This further reduces the impact of ECB policy rates on lending rates. Thus it does not seem that any further ground for monetary expansion has been by-passed by the ECB. On the other hand, there is growing concern that the massive injection of liquidity during the crisis may be igniting a new asset bubble worldwide, as evi-

denced by the 25 percent hike in stock prices in just over six months during 2009.

6. Conclusion

In this Chapter we have discussed a number of challenges faced by the euro area in the context of the crisis. We can summarise our discussion as follows:

- The risk of a persistent overvaluation of the euro is not very important. It is unlikely that the exchange rate will exceed 1.5 dollars per euro.
- Fiscal imbalances of peripheral countries inside and outside the area, coupled with a severe contraction and problems of trade deficits and competitiveness, pose a real risk.
- To preserve the euro as a stable currency, a wave of bail-outs should be avoided. Similarly, we do not recommend introducing indirect bail-out instruments such as the “euro bonds”.
- Nor do we recommend early entry of countries such as Hungary or Latvia into the euro area on the grounds that it would solve their internal problems. Ideally, these countries should have achieved fiscal and monetary stability before joining the monetary union.
- If, however, policy-makers were to make the choice of early accession of CEECs in order to avoid a balance of payment crisis and a default on these countries’ external obligations, it is important that they enter at the proper exchange rate. In some cases (e.g. Latvia), this would imply a devaluation prior to entry. Even if entry takes place later in calmer circumstances, proper attention should be paid to the exchange rate and a devaluation should be considered if necessary, even though that it would conflict with the philosophy of ERM-II.
- Finally, we do not find cause for concern in the fact that monetary and fiscal policies are somewhat tighter in the euro area than in the US. First, the policy mix is extremely expansionary in the US, to a point that may be considered counterproductive. Second, in many European countries the fiscal margin of manoeuvre is reduced due to a high level of inherited public debt. Finally, lending rates seem not to react much to monetary policy rates, implying that the downside risks of further monetary easing are more relevant than any additional stimulus it could generate.

References

- Artus, Patrick, “Why should the ECB be criticized?”, Natixis Flash, 13 May 2009.
- Calderon, César (2008), “Do Free Trade Agreements Enhance the Transmission of Shocks Across Countries?”, Banco de Chile Working Paper.
- Canova, F. and H. Dellas (1993), “Trade Interdependence and the International Business Cycle”, *Journal of International Economics* 34, 23–47.
- Clark, T.E. and E. van Wincoop (2001), “Borders and Business Cycles”, *Journal of International Economics* 55, 59–85.
- Dornbusch, Rudiger , Ilan Goldfajn, Rodrigo O. Valdés, Sebastian Edwards and Michael Bruno (1995), “Currency Crises and Collapses”, *Brookings Papers on Economic Activity*, Vol. 1995, No. 2, 219–93.
- EEAG (2007), *The EEAG Report on the European Economy*, Munich: CESifo.
- Eichengreen, Barry (2007), “The break-up of the euro area”, NBER Working paper“ 13393.
- Kaminsky , Graciela L. and Carmen M. Reinhart (1999), “The Twin Crises: The Causes of Banking and Balance-Of-Payments Problems”, *American Economic Review*, 89/3 (June 1999), 473–500.
- Krugman, Paul (2008), “The international finance multiplier”, mimeo, October 2008.
- Lane, Philip and Gian Maria Milesi-Ferretti (2005), “The International Equity Holdings of Euro Area Investors”, The Institute for International Integration Studies Discussion Paper Series 104, IHS.
- Sachs, Jeffrey D. , Aaron Tornell, Andrés Velasco, Guillermo A. Calvo and Richard N. Cooper (1996), “Financial Crises in Emerging Markets: The Lessons from 1995”, *Brookings Papers on Economic Activity*, Vol. 1996, No. 1, 147–215.
- Stokes, Mary, “Is Eastern Europe on the Brink of an Asia-Style crisis?”, RGE Monitor, 2009.

