ANNUAL REPORT 2016

BANCO DE ESPAÑA
Eurosistema

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FOREWORD BY THE GOVERNOR

Luis M. Linde

The Spanish economy sustained a high rate of growth in 2016, exceeding the expectations prevailing before the year began. For the second year running, GDP grew by 3.2%, outpacing – as in 2015 – the rate observed in the euro area as a whole by around 1.5 pp. This performance was, moreover, against the background of the continuing external surplus, despite the positive growth differential vis-à-vis Spain's trade partners as a whole. The balance in terms of employment generation is also favourable. However, while the pre-crisis level of GDP is expected to be regained during the current quarter, employment is still almost 12% lower.

The prolongation of the upturn has contributed to correcting the imbalances of the Spanish economy. This has been particularly visible in terms of the improvement in the degree of competitiveness in recent years, the notable reduction in the volume of households' and non-financial corporations' debt, and the progressive normalisation and pick-up in the real estate sector. While – as the Banco de España projections suggest – the outlook is favourable, in recent quarters a series of risks have been taking shape, stemming essentially from the external sector, the interaction of which with the elements of fragility still in place might adversely affect how the economy evolves.

Chapter 1 in this Report discusses the factors driving growth in the Spanish economy, and both the key vulnerabilities to the various risks in place and the medium- and long-term structural challenges ahead are discussed.

Growth in the global economy was once again modest in 2016, although some improvement was observed as the year unfolded. The pace of expansion of international trade flows was moderate, which might partly reflect a reversal of global value chains and also, perhaps, the effect of a rise in protectionist tendencies. In the advanced economies, the relatively subdued pace of growth contributed to expansionary monetary policies being maintained. Among the emerging economies, the recessions in some commodity-producing countries, as a result of the falling prices of these goods, tended to ease over the course of the year as commodity prices rebounded. Global financial markets were buffeted by some short-lived bouts of turbulence. One such episode was at the beginning of 2016, when doubts began to arise over the possibility that the Chinese authorities might not be able to cope with the simultaneous objective of preventing a significant slowdown in activity and containing indebtedness. Subsequently, unexpected UK and US election results led to periods of some volatility on capital markets.

In the euro area, as has been the case since the start of the recovery in mid-2013, GDP growth remained modest, against the backdrop of a relatively unfavourable external environment and the prevailing high levels of uncertainty. Inflation trended upwards as a result of the acceleration in energy prices, although the core component has shown no signs of picking up to date. The lack of any sign that inflation may sustainably be drawing close to its medium-term objective of 2% led to a further easing in monetary policy, involving fresh policy interest rate cuts and successive adjustments to the asset purchase programme, including most notably its extension to December this year and the inclusion of high credit quality debt securities issued by non-financial corporations operating in the euro area.

In Spain, the recovery continued to be underpinned by a combination of factors. On one hand, the expansionary stance of fiscal policy and of the common monetary policy, along

with the decline in commodity prices up to the start of 2016, has increased the pace of recovery in the Spanish economy to a greater extent than in the rest of the euro area. On the other, the impact on competitiveness of the reforms undertaken in recent years, together with the ongoing deleveraging of private agents (which is covered in detail in Chapter 2 of this Report for the case of non-financial corporations), has laid the foundations for more balanced and sustained growth.

The outlook for the cyclical upturn in the economy continuing is favourable, owing to the foreseeably persistent effects of the correction of the Spanish economy's imbalances. Also, there is here a more conjunctural factor, namely the greater momentum of global activity projected for the next two years. Nonetheless, it is expected that the adoption of a more restrictive fiscal policy stance, which is needed to see through the budgetary consolidation process, and the impact of the recent rise in oil prices on households' and firms' real income will result in some easing in the pace of growth of the economy.

This favourable picture is, however, subject to several risks. On the external front, there are several factors of uncertainty. First, the transition of the Chinese economy from an export-, investment- and industry-based model to one more sustainable in the longer run based on consumption and services is a desirable process which, however, entails significant risks, particularly in the current context of private over-indebtedness. Further, a possible expansionary bias to US fiscal policy might contribute to tightening financial conditions both in the United States and globally. An element of particular risk to the global economy is the possibility that the authorities in various countries, with a sizeable weight in global trade, may take a turn more conducive to the adoption of protectionist measures. That would prove particularly adverse for an economy such as Spain's, whose external openness has stepped up notably since the crisis. In addition, our economy will foreseeably be directly affected by the form relations between the United Kingdom and the European Union ultimately take, given Spain's high degree of exposure to the British economy in certain areas, such as exports of tourism and non-tourism services and the financial sector.

