

III. Rebalancing growth

Five years after the onset of the subprime crisis, global economic growth is still unbalanced. Among the advanced economies still confronting the fallout of a major credit and housing bust are, most notably, Ireland, Spain, the United Kingdom and the United States. The slump in the construction and other real estate-related sectors has been particularly acute in Ireland and Spain. These sectoral imbalances are likely to have significant and long-lasting effects on employment. As households and firms struggle to service their debts, the banking systems of these countries are staggering under a high volume of non-performing loans. Credit ratios and debt service costs are also rising in several countries that escaped a housing bust, although the proportion of troubled loans remains low. Further, some economies that have relied heavily on export-led growth are also likely to face challenges soon.

In this chapter, we first turn to the structural imbalances that must be corrected before economies can return to a path of steady growth. Then we focus on private sector debt (see Chapter V for a discussion of public debt) both in countries that experienced a home-grown financial crisis and in others that did not. A final section discusses policy implications.

Structural adjustment

Growth models in many countries will need to change. Rising property prices led to rapid growth in construction and other real estate-related activities in some countries. These imbalances need to be resolved if these economies are to grow sustainably. The collapse of the housing sector has also revealed long-standing structural weaknesses, such as rigid labour or product rules, that seem insignificant in good times but hinder adjustment when the economy is hit by a shock.

Other economies have specialised in exports to countries that are likely to grow less rapidly in the future. They face a different set of challenges. Some are highly competitive, at least in certain individual sectors, but they are nonetheless vulnerable to a growth slowdown in their trading partners.

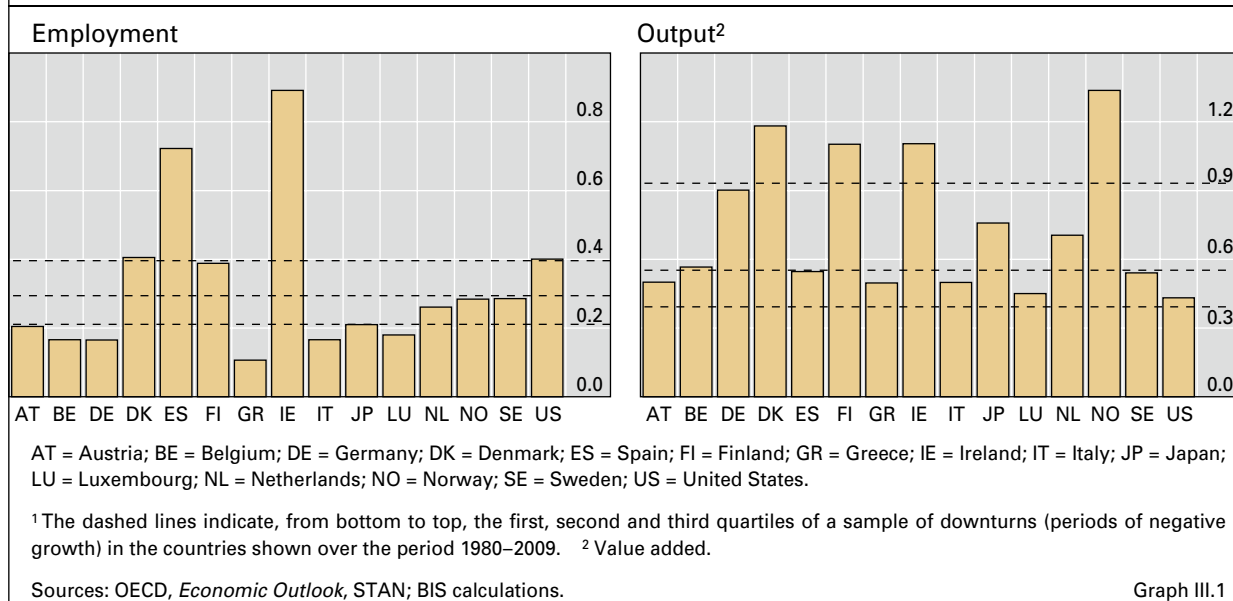
Unemployment after the housing bust

Unemployment remains high in many advanced economies, not only those hit by sovereign debt concerns (see Chapter II). One reason for the persistence of high unemployment is sectoral imbalances built up pre-crisis, the full extent of which has only now become apparent.¹ During the housing boom, the construction, real estate and finance sectors strongly outgrew the rest of the economy. In Ireland, for instance, construction increased its share of total

¹ See BIS, *81st Annual Report*, June 2011, Chapter II.

Sectoral imbalances in employment and output in the Great Recession¹

Concentration of job and output losses (average absolute changes in sectoral shares between 2008 and 2009), in percentage points



