BOXES

The latest stage of the global financial and economic crisis has been particularly severe and long-lasting in the euro area, taking the form of a sovereign debt crisis (see Chapter 1 of this Report), with significant repercussions in the rest of the world. Indeed, since summer 2011 the renewed concerns over the sovereign debt of Greece and other euro area countries have seen a heightening of tensions, which have again become a determining factor in the world outlook.

The euro area represents around 20% of world GDP and a somewhat smaller percentage of world trade (about 15%, excluding intra-euro area trade). Therefore, euro area spending and relative prices can influence goods and services exports and imports to and from the rest of the world. From a financial standpoint, the importance of the euro area is even greater, because it acts as intermediary in a significant proportion of global capital flows, and European financial institutions' interconnections with the rest of the world are deep-rooted and complex. On Bank for International Settlements (BIS) data,[1] euro area banks account for between 25% and 40% of world finance, depending on the institutional sector considered.

The real transmission channels of the sovereign debt crisis to the rest of the world takes place mainly through international trade in goods and services. The greater saving of households (precautionary or to reduce leverage), the postponement of investment projects (as a result of heightened uncertainty) and ongoing fiscal consolidation reduce the aggregate demand of the euro area and thus exports from the rest of the world. This channel should be especially important in those regions with greater trading exposure to the euro area. Panel 1 shows that the United Kingdom and the eastern European countries (which, moreover, are very open economies) would be particularly vulnerable, since the euro area is the destination of more than 50% of their goods exports. In the cases of Asia (including China), Latin America and the United States, the euro area accounts for 5-10% of the trade in goods. As regards trade in services, although the euro area is a major market for the United Kingdom and for certain Latin American and African countries, the potential impact is mitigated by the fact that services exports represent a still-small percentage of GDP in comparison with goods exports. According to the IMF[2], the global impact through the trade channel is not particularly significant. Specifically, in the most exposed countries it would reduce GDP at the most by 0.2 pp per percentage point of contraction in euro area aggregate demand. The latest economic data suggest that the impact through the trade channel may have started to manifest itself in some countries. Panel 2 shows that in the second half of 2011 a more marked loss of dynamism in exports to the euro area than in exports to the rest of the world became discernable. More specifically, in the same period the euro area export growth differential vis-à-vis the rest of the world turned negative in the cases of the United States, Japan and eastern Europe, while for China and emerging Asia the already negative differential widened. In the case of Latin America, the positive differential recorded during the first six months of 2011 shrank considerably.

The trade channel may be strengthened by the gains in euro area price competitiveness if, as a result of the crisis, the euro depreciates against other currencies. According to Dieppe et al.,[3] for each percentage point that the euro depreciates, there is a 0.3 pp increase in euro area exports (i.e. imports by the rest of the world) and a 0.1 pp fall in euro area imports (i.e. exports by the rest of the world). Since late summer, the euro has depreciated to a certain extent – 8% against the dollar and 5% on a multilateral basis. The downturn in economic activity and exchange rate developments tend to be reflected in migrant workers' remittances which, while modest in the case of the euro area (totalling some €25 million per year), are an important source of income in poorer countries.

The financial transmission channels are much more complex and their scope more difficult to quantify on account of the multiple interlinkages in place. As is known, the euro area sovereign debt crisis triggered the adjustment in equity markets during the summer. Indeed, the financial stress indicators, which are a measure of US and UK market volatility, increased significantly whenever the risk premium of the euro area periphery countries rose (see Panels 3 and 4) to levels not seen since end-2009, with the onset of Greece's difficulties. Equity markets and the banking sector were the main focus of the heightened uncertainty.

The worsening situation in the euro area may also be adversely affecting the market valuation of those companies in the rest of the world, whether they are in the financial sector or not, with strong trade or financial ties with the euro area. This exposure is most apparent in the financial sectors of countries such as the United States and the United Kingdom, whose businesses are highly exposed to the public and private sectors in the euro area. Indeed, US banks' exposure to European debt increased in 2011, owing partly to the size of their positions in credit derivatives. These derivatives, mainly credit default swaps, became more commonplace on account of the impairment of some European countries' debt. In contrast, the United Kingdom, with a lower exposure to European debt through derivatives, saw its exposure fall slightly. Other financial agents have been more active in their response to these shocks by reducing their exposure to euro area risk. One of the most prominent cases is that of US money market funds. A large portion of the assets belonging to these funds is in the form of fixed-income securities issued by credit institutions. The funds' exposure to euro area institutions had increased until mid-2010, when it accounted for almost 40% of investment holdings in financial institutions. During 2011, however, this exposure fell due to the sovereign debt crisis, to stand at 14% by year-end. Lastly, in the case of the non-financial sector, empirical evidence

1   See *World Economic Outlook* (2012), IMF, April.

2   "Euro Area Policies: Spillover Report for the 2011 Article IV Consultation and Selected Issues", IMF Country Report No. 11/185.
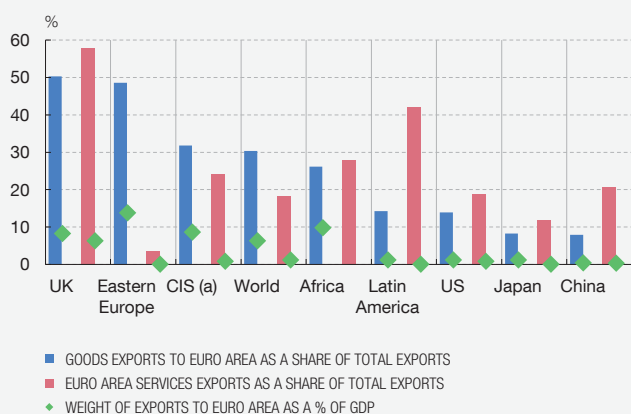
3   See A. Dieppe, A. González Pandella, S. Hall and A. Willman (2011), "The ECB's new multi-country model for the euro area. NMCM – with boundedly rational learning expectations", Working Paper Series, No. 1316, European Central Bank.

suggests that businesses with high exposure to the euro area, being recipients of euro area production or funding from its financial institutions, may have seen their market values adversely affected. Were this to persist, it could impact shareholder wealth and investment decisions.
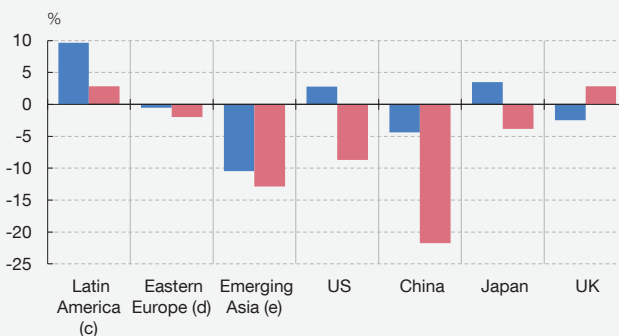
A final, potentially significant, financial channel seems to be working in the opposite direction, namely through the withdrawal of euro area financial institutions' activity from other geographical regions, particularly eastern Europe. Here, there are three types of factor to be taken into account. First, given the difficulty in obtaining permanent external funding, major European banks may decide to strengthen their core capital through disinvestment in other regions. Thus far, there is no evidence to suggest

that this has occurred on a large scale. Second, there are signs that financial institutions are embarking upon a process of specialisation on account of the new global financial scene, which could lead them to abandon certain lines of business and, consequently, investment in specific regions. However, this is not exclusive to European institutions, nor does it stem from the sovereign debt crisis. Lastly, European institutions are faced with higher costs for funding obtained on international markets, which is used to finance part of their activities in other regions. As a result, they are scaling down their activity in certain segments, such as international trade credit. On the back of this development, Asian and US competitors are taking the place of European institutions and gaining market share.

1 EURO AREA IMPORTS AND EXPORTS IN 2010

■ GOODS EXPORTS TO EURO AREA AS A SHARE OF TOTAL EXPORTS
■ EURO AREA SERVICES EXPORTS AS A SHARE OF TOTAL EXPORTS
♦ WEIGHT OF EXPORTS TO EURO AREA AS A % OF GDP

2 EURO AREA EXPORT GROWTH DIFFERENTIAL (b)

■ 2011 H1
■ 2011 H2

3 UNITED STATES. FINANCIAL STRESS INDICATOR (f)

4 UNITED KINGDOM. FINANCIAL STRESS INDICATOR (f)

■ EXCHANGE RATE   ■ SECURITIES MARKET   ■ BANKING SECTOR   — INDICATOR
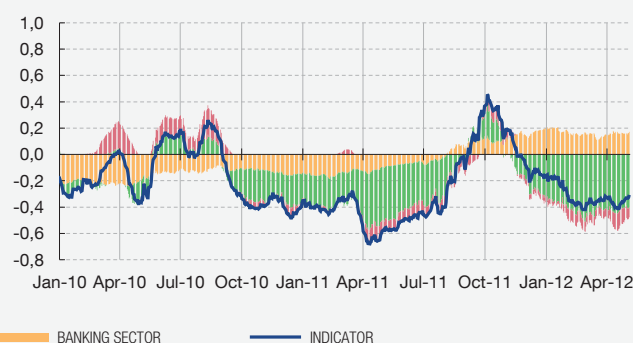
SOURCES: Banco de España, Datastream, Eurostat and IMF.

a CIS: Commonwealth of Independent States.
b A positive value indicates that exports to the euro area increased more than those to the rest of the world.
c Argentina, Brazil, Chile, Colombia, Mexico and Peru.
d Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania.
e Korea, India, Indonesia and Thailand.
f An increase in the index denotes greater stress in the financial markets. Daily data. The indicator is made up of a simple average of three sub-indices relating to: the banking sector (1-year and 10-year government bond spreads, Treasury bill yield and 3-month repo spread, and banking stock price index); securities market (corporate bond spread, overall stock market index and implied volatility of the overall stock market index); and exchange rate (implied volatility of the real effective exchange rate).