Secondly, agents' debt levels remain high, despite the intense deleveraging under way in recent years, which adds a factor of vulnerability to a hypothetical future tightening of financing conditions. In this respect, it should be stressed that despite the economy as a whole attaining a net lending capacity position, the dependency on foreign saving remains very high, as analysed in depth in Chapter 3 of the Report.

In recent years, interest rates have fallen substantially, to historically low levels, which has contributed to boosting the different agents' income. The onset of the normalisation of financing conditions would naturally see the opposite effect. However, the degree of vulnerability of the different agents to this eventuality is not the same, since their respective debts have also trended differently. In particular, the public debt ratio has risen to a very high level close to 100% of GDP, after increasing by more than 60 pp since the onset of the crisis. This situation highlights the need to draw up a budgetary consolidation plan in the medium term, in a context in which, for the second year running, in 2016, fiscal policy adopted an expansionary bias. At the same time, regard should be had to the composition of the necessary budgetary adjustment, so that the expenditure/revenue mix is conducive to fiscal policy contributing to the economy's potential growth.

As regards private agents, the progress in ongoing deleveraging has been most significant. Nonetheless, the level of debt in relation to income and, therefore, the financial burden, remains very high across certain groups of agents. Among non-financial corporations, this includes

companies engaging in construction and real estate services, from the sectoral standpoint, while involving the smallest firms in terms of size. As far as the household sector is concerned, debts and the attendant burden are concentrated among lower-income households.

A hypothetical rise in the cost of financing would not feed through equally to all agents in the economy. The impact of a rise in interest rates might be swift but relatively modest in the case of households and non-financial corporations if, as occurred in the closing months of 2016, this rise is concentrated in the longer-dated segments of the yield curve, in a setting in which the bulk of the debt of these agents is short-term or floating-rate. Conversely, in the case of general government, and given the sizeable weight of this sector's long-term debt, the pass-through to new financing operations is expected to be sharper, but also slower in terms of the aggregate cost.

A third factor of vulnerability of the Spanish economy is banks' relatively low profitability, a feature they share with their peers in other euro area countries. The lower volumes of non-productive assets in bank portfolios have exerted a favourable impact on profitability, but this has been lessened by the compression of net interest margins, in a setting in which the rebound in lending activity is still moderate.

Lastly, final production in the Spanish economy evidences a greater dependency on imported oil than other developed economies, while the oil price oscillations have a greater impact on the rate of change of consumer prices. Both facts underscore the need to prevent a generalised pass-through of the recent rises in oil prices to the prices of other goods and to wages, given the adverse effect this would exert on the economy's external competitiveness.

Beyond these risks, longer-term economic policy priorities should focus on the need to address the effects of a series of growth-constraining factors, including most notably high structural unemployment, population ageing and low productivity.

Firstly, there are broad population groups, such as those with a lower skills level, who, given that they have remained unemployed for a lengthy period, cannot directly benefit from the economic recovery. It should therefore be a priority to promote the employability of the long-term unemployed, preventing any loss of their skills, in which connection training policies should play a key role. Furthermore, hiring-incentives programmes may prove effective in helping these individuals return to work, provided such programmes focus on the target population and avail themselves of the appropriate mechanisms for monitoring and evaluating results.

Secondly, population ageing is a constraint on the economy's potential growth which operates principally – inter alia – via the lesser availability of human capital. In addition, these demographic developments place upward pressure on public spending on certain items, including health care and, above all, pensions. In this latter respect, the reforms undertaken in recent years enable the effect on spending of the increase in the dependency ratio to be contained, albeit at the expense of a reduction in the average pension amount relative to average wages. Tasks outstanding for the future in this area thus involve determining the desired relationship between wages and pensions, and the means for ensuring the system's sufficiency of revenue.

Thirdly, the sluggishness of productivity means that the projected potential growth rates are also relatively low, even when considered in per capita terms. Raising long-term growth

calls for measures in widely differing areas, with the aim of facilitating the reallocation of resources to the most productive firms. On the regulatory front, those elements hampering market entry by new firms or those constraining their growth need to be amended. Moreover, regulatory constraints in certain sectors, services in particular, need to be countered, and the efficiency of legal proceedings should be improved and the excessive duality of the current labour market reduced, given the adverse effect duality has on employee productivity. Finally, the evidence available suggests there is ample scope for improving the quality of education and for promoting technological capital accumulation.