THE MEMBERS OF THE EUROPEAN ECONOMIC ADVISORY GROUP AT CESIFO



Giancarlo Corsetti

(Ph.D. Yale, 1992) is Pierre Werner Chair and Professor of Economics at the European University Institute of Florence, on leave from the University of Rome III. He has taught at the Universities of Rome, Yale and Bologna. He is

director of the Pierre Werner Chair Programme on Monetary Unions at the Robert Schuman Center for Advanced Studies as well as a fellow of CESifo and CEPR, a member of the Council of the European Economic Association, and is regularly a visiting professor in central banks and international institutions. His main field of interest is international economics and open-economy macroeconomics with contributions that cover a wide range of issues: currency and fiscal instability, international transmission mechanism, monetary and fiscal policy, financial and real integration and global imbalances. His articles have appeared in the *Brookings Papers on Economic Activity*, *Economic Policy*, *European Economic Review*, *Journal of International Economics*, *Journal of Monetary Economics*, *Quarterly Journal of Economics*, and the *Review of Economic Studies*, among others. He is currently co-editor of the *Journal of International Economics* and the *International Journal of Central Banking*.

Robert Schumann Centre for Advanced Studies
Via dei Rocettini 9
50016 San Domenico di Fiesole
Italy
giancarlo.corsetti@eui.eu



Michael P. Devereux

(Ph.D. University College London, 1990) is Professor of the University of Oxford, Director of the Oxford University Centre for Business Taxation and Research Director of the European Tax Policy Forum. He is a Research Fellow of

CESifo, the Institute for Fiscal Studies and the Centre for Economic Policy Research. Before Oxford, he was Professor and Chair of Economics Departments at the Universities of Warwick and Keele. He is Vice-President of the International Institute of Public Finance and Editor-in-Chief of *International Tax and Public Finance*. He has been closely involved in international tax policy issues in Europe and elsewhere, working with the OECD's Committee of Fiscal Affairs, the European Commission and the IMF. His current research interests are mainly concerned with the impact of different forms of taxation on the behaviour of business – for example, the impact of taxation on corporate investment and financial policy and the location decisions of multinationals – and the impact of such behaviour on economic welfare. He has published widely in a range of academic journals.

Centre for Business Taxation
Saïd Business School University of Oxford
Park End Street
Oxford OX1 1HP
United Kingdom
michael.devereux@sbs.ox.ac.uk



Luigi Guiso

is Professor of Economics at the European University Institute and fellow of the Einaudi Institute for Economics and Finance in Rome. He is a Fellow of the Centre for Economic Policy Research, London and Director of the CEPR Finance

Programme. Current research interests and activity focus on households' savings and financial decisions, preference measurement and formation, culture and economic performance. He has published in the *Review of Economic Studies*, *Journal of Monetary Economics*, *Quarterly Journal of Economics*, *Journal of Political Economy*, and *American Economic Review*, *Journal of Finance*, *Journal of the European Economic Association* among other journals. He has consulted for international organisations such as Rand Corporation and the European Central Bank. He has won various prizes among which the 2002 NASDAQ Award of the American Financial Association for the best paper on capital markets and the 2009 Smith Breeden distinguished paper prize awarded by the *Journal of Finance*. He has delivered the 2007 Marshall Lecture: "Social Capital as Culture" at the European Economic Association.

Economics Department
 Villa San Paolo
 Via della Piazzuola 43
 50133 Firenze
 Italy
luigi.guiso@eui.eu



John Hassler

(Ph.D. Massachusetts Institute of Technology, 1994) is Professor of Economics at the Institute for International Economic Studies, Stockholm University. He is associate editor of the *Review of Economic Studies* and *Scandinavian Economic*

Review and an adjunct member of the Prize Committee for the Prize in Economic Sciences in Memory of Alfred Nobel. He is a consultant to the Finance Ministry of Sweden and a former member of the Swedish Economic Council. His research covers areas in macroeconomics, political economy, economic growth and public economics. He has published extensively in leading international journals like the *American Economic Review*, *Journal of Economic Theory*, *Journal of Economic Growth*, *Journal of Monetary Economics* and *Journal of Public Economics*. John Hassler is a fellow of the networks CESifo, IZA and CEPR.