UNCONVENTIONAL MONETARY POLICY. THE EFFECTIVENESS OF THE ASSET PURCHASE PROGRAMMES IN THE UNITED STATES AND THE UNITED KINGDOM

BOX 3.2

The exhaustion of the leeway available to traditional monetary policy instruments to act, once official interest rates reached levels close to zero, has led the central banks of the main developed economies to activate a wide range of unconventional measures, against a background of persistent economic and financial fragility. These include most notably the extraordinary liquidity and long-term refinancing operations, the large-scale asset purchase programmes and the changes in balance sheet composition (as part of quantitative easing or credit easing strategies[1]). The objectives pursued may be the re-opening of certain markets, the maintenance of financial stability, the reduction of funding costs and the expansion of nominal spending. The use by central banks of these instruments has been widespread, although the US and UK central banks have applied them with greater intensity, particularly asset purchases.

The Federal Reserve announced a credit easing strategy in November 2008, undertaking to purchase $600 billion in debt and mortgage-backed securities (MBS) held by federal agencies with a view to smoothing the functioning of these market segments. In March 2009 it raised the volume of this operation by $850 billion and it initiated, moreover, a quantitative easing strategy with the purchase of $300 billion in Treasury bonds. In a second stage, in November 2010, the quantitative easing strategy was expanded following the decision to purchase an additional $600 billion worth of Treasury bonds. Overall, asset purchases amounted to $2.35 trillion, equivalent to 15.3% of GDP. Subsequently, in September 2011, the Federal Reserve initiated a public debt portfolio reallocation strategy, known as *Operation Twist*, which involved replacing short-term securities with other, longer-dated instruments so as to lengthen the average maturity of the portfolio without increasing the size of its balance sheet. Previously, in August, it had decided to keep its MBS portfolio stable through the reinvestment of the instruments maturing in securities of the same type.

The Bank of England initiated a quantitative easing strategy through an asset purchase facility (APF) in March 2009. From that month up to February 2010, purchases centred on public debt, for an amount of £200 billion. In October 2011, a second phase was launched, which finalised on May 2012 and which has raised the total amount of purchases to £325 billion (23% of GDP).

There are numerous transmission channels for a central bank's asset purchase programme to financial and macroeconomic variables (see accompanying diagram). First, they have a direct effect on the price of the assets purchased, by exerting downward pressure on their yields. Lower yields, along with the increase in liquidity arising from the purchases, will lead investors to portfolio shifts towards other assets, such as shares or corporate bonds, whose price will also increase. Moreover, the announcement of the purchases plays a signalling role in respect of the monetary authority's objectives, which will affect interest-rate expectations over different horizons, as well

as the exchange rate.[2] Furthermore, especially in the case of credit easing strategies, these operations can help prop up specific markets subjected to stress, providing them with liquidity. The increase in asset prices has a bearing, in turn, on the recovery in wealth, which, combined with the reduction in financing costs, will boost consumer spending and investment and, ultimately, GDP and employment. This will all be conducive to brighter economic prospects and enhanced business and consumer confidence, provided that the exit mechanisms from these easing strategies are credible and that inflation expectations remain anchored. Ultimately, the injection of liquidity into the economy will also induce an increase in the supply of credit, given the improvement in the economic climate.

Any assessment of the economic impact of the asset purchase programmes is a complex task, since it is difficult to isolate their effect from that of other factors. Further, to compare their effectiveness from one country to another, the relative size of the programmes must be taken into account. In the case of the United States, the Federal Reserve increased its share in the Treasury bond market by 8.9 pp to 16.6% of the stock at end-2011; likewise, it came to account for 19.1% of the outstanding balance of federal agency-backed debt and MBS. In the United Kingdom, after the end of the first round of quantitative easing, the stock of government bonds held by the central bank accounted for 22% of the total in circulation, and this percentage rose to 32% in May. Several studies offer estimates of the impact of these programmes on financial and macroeconomic variables (see accompanying table). For the case of credit easing and the first phase of quantitative easing in the United States, some results point to a downward impact on 10-year Treasury bond yields of between 30 bp and 80 bp, while in the case of federal agency bonds and MBS, the fall is estimated to be around 130 bp and 110 bp, respectively, although the impact would have been minimal in the MBS market segments not backed by federal agencies. According to other research, the purchases would also have affected the term structure of interest rates, lowering 10-year rates and increasing short-term ones.[3] Finally, it is estimated that the dollar depreciated by between 3.6% and 10.8%, depending on the counterpart currency, in the period between the two days before and the two days after the announcement of the purchases. In the case of the United Kingdom, empirical evidence suggests that the first phase of the APF significantly and immediately reduced the interest rates on public debt by around 100 bp, likewise lowering the rates on corporate bonds in general, reflecting a balance sheet restructuring effect. Further, the level of real GDP is estimated to have increased by between 1.5 pp and 2 pp, and inflation by between 0.75 pp and 1.5 pp. These figures would be equivalent to a reduction in the official interest rate of between 150 bp and 300 bp.

In sum, the evidence available indicates that the asset purchase programmes have been conducive to reducing financing costs

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1 Quantitative easing involves increasing the size of the central bank's balance sheet through the purchase of securities financed by an expansion of bank reserves. Since the aim is to inject money into the economy to boost nominal spending, the key point of this strategy is how the balance sheet expansion is financed. Conversely, the focus of credit easing is on the composition of the central bank's balance sheet assets.

2 Insofar as investors decide to invest in foreign-currency-denominated assets, part of the effect on the exchange rate will come about through portfolio reallocation.

3 See J. Hamilton and J.C. Wu (2011), *The Effectiveness of Alternative Monetary Policy Tools in a Zero Lower Bound Environment,* Working Paper no.16,956, April, National Bureau of Economic Research.

UNCONVENTIONAL MONETARY POLICY. THE EFFECTIVENESS OF THE ASSET PURCHASE PROGRAMMES IN THE UNITED STATES AND THE UNITED KINGDOM (cont 'd)

BOX 3.2

TRANSMISSION CHANNELS OF THE ASSET PURCHASE PROGRAMMES
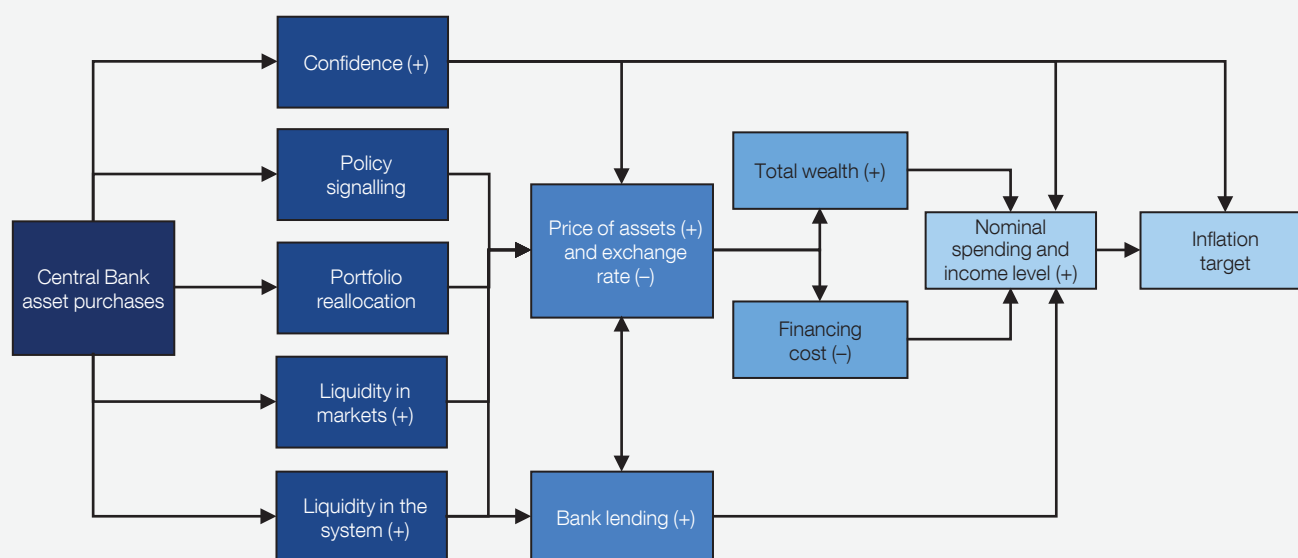
IMPACT OF THE ASSET PURCHASE PROGRAMMES (a)

Financial variables	United States	United Kingdom
Long-term Treasury bond yield	Decrease of between 30 bp and 100 bp (b). Sack (2009), Gagnon et al. (2011), and Neely (2011)	Decrease of 100 bp. Joyce et al. (2011a)
Yield on federal agency-backed bonds and MBS	Decrease of between 150 bp and 110 bp, respectively. Gagnon et al. (2011)	—
Corporate bond yields (investment grade)	Decrease of 70 bp. Gagnon et al. (2011)	Decrease of 70 bp. Joyce et al. (2011a)
Corporate bond yields (high yield)	—	Decrease of 150 bp. Joyce et al. (2011a)
Exchange rate	3.6% - 10.8% depreciation depending on the counterparty currency. Neely (2011)	Effective depreciation of 4%. Joyce et al. (2011a)
Macroeconomic variables		
GDP	Persistent 0.4% increase. Chen et al. (2011)	Increase from 1.5 pp to 2 pp Joyce et al. (2011b), Kapetanyos et al. (2012) and Bridges and Thomas (2012)
CPI	Very small. Chen et al. (2011)	Increase from 0.75 pp to 1.5 pp. Joyce et al. (2011b), Kapetanyos et al. (2012) and Bridges and Thomas (2012)

SOURCES: Banco de España; Bank of England; J. Bridges and R. Thomas (2012), *The impact of QE on the UK economy — some supportive monetarist arithmetic,* Bank of England Working Paper no. 442; H. Chen, V. Cúrdia and A. Ferrero (2011), "The macroeconomic effects of Large-Scale Asset Purchase Programs", *Staff Report,* no. 527, December, Federal Reserve Bank of New York; J. Gagnon, M. Raskin, J. Remache, y B. Sack (2011), "Large-Scale Asset Purchases by the Federal Reserve: Did they work?", *Economic Policy Review,* May, Federal Reserve Bank of New York; M. Joyce, A. Lasaosa, I. Stevens and M. Tong (2011a), "The financial market impact of quantitative easing in the United Kingdom", *International Journal of Central Banking,* vol. 7, no. 3, pp. 113-161; M. Joyce, A. Lasaosa, I. Stevens and M. Tong (2011b), "The United Kingdom's Quantitative Easing Policy: Design, Operation and Impact", *Quarterly Bulletin,* vol. 51, no. 3, March, Bank of England; G. Kapetanios, H. Mumtaz, I. Stevens and K. Theodoridis (2012), *Assessing the economy-wide effects of quantitative easing,* Bank of England Working Paper no. 443; C. Neely, (2011), *The Large-Scale Asset Purchases had large international effects,* Working Paper no. 2010-018C, January, Federal Reserve Bank of St. Louis, and B. Sack, (2009), "The Fed's expanded balance sheet", address at the Money Marketeers New York University, December.

a In the case of the financial variables, the impact refers to the effect on such variables around the date of the purchase announcements, unless otherwise stated. In the case of the United Kingdom, it refers to the impact of the first round of quantitative easing.
b Corresponds to the estimated impact up to March 2010.