Lastly, developments in the Spanish economy in the medium and long term will be influenced by those in the EU and the euro area. In the economic policy realm, an enhanced medium-term outlook, making the possibility of an entrenched low-growth scenario more remote, will call for the extraordinary monetary policy stimulus being provided at present to be supported by domestic policies which, in the fiscal sphere, harness the headroom available (while simultaneously taking into account the budgetary discipline rules in force) and, in respect of structural policies, promote productivity growth.

Furthermore, rising demands for the introduction of greater restrictions on the free movement of people, goods and services should act as a catalyst for both the EU and the euro area to seek out avenues for stepping up their degree of integration. In the case of the euro area, deepening financial integration through the completion of the Banking Union and progress on the Capital Markets Union are a priority. Beyond the financial realm, the aim is to achieve a genuine Economic Union encompassing economic policies other than monetary policy and including common stabilisation mechanisms, such as those discussed in Chapter 4 of this Report.

1 Introduction

The Spanish economy continued to grow at a high rate in 2016. GDP grew by 3.2%, the same rate as in 2015, and the pre-crisis level of activity is expected to be regained in 2017 Q2. Other highlights in 2016 were the growth in employment, which brought the unemployment rate down to 18.6%, from 20.9% at the end of 2015, and the continuing high level of net lending to the rest of the world, which amounted to 2% of GDP.

The current recovery phase has been based on the correction of some of the macro-financial imbalances and also on other more temporary developments. The recovery in external competitiveness and the improvement in the financial situation of households, businesses and financial institutions, partly as a result of the various reforms undertaken in different areas in recent years, are significant drivers of the recovery in the Spanish economy. In addition, growth in recent years has been boosted by more temporary factors, such as the fall in oil prices, the fiscal stimulus and the expansionary monetary policy. These factors appear to have had a stronger impact in Spain than in the euro area as a whole, partly explaining the growth differential in Spain's favour.

Domestic demand remained highly buoyant and the developments in the net external balance were very favourable. In 2016 private consumption was highly robust and accelerated slightly, while the growth rate of investment moderated, largely due to the slackness of public investment, although in the second half of the year business investment was also less buoyant. Net external demand made a positive contribution to GDP growth for the first time since 2013; goods exports grew at a higher rate than the markets in which they are sold, exports of tourist services grew at a very high rate, partly linked to the instability in certain competitor countries, and, above all, imports moderated somewhat.

The recovery is expected to continue in 2017, although there are significant risks. These risks arise from the external environment and the rise in interest rates in certain markets. The prospects for continuation of the current growth phase in 2017 are favourable. However, as the temporary factors that have been driving recent GDP growth lose momentum, the Spanish economy is expected to grow at more moderate rates.[1] The acceleration in world economic activity is expected to partially make up for this loss of momentum, in line with the developments observed in the final months of 2016 and in the first few months of this year, in the advanced economies in particular, including in the euro area. However, this outlook is not free of risks that could have implications for the Spanish economy. First, the improvement in the outlook for world activity has been accompanied by an increase in global uncertainty relating to the resurgence of protectionist positions in relation to trade and migratory flows. Second, in autumn 2016 there was a sharp increase in interest rates at the longest terms in the United States, which was eventually passed through to European markets. This development seems to reflect revised expectations regarding the rate of normalisation of the Federal Reserve's monetary policy and a rise in term and inflation risk premiums, which were at very low levels. Third, world inflation rates are currently accelerating, largely due to the increase in the prices of oil and other commodities. If the prices of these products stabilise at their current levels, then the rise in inflation since late 2016 will not be lasting and the maintenance of an accommodative monetary policy stance will be warranted.

1 See the March 2017 macroeconomic projections of the Banco de España.

The new global environment may have a negative impact on the path of recovery projected for the Spanish economy, given the persistence of certain vulnerabilities. The recovery in the Spanish economy may be prejudiced by this new global environment. First, reducing the high level of external indebtedness requires a sustained external surplus, which would be difficult to achieve in a context of contracting international trade flows, increasing oil prices and further rises in interest rates. Moreover, the high level of public debt and the over-indebtedness that still persists in certain parts of the private sector constitute an element of vulnerability in the event of a tightening of financing conditions. Finally, in the central scenario, in which the inflationary pressures of recent months begin to ease as the past movements in the oil price tail off, it is crucial for the Spanish economy that domestic prices and wages should not accommodate the temporary rise in the cost of energy and raw materials. In this respect, it is necessary to ensure that the competitive advantages built up in recent years, which are proving to be a vital support for the recovery in activity and employment creation, should not be dissipated.

In the context described, certain significant structural problems still need to be addressed. Maintaining a path of solid recovery for the Spanish economy in the longer term requires that a number of significant challenges be addressed, including long-term unemployment, population ageing, the high volume of public debt and the low rate of growth of total factor productivity.