IIES, Stockholm University
 SE-106 91 Stockholm
 Sweden
John@hassler.se



Gilles Saint-Paul

(Ph.D. Massachusetts Institute of Technology, 1990) is Professor of Economics at the University of Toulouse, GREMAQ-IDEI. He was researcher at DELTA and CERAS, Paris, 1990–1997, and professor at Universitat Pompeu Fabra, Barcelona,

1997–2000. He has held visiting professorships at CEMFI, Madrid, IIES, Stockholm, UCLA and MIT. He has been a consultant for the IMF, the World Bank, the European Commission, and the British, Portuguese, Spanish and Swedish governments. He is a fellow of CESifo and IZA and a Programme Director of the Centre for Economic Policy Research in London. He is also a fellow of the European Economic Association, and a member of the Conseil d'Analyse Economique, the main economic advisory board to the French prime minister. In 2007, he was awarded the Yrjö Jahnsson medal to the best European economist below 45 years of age by the European Economic Association. His research interests are economic growth, income distribution, political economy, labour markets, unemployment and fiscal policy. Selected publications include “Knowledge hierarchies in the labor market”, *Journal of Economic Theory* (2007), “Some evolutionary foundations for price level rigidity”, *American Economic Review* (2005); “The Political Economy of Employment Protection”, *Journal of Political Economy* (2002); *The Political Economy of Labour Market Institutions* (Oxford University Press, 2000); *Dual Labor Markets. A Macroeconomic Perspective* (MIT Press, 1996); *Innovation and Inequality* (Princeton University Press, 2008).

MF 206

GREMAQ-IDEI

Manufacture des Tabacs

Allée de Brienne

31000 Toulouse

France

gilles.saint-paul@univ-tlse1.fr



Hans-Werner Sinn

Hans-Werner Sinn is Professor of Economics and Public Finance at the University of Munich (LMU), President of the Ifo Institute for Economic Research, Director of the University of Munich's Center for Economic Studies (CES) and Director of

CESifo. He is a member of the Council of Economic Advisors to the German Ministry of Economics and a fellow of the European Economic Association as well as former president of the German Economic Association (Verein für Socialpolitik) and the International Institute of Public Finance (IIPF). He holds an honorary doctorate from the University of Magdeburg and an honorary professorship from the University of Vienna. He taught at the University of Western Ontario and held visiting fellowships at the London School of Economics and at Bergen, Stanford, Princeton, Oslo and Hebrew Universities. He received the first prizes of Mannheim University for his dissertation and post-doctoral theses, as well as a number of other prizes and awards, including the international Corinne Award for his book “Can Germany be Saved”, which has sold more copies than any other economic policy monograph in Germany in the last 100 years. In 2005 he was awarded the Officer's Cross of the Order of Merit of the Federal Republic of Germany. He has given the Yrjö Jahnsson Lectures, Stevenson Lectures, Tinbergen Lectures, World Economy Annual Lecture at the University of Nottingham and the Thünen Lecture. He has published 18 monographs with 32 editions in six languages, including *Economic Decisions under Uncertainty*, *Capital Income Taxation and Resource Allocation*, *Jumpstart – The Economic Unification of Germany*, *The New Systems Competition and Can Germany Be Saved?* His book *Das grüne Paradoxon* developed a supply-side approach to policies against global warming, and *Kasino Kapitalismus*, his latest, analyses the roots of the financial crisis and the measures needed to avoid a recurrence. He has published in such international journals as the *American Economic Review*, the *Quarterly Journal of Economics*, the *European Economic Review* and the *Journal of Public Economics*.

Ifo Institute for Economic Research

Poschingerstr. 5

81679 Munich

Germany

sinn@ifo.de



Jan-Egbert Sturm

(Ph.D. University of Groningen, 1997) is Professor of Applied Macroeconomics, Director of the KOF Swiss Economic Institute at the ETH Zurich and President of the Centre for International Research on Economic Tendency Surveys