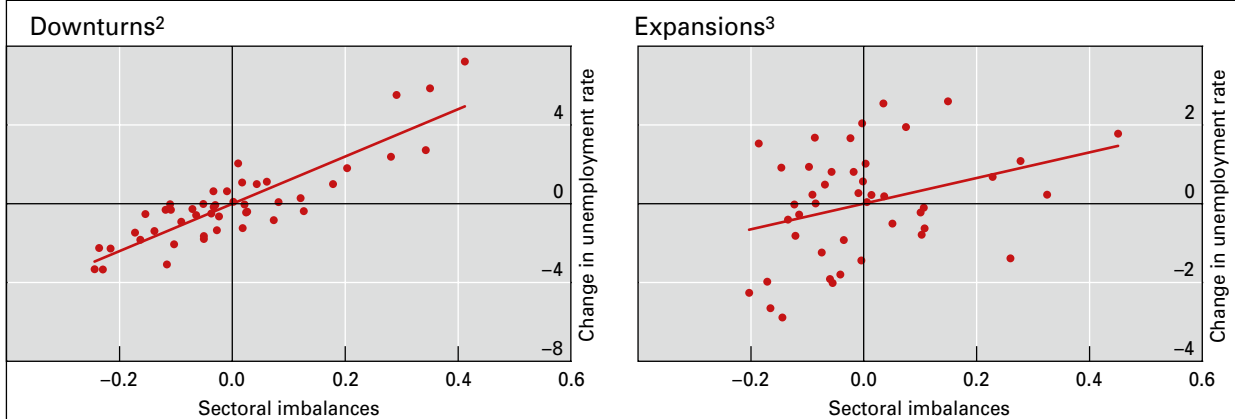
employment from 8.6% to 13% between 1997 and 2007; in Spain, the share increased from 10% to 14%. In the United States, by contrast, this measure barely moved during the same period, inching up from 4.5% to 5.2%. But the overgrown Irish and Spanish construction sectors unravelled very quickly during the Great Recession, with their share of employment slumping below 1997 levels. High unemployment rates in these countries show that the laid-off workers have generally not found other sources of employment, reflecting how the reallocation of resources across sectors can be difficult. This can slow the recovery.

Imbalances tend to reveal themselves when times turn bad. A good measure of the sectoral imbalances that developed during the boom is therefore the concentration of job and output losses in particular industries during the subsequent downturn, as industries that have grown beyond a sustainable size tend to contract most. For instance, job losses after the financial crisis were much more concentrated in particular sectors in Ireland and Spain than in Germany or Japan (Graph III.1, left-hand panel), which did not experience home-grown housing and construction booms but “imported” the crisis through trade and financial channels. In fact, the job losses experienced by Ireland and Spain during the Great Recession were much more concentrated in particular sectors than those of past downturns (the dashed lines across the bar chart indicate the sample quartiles). The experience of the United States is somewhere in between that of the two groups of countries.

The concentration of output losses (Graph III.1, right-hand panel) provides a somewhat different view from that of job losses. Some of the countries experiencing highly concentrated job losses, such as Ireland, also saw a highly concentrated drop in output, but others did not. In fact, at less than 0.4, the correlation between sectoral imbalances computed using employment and output is quite low. For example, some countries such as Germany or Norway,

Sectoral imbalances¹ and unemployment

Deviation from sample mean, in percentage points



¹ Average of absolute changes in sectoral shares of total employment during downturns for countries in Graph III.1. ² Episodes of negative GDP growth for the period 1980–2009. ³ Two-year windows after end of downturn.

Sources: OECD, *Economic Outlook*, STAN; BIS calculations.

Graph III.2

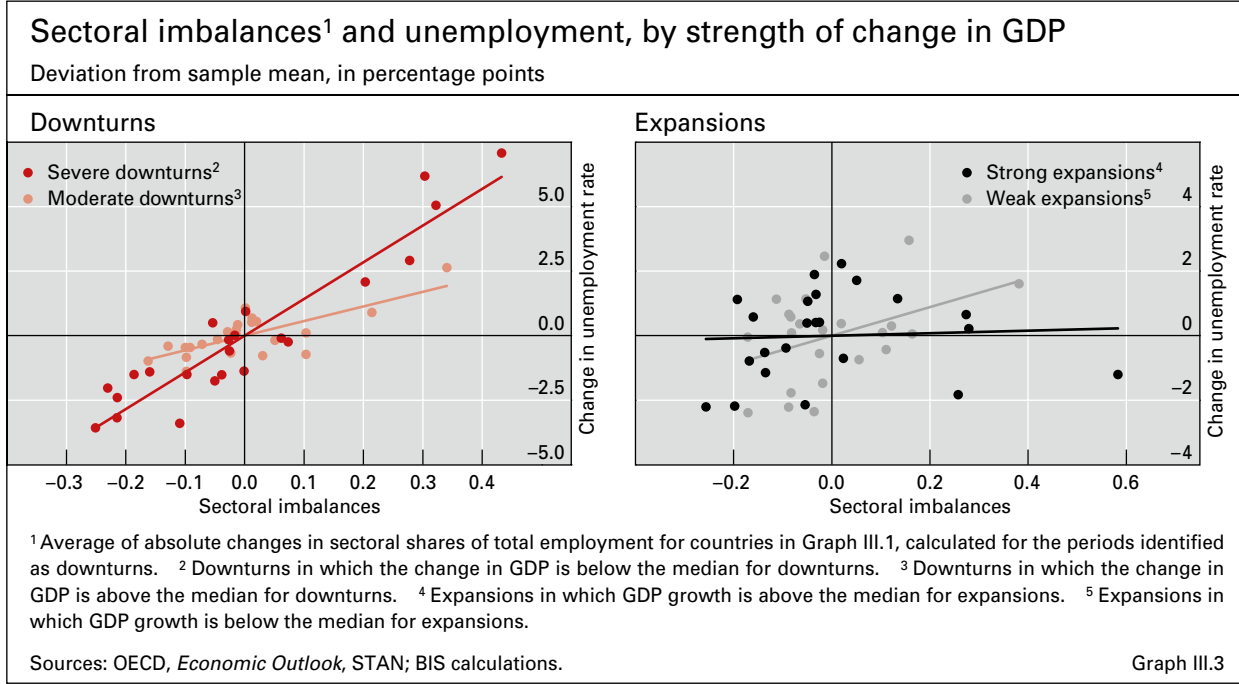
where the drop in employment was not particularly concentrated, experienced a severely unbalanced downturn based on output. Conversely, the output drop in Spain was more uniformly spread across sectors than were employment losses.