2 Economic developments in 2016

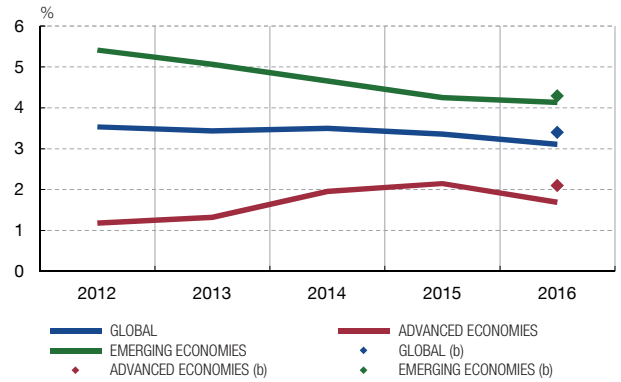
2.1 A NEW GLOBAL ENVIRONMENT

World economic growth in 2016 was again lower than expected, while inflation followed a rising path. The world economy grew by 3.1% last year. This was 0.1 percentage points (pp) less than in 2015 and also below the rate anticipated at the beginning of the year. The mild slowdown in activity was a consequence of the diminished dynamism of the advanced economies, whose growth fell by almost 0.5 pp, to 1.7%, mainly as a result of the lower growth in the United States. At the same time, the GDP growth rate in the emerging economies increased by 0.1 pp, to 4.2%, after falling for five years running. Inflation rose during the year in the advanced economies, reflecting the increase in oil prices (of 55% in 2016 as a whole). On average, the inflation rate in 2016 was 0.7%, up from 0.3% in 2015. By contrast, inflation in the emerging economies fell by 0.5 pp to 4.2%, as a result of developments in the commodity-exporting countries, whose currencies stopped depreciating and, therefore, generating inflationary pressures (see Chart 1.1).

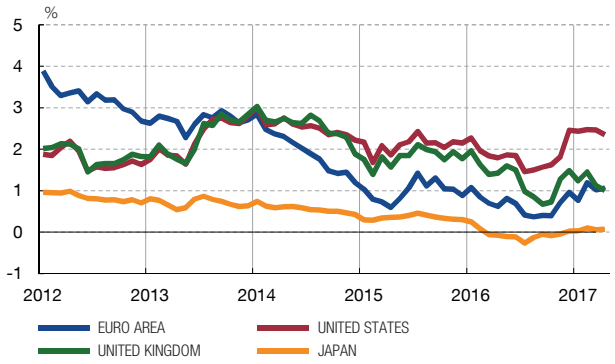
The global outlook has become more complex, both in the advanced and in the emerging economies. The outcome of the June referendum on the United Kingdom's continued membership of the EU and the result of the elections in the United States in November have had an impact on a complex global economic and financial outlook. Indeed, the fragility of the recovery in the advanced economies, despite the recent improvement, is compounded by the difficulties certain emerging economies are having exiting their recessions, the signs of weakness in international trade (more marked in the first half of 2016) and, especially, the tensions in the process of rebalancing the Chinese economy.

In the United States, changes are expected in the economic policy stance, which has contributed to a rise in long-term interest rates. In the United States, following the arrival of the new administration, there may be some potentially very significant changes in various areas of economic policy, including fiscal policy. Possible measures include, inter alia, a major reform of corporate income tax (with a significant reduction in the rate charged), a reduction in personal income tax (especially at higher income levels), an

1 GROSS DOMESTIC PRODUCT (a)

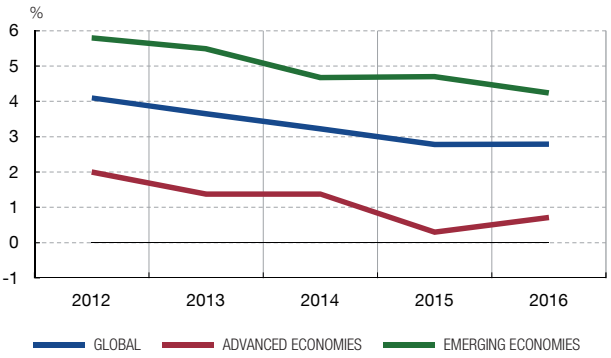


2 LONG-TERM INTEREST RATES IN ADVANCED ECONOMIES (c)



3 COMMODITY PRICES

4 CONSUMER PRICES (d)



SOURCES: IMF (World Economic Outlook April 2017) and Datastream.

a Annual rates of change.
b Forecasts from WEO, January 2016.
c 10-year sovereign bonds.
d Year-on-year rates of change.