(CIRET). He was researcher at the University of Groningen, The Netherlands, until 2001, and taught as Visiting Professor at the School of Business, Bond University, Gold Coast, Australia, 2000 and 2005. As Head of the Department for Economic Forecasting and Financial Markets at the Ifo Institute for Economic Research, he was also Professor of Economics at the University of Munich (LMU) at the Center for Economic Studies (CES), 2001–2003. He held the Chair of Monetary Economics in Open Economies at the University of Konstanz, Germany, which was coupled with the position of Director of the Thurgau Institute of Economics (TWI) in Kreuzlingen, Switzerland, 2003–2005. In his research, Jan-Egbert Sturm relies heavily on empirical methods and statistics, concentrating on monetary economics, macroeconomics as well as political economy. His applied studies have focused on, for example, economic growth and central bank policy. He has published several books, contributed articles to various anthologies and international journals like *Applied Economics*, *Economics & Politics*, *Empirica*, *Empirical Economics*, *European Economic Review*, *European Journal of Political Economy*, *German Economic Review*, *Journal of Banking and Finance*, *Journal of Development Economics*, *Journal of Economic Surveys*, *Journal of Macroeconomics*, *Kredit und Kapital*, *Kyklos*, *Public Choice*, and *Scandinavian Journal of Economics*. Jan-Egbert Sturm headed the Ifo research team at the Joint Analysis of the Six Leading German Economic Research Institutes, 2001–2003. Since 2001 he has been member of the CESifo Research Network and since 2003 Research Professor at the Ifo Institute. In 2006 he was appointed member of the User Advisory Council of the Ifo Institute.

ETH Zurich
 KOF Swiss Economic Institute
 WEH D 4
 Weinbergstr. 35
 8092 Zurich
 Switzerland
 sturm@kof.ethz.ch



Xavier Vives

(Ph.D. in Economics, UC Berkeley) is Professor of Economics and Finance at IESE Business School. He is a member of the Economic Advisory Group on Competition Policy at the European Commission; Research Fellow of the Center for Economic

Policy Research, where he served as Director of the Industrial Organization Program in 1991–1997, and of CES ifo since 2006. He is also a Fellow of the Econometric Society since 1992 and of the European Economic Association since 2004, and was President of the Spanish Economic Association for 2008. From 2001 to 2005 he was The Portuguese Council Chaired Professor of European Studies at INSEAD, Research Professor at ICREA-UPF in 2004–2006, and from 1991 to 2001 Director of the Institut d'Anàlisi Econòmica, CSIC. He has taught at Harvard University, Universitat Autònoma de Barcelona, Universitat Pompeu Fabra, the University of California at Berkeley, the University of Pennsylvania and New York University. His fields of interest are industrial organization and regulation, the economics of information, and banking and financial economics. He has published in the main international journals and is the author of *Information and Learning in Markets* (PUP, 2008), *Oligopoly Pricing* (MIT Press, 1999). He has been editor of main international academic journals, including the *Journal of the European Economic Association*, and is Co-editor of the *Journal of Economics and Management Strategy*. He has been awarded an Advanced European Research Council Grant for the period 2009–2013 and has received several research prizes: Premio Juan Carlos I in 1988; the Societat Catalana de Economia prize in 1996; the Narcís Monturiol medal in 2002 and the Premi Catalunya d'Economia in 2005. Xavier Vives has been a consultant on competition, regulation, and corporate governance issues for the World Bank, the Inter-American Development Bank and the European Commission as well as for major international corporations.

IESE Business School
 University of Navarra
 Avda. Pearson 21
 08034 Barcelona
 Spain
 XVives@iese.edu

The **EEAG** Report

on the European Economy

PREVIOUS REPORTS

The EEAG Report on the European Economy 2009

The European Economy: Macroeconomic Outlook and Policy
Financial Crisis
Private Equity
Country Chapter: France

The EEAG Report on the European Economy 2008

The European Economy: Macroeconomic Outlook and Policy
How Much Real Dollar Depreciation is Needed to Correct Global Imbalances?
The Effect of Globalisation on Western European Jobs: Curse or Blessing?
Industrial Policy
Global Warming: The Neglected Supply Side

The EEAG Report on the European Economy 2007

The European Economy: Macroeconomic Outlook and Policy
Macroeconomic Adjustment in the Euro Area – the Cases of Ireland and Italy
The New EU Members
Scandinavia Today: An Economic Miracle?
Tax Competition
Economic Nationalism

The EEAG Report on the European Economy 2006

The European Economy: Macroeconomic Outlook and Policy
Global Imbalances
Economic Growth in the European Union
Prospects for Education Policy in Europe
Mergers and Competition Policy in Europe