Large sectoral imbalances frequently entail a steeper rise in unemployment during the downturn (Graph III.2, left-hand panel). In fact, the sectoral concentration of job losses explains the increase in unemployment even better than the magnitude of the output drop (Okun's law).² For example, unemployment increased by 8 percentage points more in Spain than in Japan between 2007 and 2009. According to our estimates, around 70% of this difference, or 5.6 percentage points, can be explained by the more unbalanced pattern of the downturn in Spain. On average, cross-country differences in sectoral imbalances account for 60% of cross-country differences in changes in unemployment during recessions while the decline in GDP accounts for less than 20%.

Large sectoral imbalances lead not only to larger increases in unemployment during recessions but also to slower declines in unemployment during the subsequent expansions (Graph III.2, right-hand panel).³ In fact, unemployment continues to increase in countries with high imbalances even after GDP starts to recover. This should not come as a surprise, given the difficulties in reallocating resources across sectors. A high concentration of job losses during the downturn is followed by a slower reduction in unemployment in the first two years of the recovery, even after controlling for GDP growth. For example, Spain, which with Ireland experienced the most concentrated job

² This result is obtained by estimating a regression for a cross section of OECD countries where the change in the unemployment rate during the downturn depends on both the change in GDP and the sectoral concentration of job losses during this period. It suggests that the increase in unemployment during a downturn depends not so much on the depth of the downturn, but on how unbalanced it is.

³ We define the expansion period as the two years after the end of a downturn.



losses, also saw the largest increase in unemployment during the subsequent expansion. These estimates also suggest that, everything else being equal, unemployment in the United States would have declined 1.3 percentage points more rapidly in the two years after the recent downturn if the country's sectoral balance of job losses had resembled that of Germany.

The impact of sectoral imbalances on unemployment is particularly large in severe recessions and weak recoveries (Graph III.3). This suggests that output growth has only an indirect role in explaining unemployment during recessions, by raising the cost of sectoral imbalances. In expansions, by contrast, GDP growth has both a direct and an indirect role in explaining unemployment. Higher GDP growth in expansions leads to a sharper drop in unemployment even if sectoral imbalances are large. Imbalances matter only in low-growth expansions, when they slow the reduction in unemployment.

A severe downturn and an unprecedented level of sectoral imbalances therefore represent the worst possible mix for labour market developments in the coming years. Unfortunately, this is the prospect that Ireland, Spain and the United States now face. These countries all experienced an unbalanced downturn followed by a weak recovery, which helps to explain why unemployment has remained so high. Looking forward, this combination of large sectoral imbalances and a tepid recovery could set the scene for a prolonged period of high unemployment.

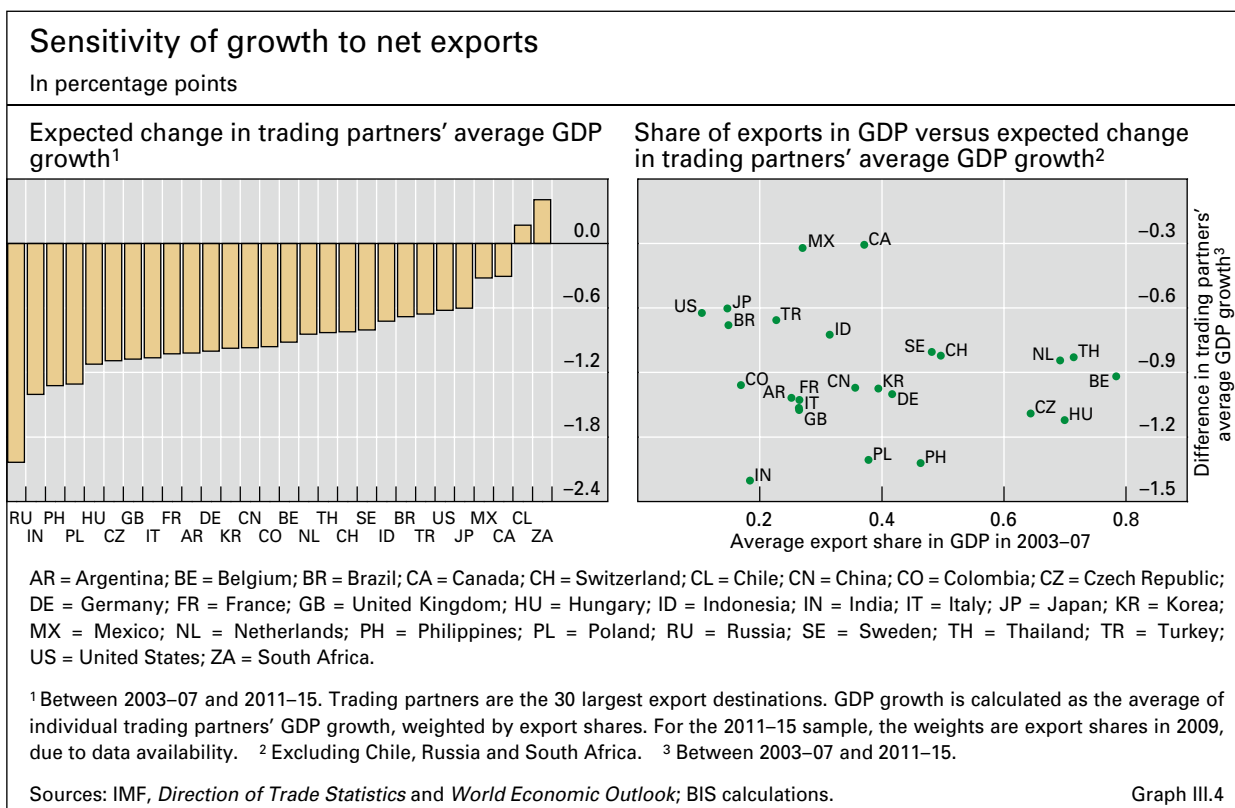
Reliance on external demand

Many economies are forecast to grow slowly for some time. As exports to these economies will not provide the same boost to output as in the past, countries that have relied on export-driven growth will need to shift to a more domestic-oriented model. For instance, the left-hand panel of Graph III.4 shows that only two of 28 representative emerging and advanced economies can expect their

trading partners to grow more rapidly in 2011–15 than in 2003–07.⁴ All the other economies will face a (sometimes significant) deterioration in the growth of their export markets if growth forecasts prove accurate. Countries such as Russia or India could experience considerable headwinds if growth slows as expected in their trading partners (Ukraine and Turkey for Russia, Middle East markets for India) during 2011–15. These headwinds could also be significant for most European countries, which trade heavily with each other and where growth forecasts have been sharply cut back.