UNCONVENTIONAL MONETARY POLICY. THE EFFECTIVENESS OF THE ASSET PURCHASE PROGRAMMES IN
THE UNITED STATES AND THE UNITED KINGDOM (cont'd)

BOX 3.2

and have contributed to upholding nominal expenditure, although there are also signs that their effectiveness may be diminishing over time. Furthermore, the asset purchase programmes pose some risks that must be borne in mind. First, the flattening of the yield curve may place a brake on the necessary process of deleveraging (public and private alike), narrow bank business margins and delay the clean-up of bank balance sheets. Second, the expectation that central banks will intervene persistently in the system may exacerbate moral hazard and encourage excessive risk-taking; further, a dominant role of central banks might ultimately replace, in part, the financial intermediation function of the private sector. Costs may also emerge in terms of diminished monetary policy credibility, especially in a setting of fragile public finances. Last, the very exit strategy poses challenges, especially if the withdrawal of the extraordinary stimuli has to be done quickly. Accordingly, the central bank's communication policy must be transparent, clearly signalling the objectives and the implementation of the exit strategy.[4]

In any event, even with these caveats, there is extensive consensus concerning the decisive contribution of this set of extraordinary monetary measures to preserving financial stability; by making it easier for the banking system to obtain financing, the measures alleviate banks' liquidity problems and allow the necessary deleveraging of the banking system to unfold in a scenario of diminished tensions.

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4   See Hervé Hannoun (2012), "Monetary policy in the crisis: testing the limits of monetary policy", address before the 47th SEACEN Governors' Conference, Seoul, 13-14 February; and Masaaki Shirakawa (2012), presentation at the conference "Central Banking: Before, During, and After the Crisis", organised by the Federal Reserve Board and the *International Journal of Central Banking*.

In recent years Greece has been the main source of instability in the euro area, acting as the catalyst of a crisis of confidence in the European project. The Greek economy is probably the most patent example of the costs which, sooner or later, arise owing to an inadequate adjustment to the demands that membership of an economic and monetary union imposes. Its experience also illustrates the weakness of European supervisory arrangements and the difficulties involved in designing an efficient mechanism for crisis management, and for providing financial support to ailing Member States.
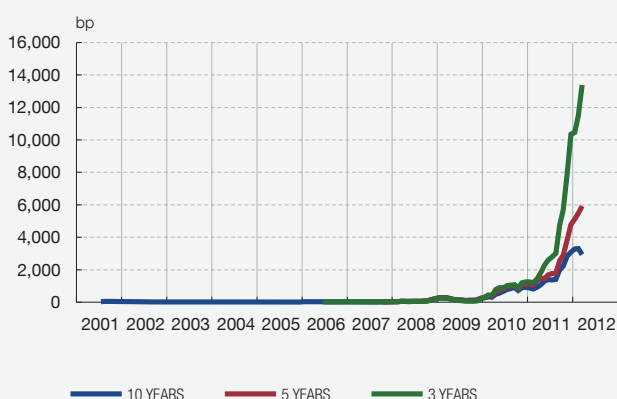
1 CURRENT ACCOUNT BALANCE AND EXCHANGE RATE (a)
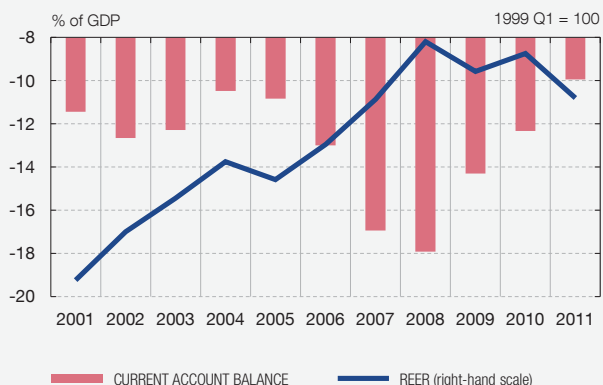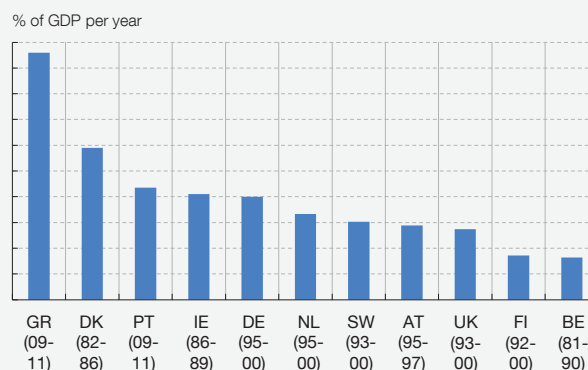

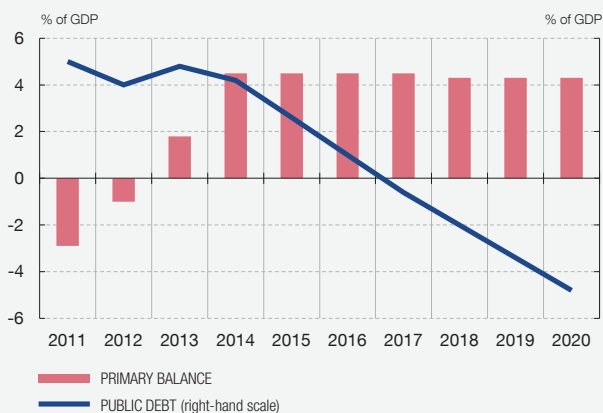2 GDP, BUDGET DEFICIT AND PUBLIC DEBT
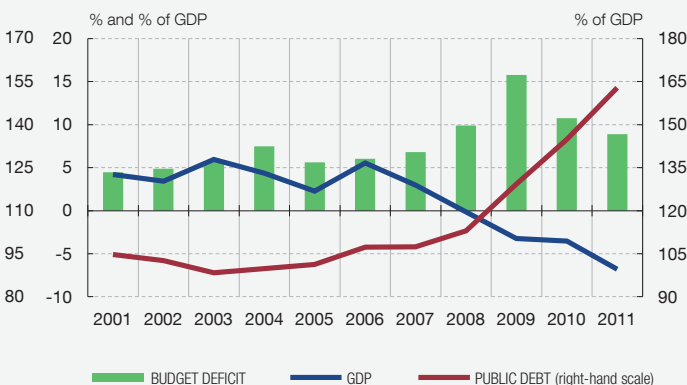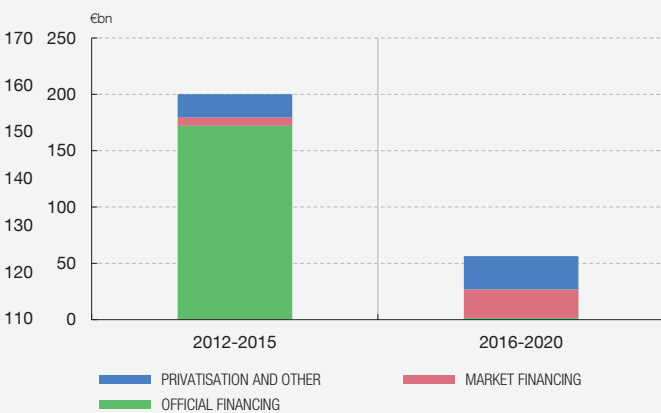

3 SOVEREIGN BOND SPREADS OVER GERMANY

4 COMPARISON OF THE FASTEST FISCAL CONSOLIDATIONS (b)

5 PROJECTED BUDGET DEFICIT AND PUBLIC DEBT
(assistance programme)

6 FINANCING NEEDS AND SOURCES (Troika estimates)

SOURCES: Banco de España, ECB and AMECO.

a Real effective exchange rate with unit labour costs.
b Reduction in the structural deficit in annual average terms during the consolidation period.

Like other countries, after joining EMU in 2001 Greece saw its domestic demand expand notably. This was readily financed by the inflow of foreign capital at low interest rates, lured by favourable growth expectations. But the pressure of demand far exceeded the responsiveness of an economy which did very little to correct its structural rigidities, thereby prompting a continuous erosion in competitiveness, low productivity growth and wage growth above the euro area average. In 2008, the real exchange rate appreciated relative to its equilibrium value by between 20% and 30% on IMF estimates; the current account deficit exceeded 10% of GDP, and foreign indebtedness climbed to comparatively very high levels (see Panel 1).