The EEAG Report on the European Economy 2005

The European Economy: Current Situation and Economic Outlook for 2005
Outsourcing
Longer Working Hours – the Beginning of a new Trend?
Pensions and Children
House Prices in Europe

The EEAG Report on the European Economy 2004

The European Economy: Current Situation and Economic Outlook
Labour Market Reform in Europe
Pay-setting Systems in Europe: On-going Development and Possible Reforms
The Economics of Discrimination: Equity, Equality and Diversity in the New European Constitution
The 2004 EU Enlargement: Key Economic Issues
Acceding Countries: The Road to the Euro

The EEAG Report on the European Economy 2003

The European Economy: Current Situation and Economic Outlook
Fiscal Policy and Macroeconomic Stabilisation in the Euro Area: Possible Reforms of the Stability and Growth Pact and National Decision-Making-Processes
Rethinking Subsidiarity in the EU: Economic Principles
Financial Architecture
Should We Worry about the Brain Drain?

The EEAG Report on the European Economy 2002

The European Economy: Current Situation and Economic Outlook
The Weakness of the Euro: Is it Really a Mystery?
Fiscal and Monetary Policy
Prices, Wages and Inflation after the Euro – What Europeans Should or Should not Expect
Growth and Productivity
Welfare to Work
CAP Reform



CESifo International Spring Conference 2010

Getting the Global Economy Unstuck



Final Programme

Thursday 18 and Friday 19 March 2010
Akademie der Konrad-Adenauer-Stiftung,
Berlin



A joint initiative of Ludwig-Maximilians University and the Ifo Institute

Please register before 26 Feb. 2010

You may download a registration application form from www.cesifo-group.de/isc. Online-payment with credit card possible.

Members of the Ifo Institute & participants in the Ifo survey:

First day only: € 250
Second day only: € 220
Both days: € 400

Standard fees:

First day only: € 300
Second day only: € 270
Both days: € 500

Cancellation policy:

A 50% cancellation fee will apply for all cancellations made after 5 March 2010.

Please make payment to CESifo GmbH

Account No. : 43 75 20 73

Bank Code (BLZ) : 700 202 70

BIC : HYVEDEMMXXX

IBAN : DE 17 7002 0270 0043 7520 73

Contact: Deirdre Hall

Ifo Institute for Economic Research

Poschingerstr. 5

81679 Munich, Germany

Tel. +49 (0)89 9224 1410 – Fax +49 (0)89 9224 1409

hall@cesifo.de

Akademie der Konrad-Adenauer-Stiftung

Tiergartenstr. 35

10785 Berlin, Germany

www.kas.de

Ifo Institute for Economic Research

Ms. Deirdre Hall

P.O. Box 86 04 60

81631 Munich

Germany

18 March 2010**19 March 2010**

11:00	Press conference	9:30	Welcome and Introduction Hans-Günther Vieweg, Ifo Institute, Munich
12:00	Cold buffet lunch	9:40	Steel Industry – Globalisation, Regionalism and the End of Recession Tony Cockerill, University of Cambridge, Cambridge
12:45	Welcome and Introduction	10:10	Value Creation in the Chemical Industry – Past, Present, Future Klaus Griesar, Merck KGaA, Darmstadt
13:00	Welcome in the World of Chaos – Impact of Financial Markets on Economic Perspectives Freddy van den Spiegel, BNP Paribas Fortis, Bruxelles	10:40	Discussion
13:30	How to Re-establish the Capital Market Hans-Werner Sinn, Ifo Institute, Munich	11:00	Coffee break
14:00	US Imbalances and Global Rebalancing Alan Ruskin, Royal Bank of Scotland, New York	11:15	European Supply Industry – Trends and Challenges Max Schumacher, CAEF – The European Foundry Association, Düsseldorf
14:30	Discussion	11:45	When Governments Come into Play – Why the Auto Industry Continues to Destroy Value Arndt Ellinghorst, Credit-Suisse, London
15:00	Coffee break	12:15	Aerospace Industry – On a Bumpy Road to a Bright Future? Hans-Günther Vieweg, Ifo Institute, Munich
15:30	Divergence and Deficits: Challenges to the European Monetary Union Kai Carstensen, Ifo Institute, Munich	12:45	General discussion
16:00	Relative Endurance of Latin America to the Crisis – Don't Rest on your Laurels Enrique Alberola Ila, Banco de Espana, Madrid	13:00	End of session
16:30	China – An Economic Power Becomes a Political Challenger Markus Taube, University of Duisburg, Duisburg	14:00	End of conference
17:00	General discussion		
17:30	End of session		
19:00	Dinner		

Registration Form

Please register before **26 Feb. 2010**. For more information, visit www.cesifo-group.de/isc, the conference's main page.