The greater an economy's export dependency, the more it will suffer from declining growth in its export markets. The right-hand panel of Graph III.4 thus plots the expected drop in external demand growth (illustrated in the left-hand panel) against the average share of exports in GDP during 2003–07. Of course, the impact on economic growth will also depend on the import content of exports, for which only limited data are available. Two country groupings emerge from this diagram.

A first group of countries comprises small open economies with a large share of exports in GDP – more than 60% – that are expected to suffer a large drop in their trading partners' growth. This group includes Belgium, the Czech Republic, Hungary, the Netherlands and Thailand. For example, around one fifth of Thai exports goes to countries where growth is expected to drop by no less than 2 percentage points in 2011–15 as compared with 2003–07.



⁴ We estimate the expected decline in output growth by comparing the average rate of GDP growth of the top 30 export markets in 2003–07 with the projections for 2011–15.

A second group includes countries that should be relatively immune to external developments, either because they are large economies where exports represent only a small share of total GDP – such as the United States, Japan or Brazil – or because growth in their external demand is expected to fall only moderately – these include Canada, Indonesia, Mexico and Turkey. In particular, Canada, Mexico and the United States could escape many of the ill effects of sluggish growth elsewhere because they trade significantly with each other and their own growth is expected by many analysts to be relatively robust.

China and the largest western European countries (France, Germany, Italy and the United Kingdom) are located somewhere between these two groups. They are likely to face a significant drop (of around 1 percentage point) in the growth of their trading partners, but their exports represent no more than around 40% of their GDP, which will limit the fallout from slower external demand growth. Among these countries, Germany may be the most vulnerable.

Debt sustainability

Unsustainable debts were ultimately the source of the financial crisis, and there is little evidence that the situation has become much better since. Measures of debt sustainability have not improved much in the countries at the heart of the financial crisis and have worsened in many other economies.

House prices in Ireland, Spain, the United Kingdom and the United States – countries that experienced a housing boom and bust – are well below pre-crisis levels, and many households and firms are struggling to repay debt contracted during the boom.⁵ Aggregate figures suggest that households in Spain, the United Kingdom and the United States have made some progress in deleveraging. In Ireland, debt-to-income ratios have remained high, since sizeable debt repayments have been offset by an equivalent drop in disposable income. The non-financial corporate sectors in Ireland, Spain and the United Kingdom have made much less progress in deleveraging. In the United States, the indebtedness of the non-financial corporate sector remained rather stable during the housing boom, suggesting that there is no generalised need to deleverage after the bust.

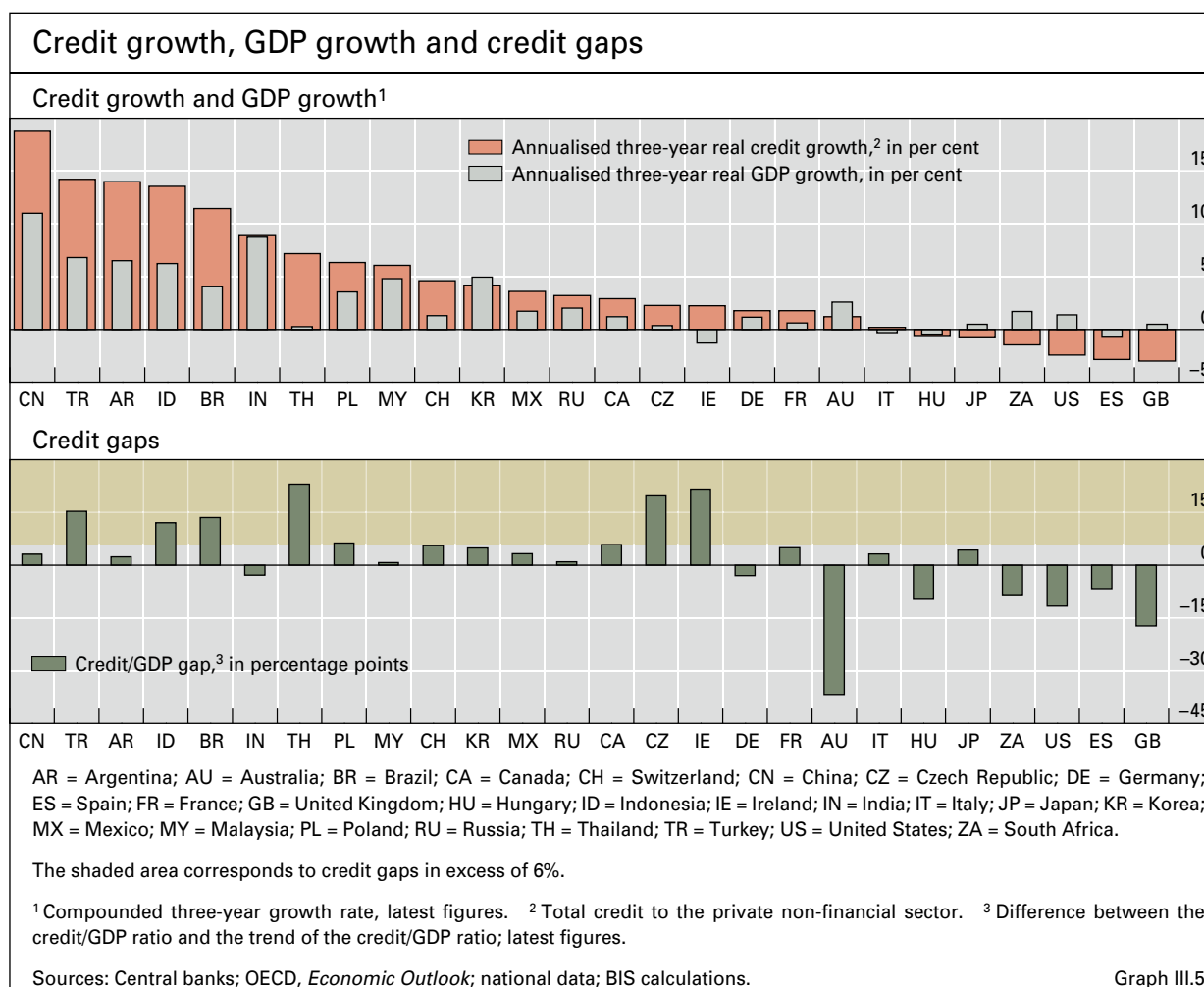
That said, aggregate debt-to-income ratios may paint too benign a picture. Finer data for the United States suggest that aggregate deleveraging did not come about through writedowns of unsustainable debt.⁶ Rather, it was driven primarily by a fall in the number of households increasing their mortgage debt (eg through home equity extraction) and by a sharp reduction in new mortgage borrowing. Meagre borrowing by first-time buyers entails weak activity in the housing market, which in turn reflects the overhang of unsold houses. In fact, the share of households reporting that they were somewhat likely or very likely