Strong imbalances also built up in the general government sector (see Panel 2). The continuous growth of spending, the generosity of pension and healthcare systems, the inefficiencies of tax collection and tax evasion meant that the budget deficit and public debt persistently exceeded the reference values set in the Stability and Growth Pact. Problems concerning the reliability of the fiscal statistics further complicated the situation. In 2004 the European Commission had initiated an excessive deficit procedure against Greece and had drawn attention to the scant quality of its fiscal statistics. But it was decided to close this procedure in 2007, it being considered that Greece had adopted the necessary measures to attain a deficit of below 3% of GDP in 2006 and 2007. Nor did the global financial markets, where a climate of widespread under-pricing of risk prevailed, react to this accumulation of vulnerabilities. Indeed, in the months leading up to the crisis, the Greek sovereign debt spread over the German Bund stood at 10-40 basis points (see Panel 3), far below that observed in the years prior to membership.

The situation took a radical turn in late 2009, when the recently elected government revised the deficit estimates for that year upwards from 6.7% of GDP to 12.7% (with the figure later exceeding 15%). In the context of international financial crisis in which this came about, the revision was the trigger for a sudden re-evaluation of risk in the Greek economy, which hampered its access to the capital markets, and mired it in a liquidity crisis that precipitated the request for financial assistance. Given the lack of instruments in the framework of euro area governance enabling aid to be channelled to this country, the euro area countries decided, following a process not free from difficulties, to extend bilateral loans totalling €80 billion, to which €30 billion granted by the IMF were added, making up a total amount of almost 50% of Greek GDP. This initial loan was conditional upon compliance with an ambitious fiscal adjustment and structural reform programme, and stipulated interest rates and non-concessional terms which, ultimately, proved excessively burdensome and had to be revised.

The adjustment programme began satisfactorily. From 2009 to 2011, Greece saw through one of the swiftest and sharpest of fiscal consolidations in recent economic history as it cut its structural fiscal deficit by almost 10 pp of GDP (see Panel 4). But, on the reforms front, implementation fell short owing to the lack of administrative capacity and political will, which contributes to explaining why inflation and the current deficit remained at high levels, despite the prolonged recession. The programme, conceived as a stop-gap so that Greece could carry out the necessary change and restructuring and restore growth, underestimated the economy's dysfunctionalities. Nor did it anticipate the heightening of tensions and the limited scope of the economic recovery at the euro area level. The Greek economy, in short, became immersed in an increasingly deeper recessionary spiral, which made it difficult to meet its fiscal targets and restore market confidence. The crisis took on a social and political dimension which ultimately triggered the fall of the government and the formation of a coalition government.

Doubts grew in the opening months of 2011 over the possibility of Greece being able to return to the markets to raise funding within the envisaged timeframe, and the need to increase the financial assistance was considered. Discussions on this second programme took place against the backdrop of significant political tensions. These ultimately fed through to the markets, given certain countries' insistence on the need to share the costs of the aid with the private sector (PSI). At first, at the summit meeting on 21 July, there was agreement on a "soft" restructuring mechanism based on voluntary private sector participation so as not to compound the difficulties of the Greek banking system and of other European banks. But it soon became apparent that, in order to restore the sustainability of Greek debt, restructuring on a greater scale was needed. In March 2012, a 53.5% haircut was applied to the nominal value of the bonds, tantamount to 78% in terms of current discounted prices, and which was extensive to 95% of Greek debt in private hands.

After the restructuring the second official aid programme was approved, for €130 billion, on top of the first programme, and the consolidation and reform strategy was revised. So as not to make the economic recession more acute, the new programme delays part of the fiscal adjustment outstanding to 2013-2014, and it has entailed a boost to labour market and services reform, which will now be assisted by a technical group of international experts. A sizeable portion of the funds (€50 billion) will be earmarked for the recapitalisation of financial institutions. As a result, Greece is expected to restore positive growth rates as from 2013, and its public debt should fall below 120% of GDP in 2020.

Even so, factors of risk remain. To be able to cut debt to below 120%, Greece will have to persist with what is practically unprecedented fiscal austerity[1], running primary surpluses of over 4% to 2020 and beyond (see Panel 5), and an extensive privatisation programme. The restructuring of Greek public debt has involved one of the biggest haircuts applied in recent years, and the empirical evidence available suggests that the bigger this haircut is, the longer it will take private investors' confidence to be re-

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[1] *Fiscal consolidations: lessons from past experiences,* OECD Economic Outlook, 2007.

stored.[2] This might be compounded by the fact that a large portion of the debt will be in the hands of official creditors, who may be received as preferential creditors in respect of any new Greek bond. Finally, the difficulties in forming a stable government following the elections on 6 May cast doubt over the degree of commitment to the programme that the government resulting from the election scheduled for June may have. All told, after a period of several years in which the economy has been shackled by uncertainty over fundamental issues affecting the country, including the possibility of a disorderly default or in relation to continuing euro area membership, the rigorous implementation of the new programme by the Greek government should contribute to dispelling uncertainty and offer an opportunity for Greece to make a radical change, enabling it to improve competitiveness, restore growth and ensure the sustainability of its public finances. If this opportunity is seized, investor confidence may be restored more swiftly.

2　J. Cruces and C. Trebesch (2011), *Sovereign default: the price of haircuts,* CESIFO working paper 3604.

The benefits arising from financial integration are well-known: to smooth the proper channelling of funds from economic agents and countries with saving surpluses towards those posting defi-

cits; and to allow risks to be shared and diversified more efficiently. From the outset, the Monetary Union has played a key role as a catalyst in this integration process in the euro area. Throughout
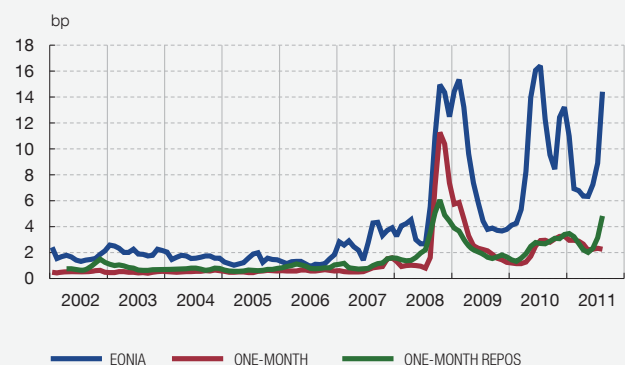
1 TARGET2 BALANCES OF NCBs IN THE EUROSYSTEM

€bn

Legend: FI, LU, NL, DE, ES, IT, IE, GR
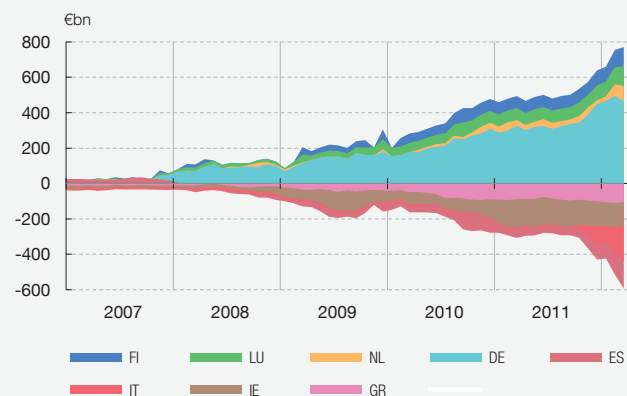
2 PERCENTAGE OF LOANS GRANTED BY CREDIT INSTITUTIONS TO NATIONAL SECTORS RELATIVE TO THE EURO AREA TOTAL

%   %

Legend: INTERBANK, OTHER (right-hand scale)

3 STANDARD DEVIATION BY COUNTRY OF INTERBANK INTEREST RATES (61-day moving average)

bp

Legend: EONIA, ONE-MONTH, ONE-MONTH REPOS

4 NET FLOWS OF FIXED-INCOME SECURITIES HELD BY CREDIT INSTITUTIONS
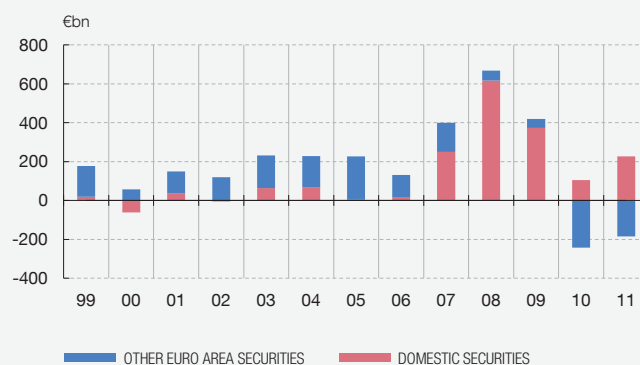
€bn

Legend: OTHER EURO AREA SECURITIES, DOMESTIC SECURITIES

5 INDICATOR OF HOME BIAS IN CREDIT INSTITUTIONS' FIXED-INCOME PORTFOLIOS (a)

Countries: ES, GR, IT, PT, NL, AT, FR, DE, BE, FI, IE, LU

Legend: 1999, 2007, 2011
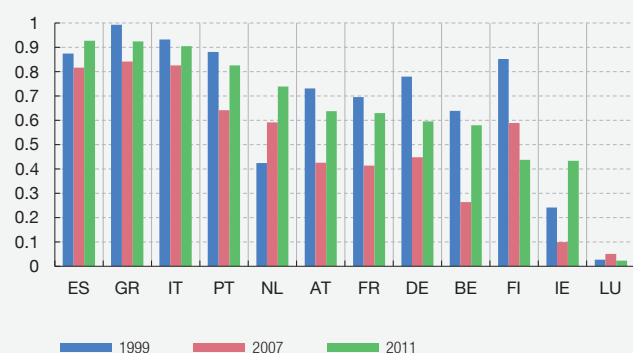
6 NET FLOWS OF SECURITIES IN INSTITUTIONAL INVESTORS' PORTFOLIOS

€bn

Investment funds   Insurance companies and pension funds

Legend: OTHER EURO AREA SECURITIES, DOMESTIC SECURITIES, TOTAL INVESTMENT PORTFOLIO
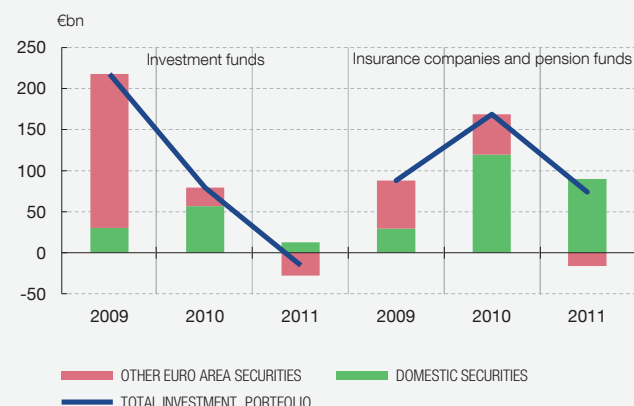
SOURCES: ECB and NCBs.

a The indicator of home bias in credit institutions' fixed-income portfolios has been calculated as 1 minus the ratio of the proportion of other euro area countries' securities in monetary financial institutions' fixed-income portfolios and the relative size of the other euro area countries' fixed-income issues to the euro area total. Values for the indicator close to 1 evidence a high presence of domestic securities in credit institutions' portfolios (high home bias), and values close to zero denote sizeable holdings of non-domestic securities (low home bias).

this period, headway in this field has given rise to an increase in cross-border financial flows within the area, and in the volumes of foreign assets and liabilities accumulated by euro area countries.