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infrastructure plan, an increase in defence spending and the possibility of offsetting cuts in other items of expenditure. Against this background, markets have in recent months begun to anticipate that the Federal Reserve will raise official interest rates more rapidly. The expected change in the macroeconomic policy stance in the United States has contributed, following the elections of last November, to a rise in long-term interest rates, which has been passed through to other economies, including in Europe (see Chart 1.1).

Trade exchanges and movements of people may be hampered by possible policy changes in the United States and by the consequences of Brexit. In 2016, growing support was seen in certain advanced countries for protectionist policies (see Box 1.1). In this respect, the new US administration advocates the introduction of certain restrictions on trade exchanges and migratory movements and less international coordination of financial regulation. Also, although the arrangements for the United Kingdom's exit from the EU are subject to a high degree of uncertainty, lower flows of trade and workers between these two areas will very possibly be one of the consequences.

The difficulties involved in correcting the imbalances in the Chinese economy, where the growth of indebtedness has not been curbed, continue to exist. In China, the

financial system experienced significant turbulence at the beginning of 2016, which spread to world markets as a whole, against a background of expectations of renminbi depreciation and uncertainty over the objectives and room for manoeuvre of the Chinese authorities in the monetary and exchange rate spheres. Ultimately, these tensions reflected the complexity of the transition from a growth model based on public investment and exports to a new one based on household consumption and production of services. During the most recent phase, the prevailing model was maintained through fiscal stimulus and extraordinarily loose financial conditions, the result of which has been growth in domestic imbalances, especially in the form of high corporate debt. Since 2013, the Chinese authorities have promoted a number of reforms, including notably liberalising the financial system and cross-border capital movements. During this period, macroeconomic policies have faced the difficult task of balancing two objectives: support for growth and correction of macro-financial imbalances. The fiscal stimulus implemented in 2016 reduced the strength of the slowdown (GDP grew by 6.7%, as against 6.9% in 2015), but brought some of the adjustments under way to a standstill, with a further notable increase in credit and corporate debt.

2.2 THE EURO AREA ECONOMY AND THE MONETARY POLICY OF THE ECB

In 2016 the growth path of euro area GDP was extended, despite the weakness of foreign trade and growing geopolitical risks. Economic activity in the euro area remained on a path of recovery, despite an adverse external environment characterised by the weakness of global growth, especially in the first half of the year, and by growing geopolitical risks. The latter arose as a result of the persistence of wars in certain nearby countries, the threat of jihadist terrorism and, in the latter part of the year (as mentioned in the previous section), doubts over the direction of US economic policy.

GDP growth in the euro area was moderate, although relatively job intensive. GDP growth continued to be highly dependent on the boost to household and business spending provided by the expansionary monetary policy and low oil prices, although the increases recorded in the latter meant that this factor lost momentum as the year elapsed. Job creation improved somewhat, accelerating by 0.3 pp to 1.3%, against a background of sluggish wage growth, while, conversely, investment growth – taking into account the favourable financial conditions – was relatively modest. GDP grew by 1.7% in the year as a whole, slightly less than in 2015 (1.9%).

Structural unemployment, indebtedness and the situation of the financial system are constraints on growth. A number of factors are responsible for the fragility of the current recovery in the euro area. The more structural ones, which are broadly common to the advanced economies, include, notably, adverse demographic developments (which are giving rise to a significant slowdown in the growth of the working age population and tending to widen the gap between saving and investment) and the slowdown in technological progress, as reflected in moderate total factor productivity growth. In addition, in the euro area itself, the economic recovery is being hindered by high levels of structural unemployment (apparent in the high rates of long-term unemployment in certain economies), high levels of public and private-sector indebtedness built up during the crisis in a significant number of member countries and the weaknesses that continue to persist in the banking sector, with low levels of profitability, the build-up of non-performing assets on bank balance sheets and the recurrence of certain bouts of instability at the most vulnerable institutions. All this is compounded by the increase in political uncertainty, linked, in 2016, to the decision of the United Kingdom to leave the European Union and to the Italian referendum on constitutional reform and, in 2017, to the elections taking place in some of the largest euro area countries.

In the first half of 2016, the weakness of the recovery was accompanied by very moderate actual and expected inflation rates. The weakness of demand led to very low inflation rates for most of the year, while inflation expectations, according to the available indicators, continued to decline in the first half, to reach historical lows in the summer.