⁵ See BIS, *81st Annual Report*, June 2011, pp 24–7, for a discussion of deleveraging in the private non-financial sector.

⁶ Writedowns were large, but they did not translate into a one-to-one reduction in debt because properties are often remortgaged after being sold off. For this reason, aggregated data do not reveal the contribution of charge-offs to changes in household debt.

to be unable to meet their mortgage payments over the next year has barely fallen. This shows that progress in deleveraging has been limited.⁷ We are not aware of similar data for Ireland, Spain or the United Kingdom, but the small number of houses bought and sold suggests that the picture is not too different. The lower writedowns on household debt in these countries than in the United States tell a similar story.

While the stock of debt to GDP has fallen in the four countries that experienced a housing bust together with a financial crisis, debt-to-GDP ratios have continued to rise in many other economies (Graph III.5, top panel). Credit has burgeoned in several major emerging market economies in recent years. For instance, real credit grew by almost 20% annually over the last three years in China, although it has been slowing recently. Real credit in Turkey, Argentina, Indonesia and Brazil has also far outpaced GDP, and credit growth has even accelerated during the past three years. But it is not only in emerging



⁷ See N Bhutta, "Mortgage debt and household deleveraging: accounting for the decline in mortgage debt using consumer credit record data", Federal Reserve Board *Finance and Economics Discussion Series*, 2012–14, and K Dynan, "Is a household debt overhang holding back consumption?", Brookings Institution, 2012, mimeo.

market economies that credit is growing rapidly. Households in several of the advanced countries that escaped a housing or credit boom but whose banking systems are nevertheless under stress (eg France, Italy and Switzerland) have taken on substantial additional debt, much of it to finance real estate. Only in Germany have households continued to reduce their debt-to-income ratios.

Rapid credit growth is not necessarily bad. Financial systems in many emerging economies are still relatively underdeveloped, and many households and firms are shut out of formal credit markets. Thus, rapid credit expansion could reflect financial development as much as financial excess. And even in advanced economies, rapid credit growth need not by itself herald the onset of financial vulnerabilities.

That said, financial deepening takes time: credit growth that overwhelms the capacity of financial institutions to screen and process loans may result in bad lending decisions and financial stress even when the share of credit in GDP is low. Similarly, a bloated financial sector can also suck in more than its share of talent, hampering the development of other sectors.⁸

Unfortunately, there is no conclusive way to distinguish between financial imbalances and financial deepening involving rapid but sustainable credit growth. But credit growth that is significantly above its long-term trend, opening up a so-called credit gap, often foreshadows a financial crisis. At present, several (but not all) of the countries experiencing rapid credit growth have credit gaps in excess of 6%, levels that in the past have often presaged serious financial distress (Graph III.5, bottom panel).⁹

Asset prices too look increasingly frothy in many emerging economies. In some important local Brazilian markets, real estate prices have almost doubled since the onset of the subprime crisis. Appreciation of real estate assets in China is even more pronounced, with land prices in Beijing and Shanghai increasing almost fivefold since 2004. Other local markets have not been so bullish, although prices have risen substantially in many cases (see Chapter II). In all these emerging markets, imbalances seem to be building up mainly within certain regions or market segments (eg high-end housing in China). Even so, it does not necessarily follow that any potential bust will be any less damaging for the financial system if mortgages are also concentrated in these areas.