However, the crisis that began in 2007 has interrupted the trajectory of European financial integration in a setting in which, at the international level, ongoing globalisation has also been severely affected. The mid-2011 heightening of tensions on the sovereign debt markets has slowed cross-border financial activity among euro area countries and has given rise to the segmentation and, indeed, re-nationalisation of certain markets. One of the consequences of this interruption in private cross-border payment and revenue flows within the euro area has been the need for the Eurosystem to act as an intermediary, a role previously performed by the interbank market. The reflection of this has been a sizeable build-up in NCB debit and credit balances with the ECB in TARGET2 (see Panel 1). This return by investors to domestic financial markets has highlighted some of the weaknesses of the EU's financial and institutional architecture.

One usual measure of financial integration is the so-called "home bias", which translates into the presence, in investor portfolios, of a higher relative volume of domestic as opposed to foreign assets than would be suggested by international portfolio diversification models. French and Poterba (1991), in *Investor Diversification and International Equity Markets,* document this phenomenon. Nonetheless, during the 1990s and the opening years of the current millennium, there had been a reduction in home bias both in bank balance sheets and in the balance sheet of OECD countries' institutional sectors, most especially euro area countries.

The financial crisis has brought to a halt and, indeed, reversed this dynamic of the past two decades, and the first signs of an increase in the relative weight of domestic assets were already evident in 2007. One of the markets where this development has been most patent is the interbank market. After a long period of decline, the proportion of financing negotiated with domestic credit institutions increased in just one year from 65% to a figure above 70% in 2008, a rise which strengthened further in the second half of 2011, following the stepping up of sovereign tensions, to close to 75% in early 2012 (see Panel 2). These distortions were also mirrored in interbank market interest rates, affecting the first link of the monetary policy transmission chain (see Panel 3). But, even in the case of bank loans, the mild declining profile seen since the onset of the euro in the proportion of domestic activity – despite the fact that the retail nature of this segment means that these transactions are in the main between lenders and borrowers resident in the same country – came to a halt in 2007 (see Panel 2).

Banks' fixed-income securities portfolios evidenced similar behaviour in this period. After a sizeable increase in debt purchases from issuers with the same nationality in the years 2007 to 2009, the worsening of tensions on sovereign public debt markets caused credit institutions also to begin offloading foreign securities (see Panel 4). Country by country, the increase in home bias in credit institutions' fixed-income portfolios has been across the board since 2007 and, in fact, in some of them – namely the Netherlands, Spain and Ireland – the preference for domestic bonds has even attained levels higher than those recorded prior to the introduction of the euro (see Panel 5). Home bias is higher in the Mediterranean countries, which has reinforced the interaction between sovereign risk and banking risk (see Box 1.1). However, the increase in the presence of domestic bonds has been more pronounced in the countries less affected by sovereign tensions, which may reflect the greater credit risk perceived in bonds issued by other States as a consequence of the sovereign debt crisis.

Although the information available is more limited, this same development is seen in institutional investors' portfolios. Thus, in 2011 the presence of euro area cross-border assets has diminished both in investment funds and in insurance and pension funds. While the flows of both have been significantly reduced in 2011, the breakdown of between domestic and other euro area assets shows a sizeable disinvestment in non-domestic securities (see Panel 6).

Finally, it should be stressed that some weaknesses in the euro area's institutional framework have tended to amplify the effects of the crisis on the area's financial stability and its cross-border financial activity. The imperfect harmonisation at the European level of banking regulation and supervision, and the virtual absence of a macroprudential dimension to both hampered the detection of vulnerabilities before the crisis and, once the crisis was in train, posed an obstacle to efficient crisis management, contributing to the fragmentation and indeed the re-nationalisation of certain market segments. In response to these weaknesses, the EU has launched a series of reforms aimed at improving co-ordination in financial regulation and supervision both at the macro- and microprudential levels. It has also promoted measures geared to strengthening banks' resilience, improving infrastructures and advancing harmonisation at the European level. Nonetheless, it is vital that euro area countries should make headway in resolving the limitations that the existing and eminently national frameworks for financial crisis-management and resolution evidence in the context of monetary union.

Since 2008 Spain's economy has been mired in a severe downturn, which has prompted a significant rise in the number of business closures. Based on available business demography data for Spain[1], it is estimated that during the period 2008-10[2], in net terms (start-ups minus closures) some 65,000 businesses, on average, closed each year. This contrasts with an average annual net increase of almost 120,000 businesses over the period 2002-07[3]. Admittedly, business start-ups and closures are part and parcel of the developments in any economic system, in which progress is made by real-locating resources from inefficient firms to more competitive projects. But this virtuous cycle can become distorted if viable business initiatives ultimately succumb to external factors. That would adversely affect physical and human capital and, therefore, the economy's medium and long-term growth potential.

The about-turn in new business creation is the consequence of both the fall in the number of new projects and, more particularly, the rise in the rate of business closures. Thus, while the number of business closures averaged 270,000 per year during the period 2002-07, in 2008-10 this figure rose to 391,000. An analysis of the distribution of business closures by size and sector of activity (see

accompanying table) reveals a notable increase in the number of closures of businesses with between 1 and 9 employees. As for sectors of the economy, during the crisis all of them have recorded business closure rates higher than in previous years, with a marked increase in the construction sector, where 16% of pre-existing businesses have closed, and the hotel and restaurant sector, where the number of closures has risen to 14%. However, a comparison with other EU countries (Germany, France, Italy, Portugal and the United Kingdom), using Eurostat data available only to 2009, shows that the increase in business closures in Spain during the economic crisis has been similar to that observed in other economies (see Panel 1).

With available business demography data, it is also possible to analyse the impact of business closures on employment developments. Based on Eurostat figures, Spain was the European economy where the number of persons employed across all active businesses most declined during the crisis. In 2009 numbers fell by around 6%, compared with 2.1% in Italy, 2.6% in Germany and 3.6% in Portugal, while the United Kingdom recorded a slight increase of 0.3%. In the case of the Spanish economy, the negative contribution of business closures to job destruction was very significant, at around 4 pp, and accounted for just over 60% of the fall in overall employment. This contribution, exceeded only by the negative contribution of business closures in Portugal, was much larger than that in the rest of Europe's economies.

For a better understanding of this phenomenon, the main determinants of business closures are analysed below using data drawn

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1 The reference statistic for Spain for the business census analysis is the information provided by INE via the Central Business Directory (DIRCE), which draws mainly on fiscal information. International comparisons are based on data made available by Eurostat, following an internal data editing process which makes registration and de-registration data supplied by individual countries comparable.
2 Last year for which data is available.
3 This figure includes both the self-employed and mercantile companies.

SPAIN: BUSINESS CLOSURES. DISTRIBUTION BY SECTOR (a)

SECTOR	Total		Without employees		1-9 employees		10 or more employees	
	2002-2007	2008-2010	2002-2007	2008-2010	2002-2007	2008-2010	2002-2007	2008-2010
TOTAL	**8.8**	**11.7**	**11.3**	**13.5**	**6.6**	**10.5**	**2.6**	**2.7**
Manufacturing	7.5	9.1	12.8	14.6	6.2	7.8	2.1	1.9
Mining/extraction/quarrying	5.5	6.1	11.0	11.4	4.8	6.2	1.5	0.4
Energy and recycling	3.1	5.2	3.7	5.4	2.8	5.8	2.5	1.5
Construction	9.9	16.4	13.0	17.6	7.9	16.5	3.9	5.3
Distribution and sale of vehicles	9.3	10.7	12.5	13.9	6.4	8.1	1.7	1.5
Real estate services	6.4	11.8	8.1	9.9	4.4	15.1	1.8	3.5
Transport	6.7	8.5	7.8	9.7	5.2	7.5	1.6	1.5
Hotels and restaurants	12.8	14.1	16.5	17.7	10.4	12.2	4.3	3.1
Post and telecommunications	10.7	12.7	14.0	16.8	9.4	9.2	3.5	1.8
Financial services	8.8	10.5	11.0	12.7	4.3	6.2	2.1	2.0
Other market services	7.7	10.5	9.3	11.0	5.1	10.1	2.7	2.3
Non-market services	7.8	10.4	10.5	12.4	5.3	9.2	2.4	2.7

SOURCE: DIRCE (NACE-93 until 2007; NACE Rev. 2 since 2008).

a Percentage of total companies from previous year. Average for the period.

from the Banco de España's Central Balance Sheet Data Office-Mercantile Registers[4] and statistical information on business closures provided by the DIRCE (the latter relating solely to companies[5]). Furthermore, a multivariate probit model is estimated, in which the dependent variable is a dummy which takes a value of 1 if the business exits the market between 2008 and 2010 and a value of 0 if it does not. Two sets of potential explanatory variables are identified. First, specific "structural" business characteristics, such as company size, age, export activity and recourse to temporary employment, are computed and their value taken as constant and equal to the value in the pre-crisis period (2006-07). The second set of variables, which are more cyclical in nature and whose values can therefore change during the crisis period[6], includes the

ratio of indebtedness[7], the financial burden[8], change in profit for the year, a proxy for the degree of company wage flexibility/rigidity[9] and, lastly, the average customer payment cycle, a variable which aims to capture the influence of late or non-payment of invoices on the probability of business closure[10].