At the beginning of 2016, the Governing Council of the ECB reinforced the accommodative stance of its monetary policy by implementing a package of standard and non-standard measures. In March, the Governing Council approved a package of measures to further loosen financial conditions, to stimulate new lending and, in short, to speed up the return to inflation rates more in line with its medium-term target. The Governing Council thus first reduced the interest rate on its main refinancing operations (MROs) to 0%, and its deposit and marginal lending facility rates to -0.4% and 0.25%, respectively (where they have remained unchanged up to the date of publication of this Report). Second, in the context of the asset purchase programme (APP), the monthly volume of purchases was increased from €60 billion to €80 billion, the duration of the programme, until at least March 2017, was kept unchanged and the issue and issuer share limits were increased from 33% to 50% for those securities issued by international organisations and multilateral development banks. Third, in order to strengthen the transmission of the effects of asset purchases to financial conditions in the real economy, the launch in June of a new purchase programme for securities issued by non-bank corporations (CSPP) was announced, which has had a very favourable impact on the financing costs of this sector and has contributed to the recovery in the primary corporate debt market and to re-directing bank lending towards firms whose securities are not eligible for this programme.[2] Fourth, a new series of four targeted longer-term refinancing operations conditional upon expanding lending (TLTRO II), each with a fixed four-year maturity and interest payable at the MRO rate (i.e. currently 0%), with the possibility of a lower rate, between the MRO rate and the deposit facility rate (and thus a negative interest rate), for those institutions exceeding the lending benchmark.[3]

At the end of 2016 the asset purchase programme was recalibrated and extended to December 2017. The Governing Council of the ECB at its December meeting confirmed its previous decision to continue purchasing securities within the framework of the APP at a rate of €80 billion per month, in net terms, until March 2017, at the same time as announcing a new set of measures, including notably an extension of the programme for at least another nine months, to December 2017, with monthly purchases of €60 billion (see Chart 1.2).

The absence of signs of sustained convergence of inflation towards the medium-term reference of 2% and the prevalence of downside risks to growth justified the extension of the asset purchase programme. The increase in commodity prices has caused the general price index to rise from the summer, to 1.9% in April 2017, but core inflation has so far remained unaffected by this change in trend, the rise in the oil price having had no perceptible indirect effects on other prices. As regards costs, the degree of slack prevailing in the labour market (where unemployment is still around 10%, some 2.5 pp below its peak level during the crisis) suggests that wage moderation may persist, even

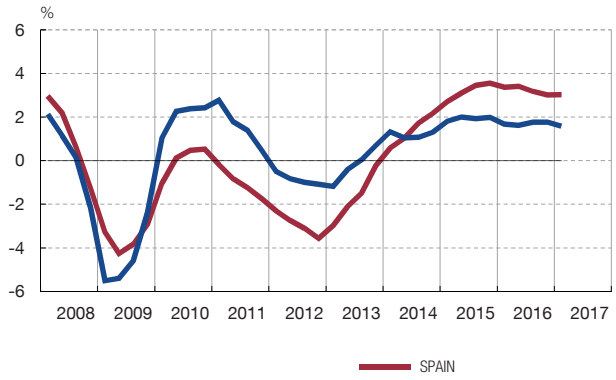
2 *Making room for the needy: The effects of the Eurosystem's Corporate Sector Purchase Programme*, by O. Arce, R. Gimeno and S. Mayordomo, Working Paper, Banco de España, forthcoming, analyses the effects of this Eurosystem programme on the financing conditions of Spanish firms.

3 Specifically, to obtain the benefit of the lowest rates, institutions must increase their eligible net lending (i.e. that to the non-financial private sector, excluding loans to households for house purchase) between 31 January 2016 and 31 January 2018 (or, if they reduced their eligible lending in the year to 31 January 2016, they must reduce it by no more than the same amount over the following two years).