Measures of debt service cost also suggest that high debt levels could be a problem. The fraction of GDP that households and firms in Brazil, China, India and Turkey are allocating to debt service stands at its highest level since the late 1990s, or close to it. This measure could move even higher should interest rates rise from their current low levels (Graph III.6).¹⁰ Debt tends to

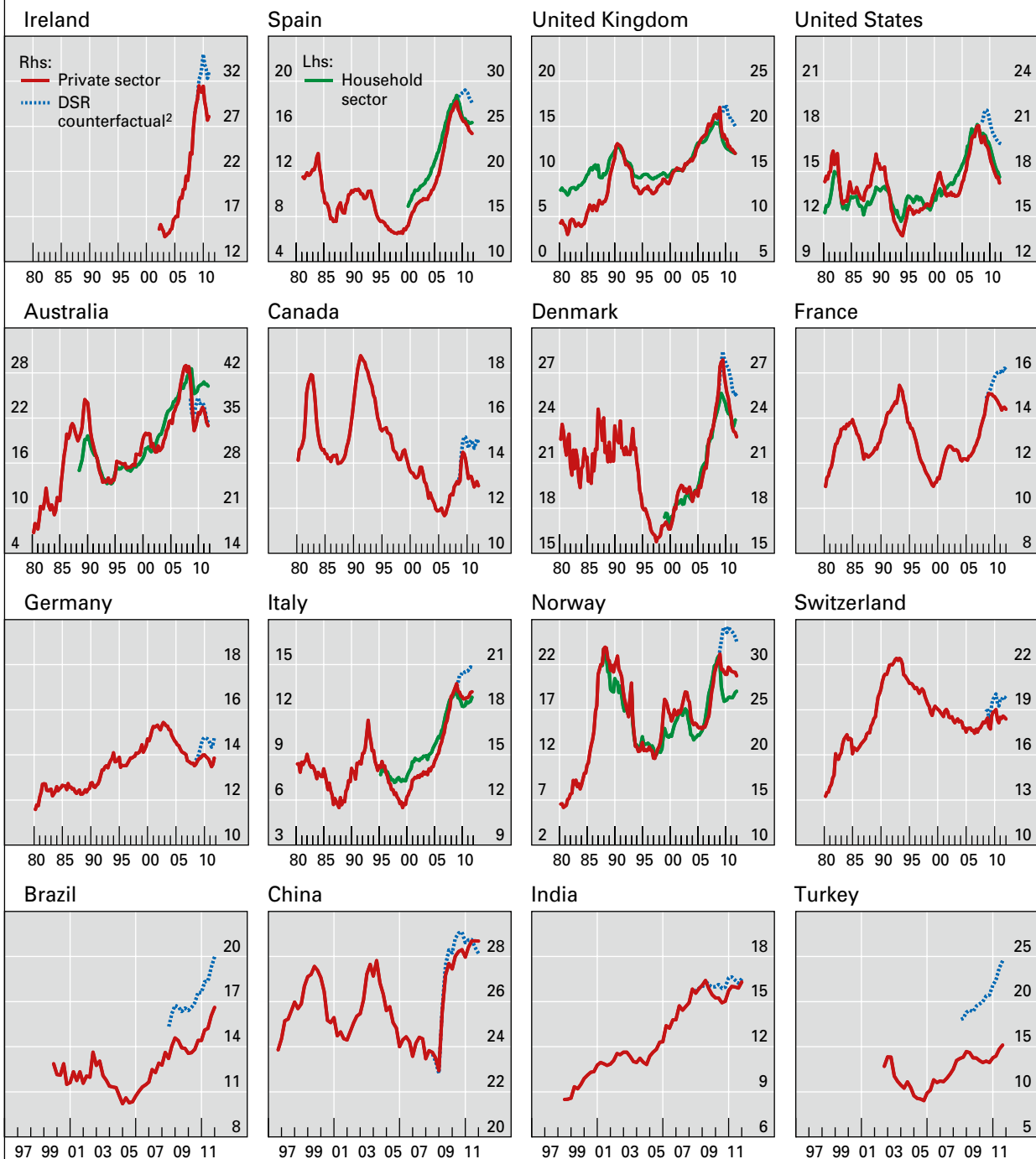
⁸ See S Cecchetti and E Kharroubi, "Reassessing the impact of finance on growth", BIS, January 2012, mimeo.

⁹ We compute credit gaps as the difference between the outstanding stock of debt to GDP and its long-term trend as calculated with a Hodrick-Prescott filter with a high smoothing parameter. For details, see C Borio and M Drehmann, "Assessing the risk of banking crises – revisited", *BIS Quarterly Review*, March 2009, pp 29–46.

¹⁰ Our measures for debt service ratios represent estimates using relatively imprecise information on loan maturity and average interest rates paid on loans. For countries which do not publish these data, we multiply the current debt ratio by the weighted average of short-term interest rates. This shortcut is quite effective in explaining the debt service costs of countries for which better data are available.