Last name, first name

Position, Institution

Street address

City

Country

E-Mail address

VAT-number

Members of the Ifo Institute & participants in the Ifo survey

Standard fees

first day only	<input type="checkbox"/> € 300	<input type="checkbox"/> € 250
second day only	<input type="checkbox"/> € 270	<input type="checkbox"/> € 220
both days	<input type="checkbox"/> € 500	<input type="checkbox"/> € 400

I will attend the conference dinner on 18 March 2010. Yes No

Method of Payment

<input type="checkbox"/> Invoice *	<input type="checkbox"/> MasterCard/Eurocard
<input type="checkbox"/> Visa	<input type="checkbox"/> American Express

Card No.

Valid until

Signature

Mail to Deirdre Hall, Ifo Institute, P.O. Box 860460, 81631 Munich or fax to: +49 (0) 89 9224 1409

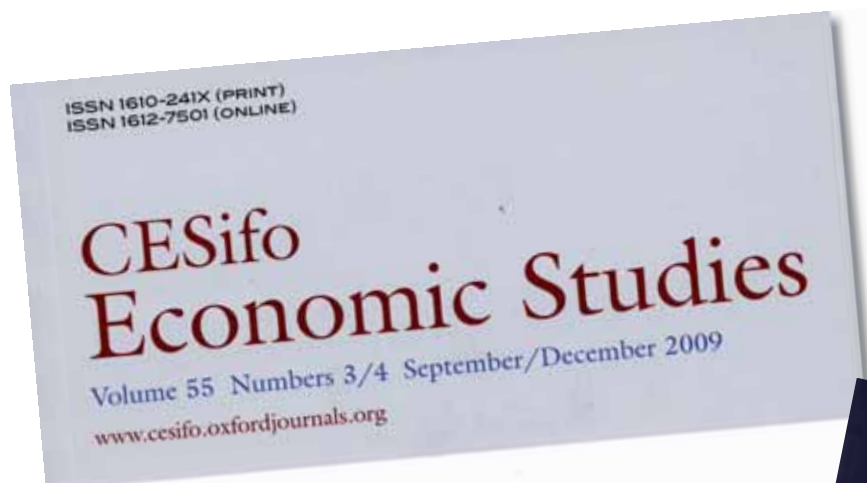
* Please make payment to CESifo GmbH

Account No. : 43 75 20 73

Bank Code (BLZ) : 700 202 70

BIC : HYVEDEN33XXX

IBAN : DE 17 7002 0270 0043 7520 73



Symposium on Executive Pay

Introduction to the Symposium on Executive Pay
Florian Englmaier, Gerhard Illing and Efraim Sadka

In Search of Reasonable Executive Compensation
Engene Kandel

How Much Sunlight Does it Take to Disinfect a Boardroom? A Short History of Executive Compensation Regulation in America
Ian Dew-Becker

Learning from the Past: Trends in Executive Compensation over the 20th Century
Carola Frydman

Strong Managers, Weak Boards?
Renee B. Adams and Daniel Ferreira

Insider Information and Performance Pay
George-Levi Gayle and Robert A. Miller

Taxes and Executive Compensation: Evidence from the 1990s
Peter Katalinák

Bonus Payments and Fund Managers' Behavior: Transatlantic Evidence
Thomas P. Georig, Tobias Lütje and Lukas Menkhoff

Symposium on Inequality in China

Introduction to the Symposium on Poverty and Inequality in China
John Whalley

What Lies behind Rising Earnings Inequality in Urban China? Regression-based Decompositions
Qiyong Deng and Shi Li

Power as a Driving Force of Inequality in China: How Do Party Membership and Social Networks Affect Pay in Different Ownership Sectors?
Shuang Li, Ming Lu and Hiroshi Sato

Rural Income Volatility and Inequality in China
John Whalley and Ximing Yu

CESifo A joint initiative of the University of Munich's Center for Economic Studies and the Ifo Institute for Economic Research

OXFORD JOURNALS
OXFORD UNIVERSITY PRESS



CESifo Economic Studies publishes provocative, high-quality papers in economics, with a particular focus on policy issues. Papers by leading academics are written for a wide and global audience, including those in government, business, and academia. The journal combines theory and empirical research in a style accessible to economists across all specialisations.