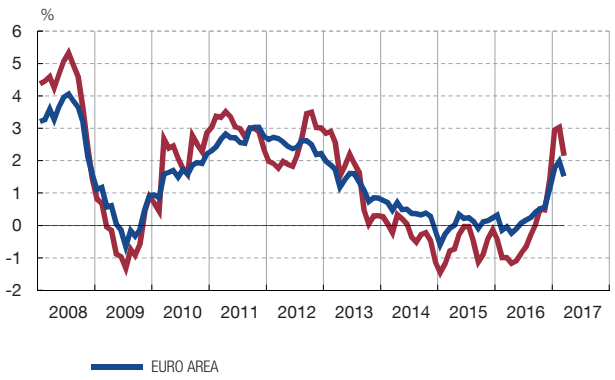
EURO AREA: GDP, INFLATION, INFLATION EXPECTATIONS AND EUROSYSTEM BALANCE SHEET

CHART 1.2

1 GROSS DOMESTIC PRODUCT (a)

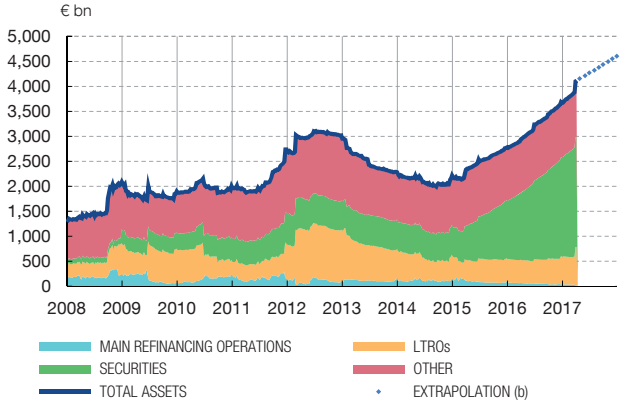


2 HARMONISED INDICES OF CONSUMER PRICES (a)



3 EURO AREA INFLATION EXPECTATIONS DERIVED FROM INFLATION-LINKED SWAPS

4 EUROSYSTEM BALANCE SHEET



SOURCES: Eurostat, INE, european Commission, ECB and Banco de España.

a Year-on-year rates of change in seasonally adjusted series for GDP and in original series for the consumer price indices.
b For the extrapolation, the latest observed balance sheet value is increased monthly on the basis of the securities acquisitions scheduled in the Expanded Asset Purchase Programme, while maintaining the observed rate of reduction of the portfolio of securities from the inactive programmes (SMP, CBPP and CBPP2).

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in economies, such as the German one, with lower rates of unemployment, and with no appreciable second-round effects on wages as a consequence of the rise in the oil price having been detected to date.

Forecasts suggest that growth will remain moderate in the medium term and that inflation will converge slowly towards the medium-term price stability target of monetary policy. The recovery in the euro area remains highly dependent on the support provided by monetary policy. According to some estimates,[4] monetary policy would explain up to 1.7 pp of the GDP growth and 1.5 pp of the HICP growth recorded between 2016 and 2019. Even so, GDP is forecast to grow at moderate rates, similar to those of 2016. As regards prices, inflation is expected to fall back below 2% in the second half of 2017, on the assumption that the prices of oil and other commodities will stabilise at around their current levels and that the recent rises will not lead to significant increases in other prices or in wages. The potential downside risks to which these inflation projections

4 These estimates are based on an update of those published in Chapter 3 of the 2015 Annual Report of the Banco de España.

are subject should have begun to level off in part, in line with the rise in the various market-based measures of inflation expectations observed since autumn 2016 (see Chart 1.2).

2.3 FIRMING OF THE RECOVERY IN THE SPANISH ECONOMY

In 2016 the Spanish economy grew by more than expected at the end of the previous year. The upswing in the Spanish economy that began in the second half of 2013 was sustained last year, with GDP growth, in the year as a whole, of 3.2%, the same rate as in 2015. Activity had a smooth profile over the year, and continued to do so in the initial stages of 2017. In addition, as in recent years, developments during 2016 proved to be more favourable than had been anticipated during the previous year, despite the domestic political uncertainty that prevailed during most of the year.[5] Specifically, GDP grew in 2016 by half a percentage point more than was projected at the end of 2015.[6] The behaviour of the various components of final demand – with the exception of government consumption and tourism – was less expansionary than expected, but imports grew significantly less than expected. Section 2.3.1 analyses the factors contributing to the favourable behaviour of activity during the recovery. Subsequently, Section 2.3.2 reviews in detail the main aspects of Spain's economic performance in 2016.

2.3.1 Factors responsible for the current upswing

The strength of the current recovery is partly a result of the impact of certain predominantly temporary factors, such as the expansionary stance of demand policies and the decline in the price of oil. The strength of the recovery during the three-year period 2014-2016 was greater than expected. When the projections for this period made by the Banco de España in spring 2014 (when the recovery was beginning to take hold) are compared with the data eventually observed, it can be seen that GDP grew by a total of 3.2 pp more than was projected.[7] This deviation is partly explained by a very diverse set of factors, characterised by a certain degree of transitoriness, including a demand (fiscal and monetary) policy stance that was clearly more expansionary than projected and a notably lower oil price path. In contrast to these factors, which tended to boost activity, Spain's export markets proved to be less dynamic than was expected almost three years ago. Box 1.2 presents an estimate of the overall effect of these factors on GDP growth which, at 2.2 pp, would explain somewhat more than two-thirds of the 3.2 pp forecasting error in the mid-2014 projections for the period 2014-2016.