Private sector and household debt service ratios in selected economies¹

In per cent

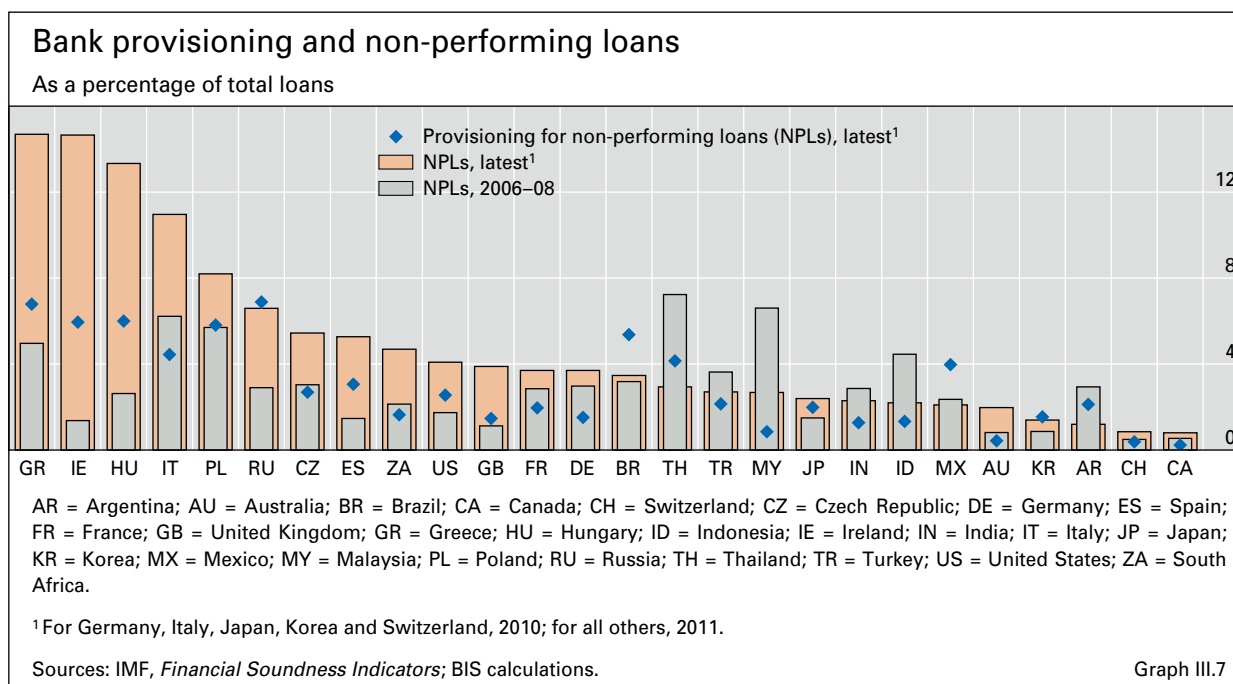


¹ The debt service ratio (DSR) is the sum of interest payments and debt repayments, divided by income. An increase in the ratio implies a lowered capacity of debtors to withstand a negative income shock. ² Actual debt level and 75% quantile of the interest rate distribution since Q1 2000.

Sources: National data; BIS calculations.

Graph III.6

accumulate on private sector balance sheets when interest rates are low. When rates eventually rise, higher debt service costs can trigger a painful deleveraging. Again, it is not only emerging market economies that exhibit high debt service ratios. Our measures for France, Italy and Norway stand at,



or close to, their highest levels in 30 years. Much of the debt in the countries shown in Graph III.6 has relatively short maturities (the main exceptions being mortgage debt in the United States and, to a lesser extent, France and Germany). Thus, debt service costs could rise substantially if interest rates were to return to the levels seen in recent interest cycles, as indicated by the dotted lines in Graph III.6.

Rapid credit growth in the emerging markets and advanced economies that are experiencing a credit boom has not so far resulted in a significant increase in bad loans. The ratio of non-performing loans to total loans in these countries generally remains around or below the pre-crisis average (Graph III.7). This is obviously not true for the countries that are facing high spreads, such as Greece, Ireland, Italy and Spain. Nor does it hold for some countries in emerging Europe, such as the Czech Republic, Hungary, Poland and Russia. That said, experience has shown that non-performing loans are, at best, contemporaneous signs of financial distress; they do not serve as leading indicators.¹¹

Policy challenges

This chapter has discussed three structural issues that seem to be preventing the global economy from embarking on a path of sustainable growth. The first is the legacy of sectoral imbalances built up during the pre-crisis housing and credit booms. The second is an unhealthy dependence on exports to countries that are likely to grow more slowly over the coming years. And the third is unsustainable levels of debt, be it in the form of debt overhangs in countries that experienced a property boom and bust, or of credit and property

¹¹ See C Borio and M Drehmann, "Towards an operational framework for financial stability: 'fuzzy' measurement and its consequences", *BIS Working Papers*, no 284, June 2009.

expansions in economies that escaped the previous crisis. In this section, we will discuss the challenges posed by these three factors.

First, housing and credit booms lead to a misallocation of resources that can take a long time to resolve. Overgrown construction and other property-related sectors need to shrink, which tends to lift unemployment. Propping up contracting sectors may provide short-run relief but can hamper long-term growth by slowing the efficient reallocation of resources or adding to public debt. Identifying which sectors will be the drivers of future growth is hard, if not impossible, although large current account deficits before the crisis¹² suggest that, in some countries, a rebalancing towards sectors producing tradable goods or services is desirable. The lifting of restrictions on product and service markets should help to promote this rebalancing.¹³ Social safety nets are important in smoothing the transition, but in many countries they face serious strains because of rickety public finances (see Chapter V).

Second, the replacement of export-led growth with a more balanced model requires major structural adjustments that cannot be implemented overnight. The most promising starting point is to remove any distorted incentives in the economy that favour exports over production for the domestic market. The most obvious such distortions are artificially undervalued exchange rates and (direct or indirect) export subsidies.¹⁴ Less obvious, but probably no less important, are excessive (or simply inefficient) regulations that constrain domestic activity. However, fuelling credit and asset prices is the wrong way to stimulate domestic absorption, creating different but equally damaging distortions.

The final challenge is to deal with unsustainable debt. High levels of problem loans in the countries at the epicentre of the crisis show clearly that a significant part of the debt burden is unsustainable. This hinders growth through at least two mechanisms. First, households in the countries that suffered a housing bust have stepped up their saving rates, which will depress growth until a new equilibrium is reached. Second, the impaired balance sheets of financial institutions limit their ability to provide new credit to profitable projects (see Chapter IV). The challenge is to provide incentives for banks and other credit suppliers to recognise losses fully and write down debt (see box). Cleaning up bank balance sheets is also important to ensure a smooth flow of credit to the economy, especially when a sizeable reallocation of resources is required across sectors.¹⁵ Supporting this process may well call for the use of public sector balance sheets.

Unsustainable debt could also become problematic in some countries that are experiencing historically rapid credit growth. Forestalling this will require

¹² See BIS, *81st Annual Report*, June 2011, Chapter III.