The results reveal that one of the major determinants of business closure is size (see Panel 2). More specifically, a business that had fewer than 10 employees when the crisis started has a 50% higher probability of closure than an identical, but larger[11], business. Nevertheless, the importance of this factor diminishes with age (micro-businesses with over 20 years of activity in

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4   Only firms incorporated as mercantile companies are required to file their accounts with the mercantile registers. No information is therefore available for sole proprietorships.

5   A sample was taken of businesses active in the period 2006-07 and for which information was available on variables traditionally considered to be relevant in the empirical literature. Data editing left over 140,000 companies, with around 210,000 observations for the analysis.

6   Although these variables lag by one period (or two) to avoid problems of endogeneity wherever possible, it being assumed therefore that they are pre-determined once the business ceases to exist.

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7   Defined as the interest-bearing borrowing of a business relative to its net assets.

8   Percentage of financial costs relative to the sum of gross operating profit and financial revenue.

9   Defined as the difference between the variation in a company's wages relative to the sector average.

10   Also included are control variables for the sector of activity, region and year of observation.

11   Closure probabilities are compared for businesses operating in the same sector, region and year, assuming that the value of the remaining variables is equal to the average across the distribution.

1   BUSINESS CLOSURE RATES (a)
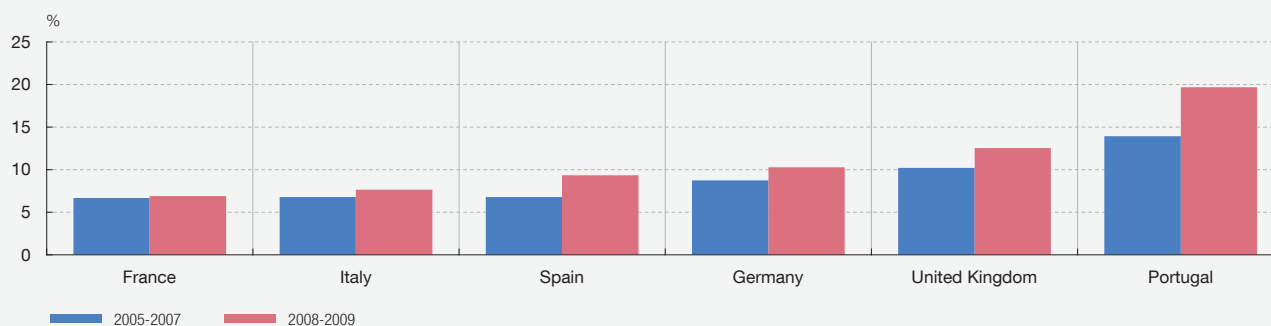
2   SIGNIFICANCE OF THE DETERMINANTS OF THE PROBABILITY OF BUSINESS CLOSURES DURING THE CRISIS (b)
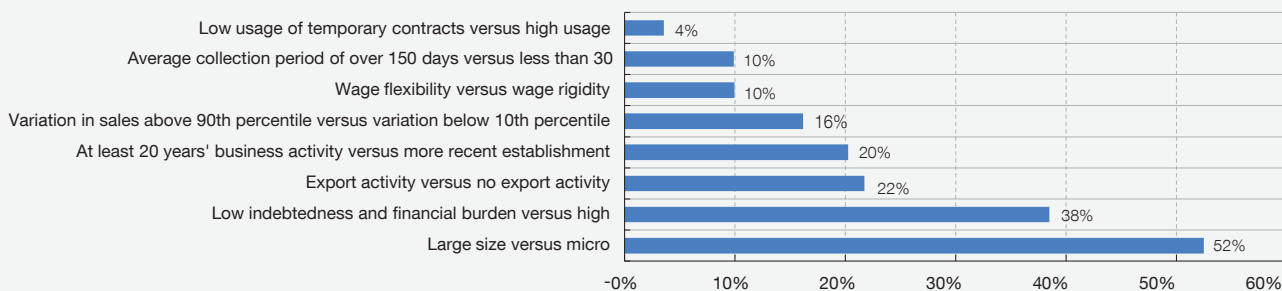
SOURCES: Eurostat and Banco de España.

a   Closures as % of total business.
b   Comparison of businesses operating in same sector, region, year and value of rest of variables.

2007 have a 20% lower probability of closure than a business facing the crisis after one year of activity), export activity (a 22% lower probability of closure) and proportion of temporary staff (4% lower in the case of businesses with a temporary employment ratio in the tenth percentile of distribution vis-à-vis businesses with a ratio in the 90th percentile. The analysis also shows the importance of financial position: a business with a ratio of indebtedness and a financial burden below the tenth percentile has almost 40% less risk of closure than a business at the opposite end of the distribution. Additionally, the late or non-payment of invoices has also been identified as one of the main determinants of business closures in Spain in recent times. Thus, a small business with an average customer collection period exceeding 150 days will have a 10% higher probability of closure than a business of the same characteristics but with a collection period of less than 30 days. Moreover, the impact of the delay in

customer payment diminishes significantly as the size of the business increases[12].

In conclusion, based on the business demography statistic, the impact of business closures during the current economic crisis in Spain has increased in terms of the destruction of the productive base and job losses. Business closures have been especially pronounced in construction sector-related activities, as well as among sole proprietorships and micro-businesses. Furthermore, an analysis of individual data on business closures identifies specific variables which increase the probability of closure, such as small size, low export capacity, wage rigidity, high level of indebtedness and long customer collection period.

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12 The combined effect of size and late or non-payment of invoices is considerable due to the extent of the interplay between both variables. Thus, a small business with a payment cycle of more than 150 days is around 80% more likely to close than a large business with the same customer payment cycle.

According to estimates for different countries, the ratio between changes in the rates of unemployment and GDP, widely referred to as the "Okun coefficient", usually averages around -0.3, i.e a 1 pp fall in GDP tends to cause a 0.3 pp increase in unemployment. Notwithstanding, in Spain, between 2008 Q2 and end-2011, unemployment rose by 3 pp for each percentage point of cumulative decline in GDP – the largest relative increase in unemployment observed in advanced economies[1].

The top panel of the accompanying chart below shows changes in the unemployment rate and GDP growth during both the current and early-1990s crises, the starting point being the final quarter of the expansive cycle prior to both recessions. As can be seen, the latest recession has had a significant effect on the unemployment rate, although the crisis is proving to be both deeper and longer

than the previous recession. The behaviour over time of Okun's coefficient can be analysed by estimating the ratio of the unemployment rate (u) to GDP growth as follows:

$$\Delta u_t = \alpha - \beta_i \Delta GDP_{t-1} + \varepsilon_t$$

The bottom left panel of the chart shows the outcome of the estimation using a recursive procedure which estimates an average value for parameter β for every period. The recession in the early 1990s saw an initial increase in the absolute value of this coefficient. Its pace in fact intensified in the subsequent period of expansion, in which strong job creation brought about a significant reduction in the high level of unemployment. As for the more recent period, since 2008 the elasticity of unemployment to changes in GDP has also been greater.

A time-variable Okun coefficient can also be estimated using a linear model, assuming a random walk, or a model allowing the

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1   For recent country estimates of this coefficient in a number of countries, see *World Economic Outlook* (2010), IMF, April.

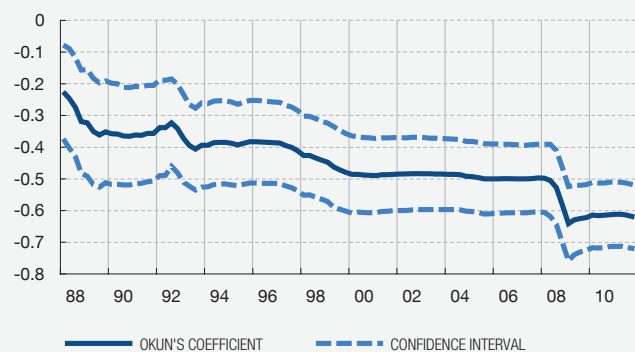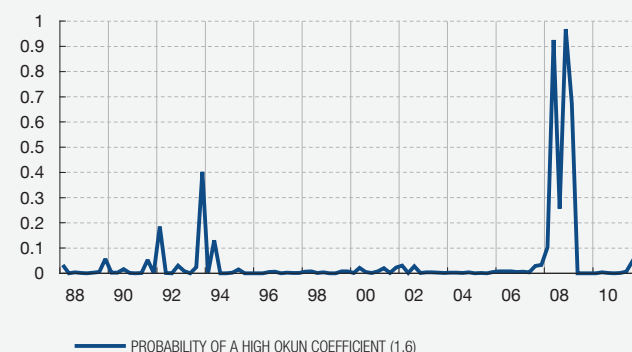UNEMPLOYMENT RATE AND GDP GROWTH IN THE SPANISH ECONOMY