Editor Team: Panu Poutvaara, Matz Dahlberg, Rick van der Ploeg, and John Whalley

Visit the website to view a free online sample copy of the journal and to place your subscription order:

www.cesifo.oxfordjournals.org

published by



OXFORD JOURNALS
OXFORD UNIVERSITY PRESS

on behalf of



THE AUTHORS



Giancarlo Corsetti

European University
Institute, Florence



Professor of economics at the European University Institute in Florence, on leave from the University of Rome III. Director of Pierre Werner Chair Programme on Monetary Union at the Robert Schuman Centre for Advanced Studies. Visiting scholar and consultant to the Bank of Italy, the European Central Bank and the Federal Reserve Bank of New York. Co-editor of the *Journal of International Economics*.

Michael P. Devereux

University of Oxford



Professor at the University of Oxford, Director of the Oxford University Centre for Business Taxation, Research Director of the European Tax Policy Forum, and Research Fellow of the Institute for Fiscal Studies and of the Centre for Economic Policy Research. Previously, Professor and Chair of Economics Departments at the Universities of Warwick and Keele. Vice-President of the International Institute of Public Finance. Editor-in-Chief of *International Tax and Public Finance*.

Luigi Guiso

European University
Institute, Florence



Professor of Economics at the European University Institute and fellow of the Einaudi Institute for Economics and Finance in Rome. He is a Fellow of the Centre for Economic Policy Research and Director of the CEPR Finance Programme. Current research interests and activity focus on households' savings and financial decisions, preference measurement and formation, culture and economic performance.

John Hassler

Stockholm University



Professor of Economics at the Institute for International Economic Studies, Stockholm University. He is associate editor of the *Review of Economic Studies* and *Scandinavian Economic Review* and an adjunct member of the Price Committee for the Price in Economic Sciences in Memory of Alfred Nobel. He is a consultant to the Finance Ministry of Sweden and a former member of the Swedish Economic Council.

Gilles Saint-Paul

Université des Sciences
Sociales, Toulouse
EEAG Chairman



Professor of Economics, GREMAQ-IDEI, at the University of Toulouse. Former researcher at DELTA and CERAS, Paris, and professor at Universitat Pompeu Fabra, Barcelona. Visiting professorships at CEMFI, IIES, UCLA and MIT. Fellow of the European Economic Association, and a member of the Conseil d'Analyse Economique, the main economic advisory board to the French prime minister.

Hans-Werner Sinn

Ifo Institute and University
of Munich



Professor of Economics and Public Finance at the University of Munich and President of the Ifo Institute for Economic Research. Director of the University of Munich's Center for Economic Studies (CES). President of CESifo. Member of the Council of Economic Advisors to the German Ministry of Economics and a fellow of the European Economic Association.

Jan-Egbert Sturm

KOF, ETH Zurich
EEAG Vice-Chairman



Professor of Applied Macroeconomics and Director of the KOF Swiss Economic Institute, ETH Zurich. President of the Centre for International Research on Economic Tendency Surveys (CIRET). He previously was Professor of Monetary Economics at the University of Konstanz and Professor of Economics at the University of Munich.

Xavier Vives

IESE Business School



Professor of Economics and Finance at IESE Business School. Fellow of the Econometric Society since 1992 and of the European Economic Association since 2004. Member of the Economic Advisory Group on Competition Policy at the European Commission and editor of the *Journal of the European Economic Association* (1998-2002 and 2003-2008). He has taught at INSEAD, Harvard, NYU, UAB, UPF and the University of Pennsylvania. Research Professor at ICREA-UPF (2003-2006) and Research Professor and Director of the Institut d'Anàlisi Econòmica-CSIC (1991 to 2001).