¹³ See OECD, *Economic Policy Reforms: Going for Growth 2012*, 2012, for a list of obstacles to the sectoral reallocation of resources.

¹⁴ Needless to say, administrative measures are not the only way to distort exchange rates. Well intended countercyclical monetary policy may result in equally artificial exchange rates.

¹⁵ See T Hoshi and A Kashyap, "Will the US bank recapitalization succeed? Eight lessons from Japan", *Journal of Financial Economics*, no 97, 2010, pp 398–417, and C Borio, B Vale and G von Peter, "Resolving the financial crisis: are we heeding the lessons from the Nordics?", *BIS Working Papers*, no 311, June 2010.

Reducing household debt to a sustainable level

We argue in the main text that the recovery cannot become self-sustaining until the debt of households is brought down to a level that can actually be repaid. Merely waiting for the problem to resolve itself as the economy recovers would be very costly. In this box, we sketch some ways in which authorities could encourage the restructuring of mortgage borrowing, which accounts for the bulk of unsustainable debt.

The first step authorities can take is to induce lenders to recognise losses and revalue loans at market prices. This will reduce the incentive to evergreen lending by rolling over amounts due, and it will also cut the additional cost to lenders of debt relief or foreclosure.

The second step is to create incentives for lenders to restructure loans so that borrowers have a realistic chance of repaying their debt. Experience shows that lenders tend to be reluctant to restructure loans even if provisions cover all or most of the costs of the associated charge-offs. Instead, they often prefer to wait until they are forced by the borrower's delinquency to foreclose on the collateral property. In the United States, 1.9 million houses were in foreclosure in early 2012, only slightly fewer than the peak of over 2 million in late 2009. Foreclosure may be optimal from an individual lender's point of view, but it entails important social costs. Foreclosed houses tend to sell at a steep discount to the prices obtained through voluntary sales, in part because of vandalism and other types of degradation pending foreclosure.^① Large-scale foreclosures may also drive down house prices in the surrounding area, thus undermining the viability of loans that would otherwise have been sound.

There are several reasons for lenders' reluctance to restructure loans and provide debt relief. First, some loans may recover even after serious delinquency, and this upside is eliminated once the loan is restructured. This could be an especially significant disincentive to restructuring in legal systems where the lender has recourse to the borrower's future income as well as to the mortgaged property. Second, it is not easy to establish what level of debt is actually sustainable, particularly when the trends of both property prices and household incomes are uncertain. As a consequence, many restructured loans subsequently go into default.^② Third, debt relief may encourage further delinquency in the loan portfolio if lenders are seen as being soft on problem borrowers. Fourth, the lender's managers are obliged to protect the value of the bank's asset base. Disregarding that fiduciary duty may expose them to litigation.

Authorities can change the incentives for lenders to restructure loans in several ways. One frequently used option is to set up an asset management company^③ to buy up loans at attractive prices, ie slightly above current market valuations. Alternatively, authorities can subsidise lenders or guarantee the restructured debt when lenders renegotiate loans. In some cases, changes in the legal framework may be needed to eliminate technical obstacles to debt restructuring.^④

Inducing lenders to recognise losses and incentivising them to restructure loans will impose fiscal costs (at least in the short term) and could create moral hazard. For instance, if households that borrowed heavily are offered better terms than those that were more prudent, this could encourage reckless borrowing in the future. That concern could be addressed by stricter regulation of mortgage lending practices. The fiscal costs of helping households to cut their debt burden can be substantial, but they may represent a productive use of public funds and one that could support self-sustaining growth over time. Loan restructuring and the provision of debt relief in a way that keeps foreclosures to a minimum also shore up the banking system, thus helping to break the link from weak banks to the creditworthiness of the sovereign (see Chapter V). In the long term, the establishment of an asset management company could even benefit the public purse directly, as has happened in many previous episodes.

^① See J Campbell, S Giglio and P Pathak, "Forced sales and house prices", *American Economic Review*, no 101(5), 2011, pp 2108–31. ^② See M Adelino, K Gerardi and P Willen, "Why don't lenders renegotiate more home mortgages? Redefaults, self-cures and securitization", *NBER Working Papers*, no 15159, July 2009. By contrast, the securitised status of many US loans does not appear to be a major obstacle to renegotiation. ^③ See L Laeven and F Valencia, "Systemic banking crises: a new database", *IMF Working Papers*, no WP/08/224, 2008, for examples of asset management companies. ^④ See IMF, *World Economic Outlook*, April 2012, Chapter 3: "Dealing with household debt", for a discussion of some loan restructuring programmes.

two things. First, the rate of credit growth should be held to a level that does not overwhelm the banking system's capacity to undertake proper screening of

creditworthiness. Second, banks and other financial institutions need to be put on a sound enough footing to withstand temporary upsurges in bad assets. At a time when interest rates are low in major advanced economies and emerging markets are experiencing large capital inflows, monetary policy faces a dilemma. Low interest rates will clearly not slow a credit boom, but high interest rates may attract even more capital flows and thus fuel a domestic credit boom. One way out is to accompany higher interest rates with macroprudential measures such as higher capital ratios or tighter loan-to-value ratios. And, even if these tools fail to slow credit growth significantly, they should at least reinforce the financial system against the consequences of a credit bust.

This chapter has discussed structural problems and structural solutions. We have not touched upon the crisis of confidence that besets many economies, particularly in the euro area. Fixing structural problems during a confidence crisis is both more difficult and more important than it is in better times. It is more difficult because unemployment is already high and public funding that could mitigate short-term adjustment costs is scarcer. It is more important because confidence is unlikely to return until authorities have got to grips with structural weaknesses.