UNEMPLOYMENT RATE AND GDP GROWTH DURING THE LAST TWO RECESSIONS
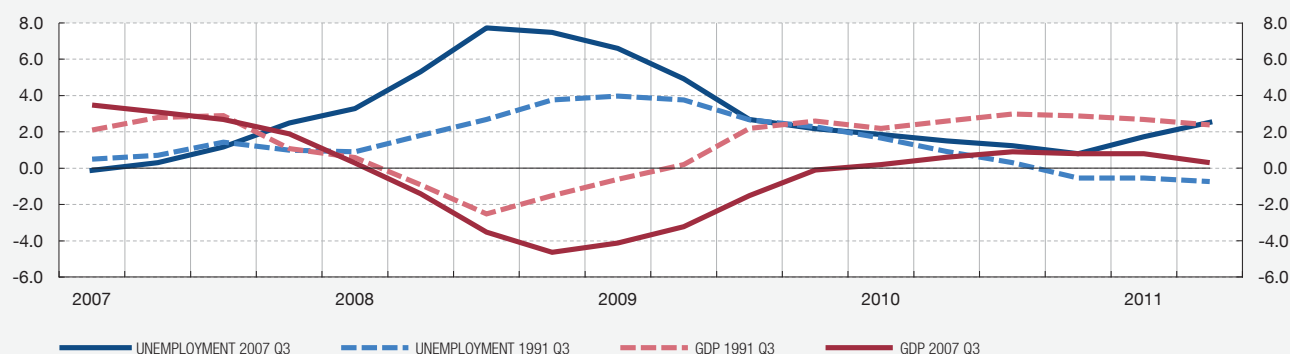
RECURSIVE ESTIMATION OF OKUN'S LAW

ESTIMATE OF A MARKOV PROCESS WITH TWO POSSIBLE OKUN COEFFICIENTS

SOURCES: INE and Banco de España.

existence of two possible states, which follow a Markov process, each with a different value for Okun's coefficient. The outcomes obtained using the two approaches tend to point to relative stability in Okun's coefficient for the Spanish economy until the start of the current crisis. Thus, in the first case, the estimates indicate a sharp increase in the coefficient from 2008 Q4 to 2009 Q1. In the second case, the two-state model gives Okun coefficients of -0.6 and -1.6, with a very high probability of entering the high-elasticity state after 2008 Q4 (see bottom right panel of the chart).

The determinants of the value of Okun's coefficient can be identified by breaking down the change in the unemployment rate using the following approximation:

$$\Delta u \approx -\Delta \ln Y + \Delta \ln(Y/H) + \Delta \ln(H/N) + \Delta \ln(LF)$$

which simply approximates changes in the unemployment rate (u) taking the sum of the GDP growth rate (Y), with a negative value, and the growth rates of productivity per hour (Y/H), average working hours per employee (H/N) and labour force (LF).

Since 2008, the four addends have contributed to the rise in unemployment (see accompanying table). More specifically, the sharp increase in Okun's coefficient in the recent crisis can be linked to two main factors: the increase in the labour force, which has not been adversely affected by the worsening labour market conditions, and the surge in productivity, partly associated with large-scale shedding of construction sector jobs. Available data suggest that the buoyancy of productivity is not the result of a reallocation of jobs to more productive sectors, but rather of

strong productivity gains in each of them, coupled with the pace of the job destruction observed[2]. Moreover, contrary to what has happened in other European countries, not only have working hours per employee not fallen during the crisis in an attempt to soften the impact on employment, they have actually increased slightly.

In short, one of the main characteristics of Spain's labour market is excessive employment volatility and, consequently, as shown above, a high elasticity of unemployment to economic activity. This high elasticity is related, inter alia, to the labour market's institutional framework, which hinders adjustments in wages, hours and other working conditions and, instead, encourages job destruction, mainly of those employed on temporary contracts. Additionally, different empirical results tend to show an increase in Okun's coefficient in the recent crisis to even higher levels from an international perspective, which seems to be related to the severe adjustment in construction sector jobs and the increase in the labour force. Nevertheless, the recent labour market reform is expected to allow working conditions to adapt better to businesses' individual financial situations and, in future, to foster a more balanced adjustment between wages and jobs in the face of adverse shocks.

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2 Aggregate productivity growth can be broken down into a first component which captures sectoral weighted productivity growth, a second component which captures the impact of sectoral job reallocation to sectors with different levels of productivity, and a third residual component which captures crossover effects. Calculations for the most recent period suggest the first component accounts for the sharp growth in productivity.

BREAKDOWN OF UNEMPLOYMENT RATE GROWTH

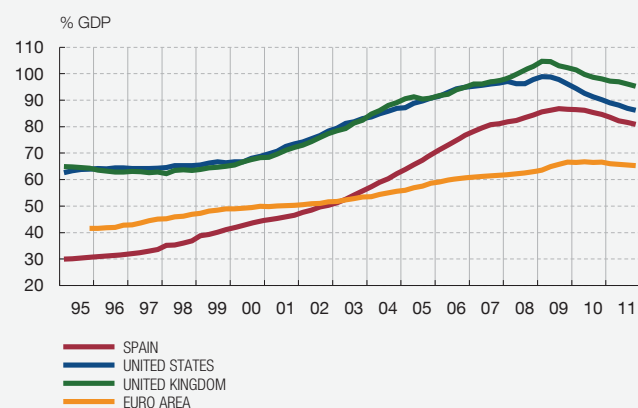|	GDP	Productivity	Hours per employee	Labour force	Unemployment rate (EPA)
1981-1984	-1.1	4.4	-1.6	0.3	1.7
1985-1991	-3.9	2.2	-0.7	1.7	-0.5
1992-1993	0.0	2.6	-0.4	0.6	2.4
1994-2000	-3.9	0.5	-0.2	2.1	-1.2
2001-2007	-3.4	0.6	-0.6	3.0	-0.3
2008	-0.9	0.8	0.3	3.3	3.1
2009	3.7	2.7	0.4	0.9	6.7
2010	0.1	2.3	0.3	-0.1	2.1
2011	-0.7	1.9	0.7	0.0	1.4
2008-2011	0.6	1.9	0.4	1.0	3.3

SOURCE: Quarterly National Accounts and EPA (INE).

The indebtedness of Spanish households and non-financial corporations grew at a very fast pace during the latest upturn (between 1995 and 2007), reaching high levels in relation to GDP both from a historical perspective and in comparison with other advanced economies[1] (see Panels 1 and 2). Although a large part of the increase in these indicators is in response to structural changes in the Spanish economy in that period (belonging to an area of greater macroeconomic stability and a permanent reduction in interest rates), the levels reached were excessive and it is necessary for them to be steered towards more moderate values.

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1 In this box the debt ratios are calculated as the quotient between debt and GDP of the quarter in annualised terms and are seasonally adjusted. This approach, which is not usually used, provides a more accurate date for the peak in the series.

The deleveraging process has already begun, albeit not at an even pace to date. Following the outbreak of the crisis, debt ratios continued to climb due to the inertia of the financing flows and the sharp contraction of GDP (the denominator of the ratio). Subsequently, they tended to stabilise and from the second half of 2009, they moved on a downward path. From the peak reached in September 2009 (87% of GDP) until the end of 2011, the household debt ratio has declined by 5.9 pp (see Panel 3). This contraction was the result of the combined effect of a series of factors: 1.9 pp are accounted for by the fact that the volume of new loans has been lower than repayments of outstanding debt (the net flow of operations was negative); 1.9 pp are attributable to inflation (which reduces the real value of previously incurred debts); 0.7 pp are due to real GDP growth (the denominator of the ratio), and a further 1.3 pp, to loan write-offs (loans which have been removed from lenders' assets since they are deemed difficult to collect). As for
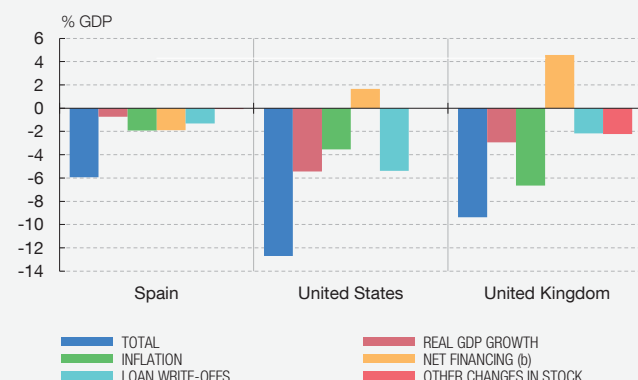
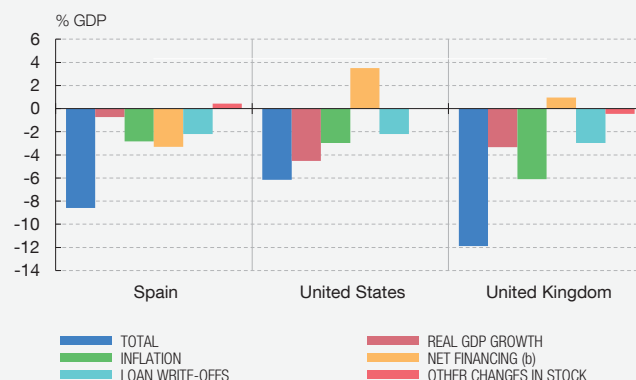1 HOUSEHOLD DEBT RATIO (a)

2 NON-FINANCIAL CORPORATIONS' DEBT RATIO (a)
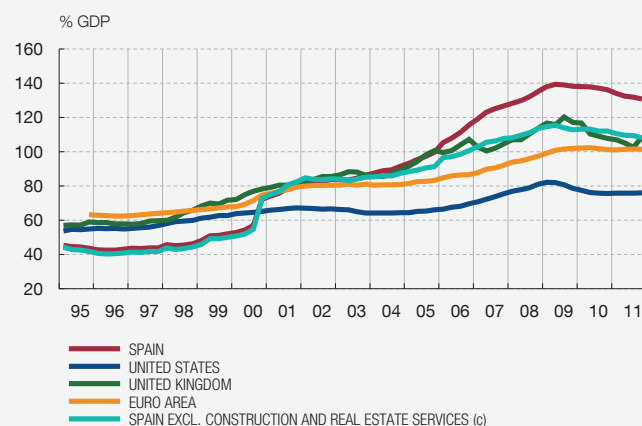
3 CHANGE IN DEBT RATIO FROM PEAK.
HOUSEHOLDS (a)

4 CHANGE IN DEBT RATIO FROM PEAK.
NON-FINANCIAL CORPORATIONS (a)

SOURCES: ECB, Federal Reserve, Office for National Statistics and Banco de España.

a The debt ratio is obtained as the quotient between debt and GDP of the quarter in annualised terms, and is seasonally adjusted.
b In the case of the United States, it is calculated as the variation in the stock minus loan write-offs.
c Calculated as the quotient between the debt of non-financial corporations, excluding credit for construction and real estate services, and national GDP excluding the gross value added of these branches of activity.

corporations (see Panel 4), the indicator fell to a greater extent (8.6 pp) from the high recorded in the second half of 2009 (139% of GDP). The breakdown by factor shows that, as in the case of households, all the components contributed to the decline in the indicator (except for the heading "other changes in stock"), especially net financing flows and inflation.

In the United States and the United Kingdom, economies in which private debt had also reached high levels, a deleveraging process has also been observed recently which, however, shows some differences compared with that of Spain. In the United States, to date the adjustment has been sharper for households, whose debt ratio also increased substantially during the latest upswing, to a higher level than that in Spain (99% of GDP in 2009 Q1). Thus, in less than three years this sector's debt ratio has fallen back by 13 pp. The two factors which have contributed most to these developments have been the rise in defaults on consumer loans and those for house purchase, and the recovery of activity, especially in 2010 (see Panel 3). Similarly, the notable reduction in net flows of new loans has also contributed to the process, although the accumulated net flow of lending to this sector remained positive, unlike in Spain. The indebtedness of non-financial corporations, which had expanded more moderately during the phase of economic dynamism, to represent 82% of GDP in 2009 Q1 (clearly lower than the value recorded in Spain), experienced a slightly more moderate correction (of around 6 pp), and the ratio had stabilised during 2011, since the recovery of the flows of new operations had been more or less offset by nominal GDP growth (see Panel 4).

In the United Kingdom, where indebtedness had reached very high levels as a percentage of GDP in the two sectors (105% for households in 2009 Q1 and 120% for corporations in September 2009), the adjustment has been sharper to date than in Spain (see Panels 3 and 4), both in the case of households (9 pp) and in the case of non-financial corporations (12 pp). The greater intensity of the deleveraging process is essentially explained by high inflation, which remained persistently above the central bank's target, and the higher real growth of the British economy. Also noteworthy, as in the case of the United States, and unlike Spain, the deleveraging of the private sector is not underpinned by a contraction of financing.

The comparison of the deleveraging process in Spain with that in the United States and the United Kingdom shows that in Spain it is a slower process which turns to a greater degree on a drop in financial flows due, on one hand, to the lower growth of Spanish GDP and, on the other, especially in relation to the UK, to lower inflation. In the case of US households, the high volume of defaults has also played an important role, a phenomenon which may be associated with the poorer quality of the mortgages extended during the years prior to the crisis and to institutional factors which tend to favour an increase in loan write-offs in adverse situations. Logically, households reducing their indebtedness in this way has a negative impact on the profitability of the banking system.

Developments to date in Spain, in any event, are largely in step with the historical patterns of previous deleveraging processes, which show that the latter are relatively protracted (lasting around six years on average) especially if they are accompanied by real estate and banking crises.[2] In the case of a banking crisis, during the early years there is usually an adjustment based to a large degree on negative net financing flows, due to the economy flatlining – a normal characteristic of this initial stage. If the degree of pressure to which Spanish banks have been subject since the beginning of the crisis, as a result of over-expansion and excessive real estate exposure built up during the upswing in the cycle, and commitments in terms of price stability arising from Spain's euro area membership are taken into account, it is difficult to think of an alternative path for the behaviour seen in the debts of the non-financial private sector. The duration of the process of credit contraction will hinge crucially on the economy's capacity to resume growth which does not pivot on recourse to borrowing. As explained in detail in this *Annual Report*, this scenario involves greater momentum of exports which will have to be based on a swift recovery of the competitiveness lost during the previous upturn.

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2 See, for example, McKinsey Global Institute (2010), "Debt and deleveraging: The global credit bubble and its economic consequences", and O. Aspachs-Bracons, S. Jódar-Rosell and J. Gual (2011), "Perspectivas de desapalancamiento en España", Documentos de Economía "La Caixa".

The internationalisation of financial flows and, more generally, the recent globalisation of finance broaden the options for diversifying portfolios and financing sources. From this standpoint, a large external debt, particularly if accompanied by a similarly high balance of foreign assets, does not constitute a problem. However, an accumulation of liabilities to the rest of the world raises the exposure to refinancing risk in the international markets. And this, in the current climate of financial strain in the euro area and of distrust towards certain euro area countries, including Spain, is an important

factor of vulnerability. In Spain's case, moreover, the amount of claims on non-residents is well below the sum of debts to them. To reduce this element of risk, Spain will have to significantly adjust the balance of its cross-border flows by means of gains in competitiveness, with related benefits in the net international investment position that will only be seen in the medium term.

Against this background, it is pertinent to analyse in detail the short-term refinancing risks to which the Spanish economy is ex-

EXTERNAL DEBT OF THE SPANISH ECONOMY (a)
Balances at December 2011

€bn

	Securities			Deposits (incl. interbank)			Commercial loans and trade credit	Total
		Maturity (b)			Maturity (c)			
	Total	2012	Subsequent years	Total	2012	Subsequent years	Total	Total
General government	247.6	53.7	193.9				34.7	282.3
Central government	213.2	50.4	162.8				4.9	218.1
Regional government	27.4	3.2	24.1				26.5	53.8
Local government	1.0	0.1	1.0				3.4	4.4
FROB and FADE	6.0	0.0	3.8				0.0	6.0
MFIs (excl. Banco de España)	223.0	45.2	177.7	493.5	354.5	139.0		716.4
Of which:								
Covered bonds	*122.6*	*6.7*	*115.9*					*122.6*
Other resident sectors	237.5	28.1	209.4				363.5	601.0
Insurance and pension funds	0.0	0.0	0.0				7.1	7.1
Financial vehicle corporations	112.9	5.6	107.3				0.4	113.3
Financial auxiliaries	0.0	0.0	0.0				0.2	0.2
Other financial intermediaries (d) (e)	114.2	21.7	92.5				1.8	116.0
Of which:								
MFI subsidiaries	*65.3*	*20.5*	*44.8*					*65.3*
Non-financial corporations (e)	9.7	0.8	8.9				173.4	183.1
Intercompany loans (direct investment)							178.4	178.4
Individuals and NPIs	0.8	0.0	0.8				2.3	3.0
TOTAL SECTORS	**708.1**	**127.0**	**581.1**	**493.5**	**354.5**	**139.0**	**398.2**	**1,599.8**

SOURCE: Banco de España.

a Unconsolidated individual data, excluding the Banco de España.
b The difference between the total and the sum of the two specified tranches is due to issues whose maturity could not be de determined. In no case is this difference significant.
c The separation of MFIs' deposits by residual maturity is based on information from return T9, in which loans and deposits are broken down by residual maturity, It should be kept in mind that return T9 refers to total business and, in the case of MFIs, does not separate residents from non-residents,
d Basically subsidiaries of MFIs and of large non-financial corporations.
e Excluding inter-company loans constituting direct investment.

posed. Assessing them requires a knowledge of the total volume of debt to the rest of the world, which at end-2011 amounted to €1,600 bn excluding the Banco de España (149% of GDP),[1] and of the nature of this debt. In this respect, the accompanying table breaks down this debt by instrument, sector and, where possible, maturity. Thus, for example, it can be seen that, of the €708 bn of external debt in the form of securities, less than one-fifth (€127 bn) matures in 2012. It is true that non-residents can sell on the market the securities maturing after 2012, but this does not represent an immediate reduction of the funds available to Spanish issuers, although it may cause a fall in price and, consequently, a higher subsequent issuance cost.

Most of the other short-term debt consisted of deposits received by Spanish MFIs, amounting to €354 bn. MFIs, however, also had €149 bn of short-term deposits with non-resident institutions, so the net amount to be refinanced in 2012 by the sector as a whole decreases to €205 bn. Also, two-thirds of these transactions were collateralised interbank transactions which, although not risk-free, are less exposed to refinancing problems, particularly since Spanish institutions began to operate on a large scale in the repo market through central counterparty clearing houses. Moreover, €103 bn of the uncollateralised portion related to Spanish branches and subsidiaries of foreign banks, which are naturally funded mainly by their parents. Consequently, funding risks would be concentrated mainly in the uncollateralised net position of Spanish banks, which amounted to €20 bn at end-2011.

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1 This figure is the amount of debt claims, which is lower than the total financial liabilities to the rest of the world (€2,201 bn) because a portion of these consists of equity claims (mainly foreign investment in the capital of Spanish firms).

Finally, in the case of commercial loans and trade credit from non-residents to Spanish entities (€398 bn in total), the accompanying table shows that approximately half of it related to transactions between companies of the same group, the roll-over of which can be expected to be less influenced by the current widespread climate of uncertainty.

Having said all this, an analysis of short-term refinancing risks should also take into account the possible existence of mitigating factors. In this respect it should first be noted that resident agents (excluding the Banco de España) had a balance of €258 bn of portfolio investments abroad. Thus, if difficulties were to arise in financing the Spanish economy, there would be some leeway for sectors in need of funds to raise them, partly, from those sectors that have invested their savings in foreign securities, as has commonly occurred in the last four years, over which the stock of foreign portfolio investment has decreased by 40%. Similarly, the notable rise in recourse by resident MFIs to the Eurosystem in the opening months of 2012 has provided them with a buffer to help face possible roll-over difficulties in their own or other domestic sectors over the next three years.

These alternative means of financing are not, however, unlimited and their use entails costs. External and domestic portfolios are not perfect substitutes for each other. Furthermore, this buffer can only be used temporarily, since as residents close out their external positions, it leaves progressively less leeway to keep resorting in the future to this source of funding to meet the economy's borrowing requirements. Similarly, the greater recourse to the Eurosystem is not sustainable and a significant reduction in the level of external debt through gains in competitiveness will be a lengthy process. Therefore, in the short term it is crucial to persevere with action to rebuild the confidence of foreign investors in the Spanish economy, so as to restore normal financing flows with the rest of the world.