These factors, along with some other more permanent ones, explain why growth was higher than in the euro area as a whole. Moreover, as explained in Box 1.2, the impact of these temporary factors appears to have been greater in Spain than in the euro area as a whole. In conjunction with some other more permanent factors, this would explain why during the period considered GDP growth was higher in Spain than in the euro area. As regards factors with a more lasting impact, partly associated with the previous implementation of various reforms, the role played by the re-establishment of competitiveness relative to the euro area, in terms of labour and financial costs, is notable. This development would largely explain the sequence of the recovery, initially characterised by buoyant exports, with the components of national demand coming into play later, as analysed in detail in Chapter 2 of the 2015 Annual Report.

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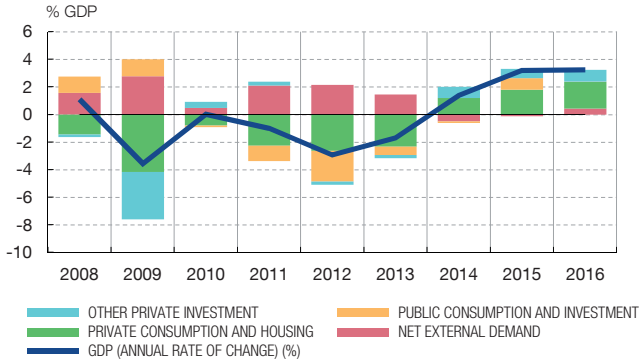
5 For a quantification of the impact of these uncertainties, see M. Gil, J. Pérez and A. Urtasun (2017) "Macroeconomic uncertainty: measurement and impact on the Spanish economy", *Economic Bulletin,* 1/2017, Banco de España.

6 See the "Quarterly report on the Spanish economy", *Economic Bulletin*, Banco de España, December 2015.

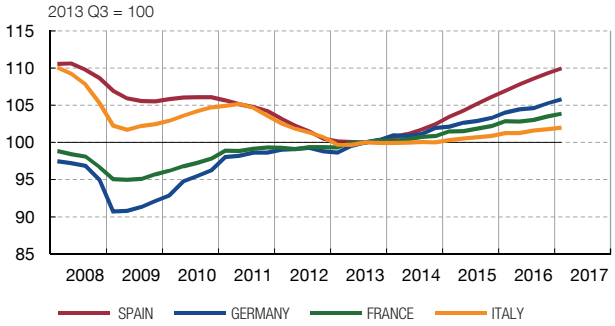
7 The choice as starting point of the contribution of the Banco de España to the Eurosystem's joint projection exercise of June 2014 is justified because these were the first projections to include 2016 in the forecast horizon. This means that the complete period of the recovery is not considered, since it had begun several quarters previously. However, it was still in its relatively early stages.

SPAIN: GDP AND ITS COMPOSITION, AND INTERNATIONAL COMPARISON CHART 1.3

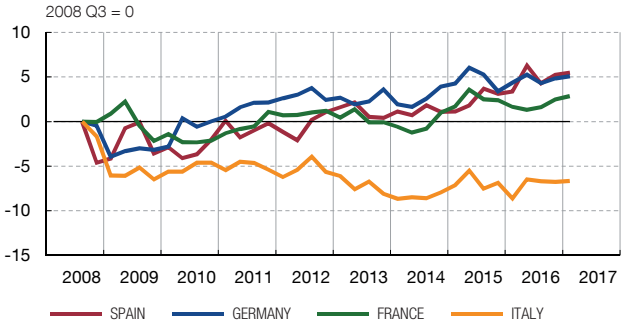
1 GDP, NATIONAL DEMAND COMPONENTS AND EXTERNAL DEMAND
Annual rates of change and contributions to growth



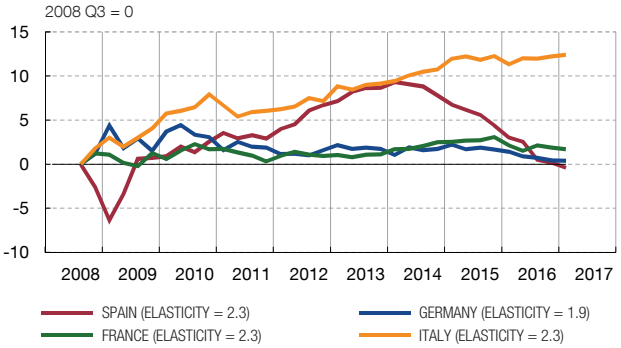
2 GDP
Real levels



3 CUMULATIVE EXPORT GROWTH RELATIVE TO GROWTH IN EXPORT MARKETS (a)



4 CUMULATIVE GROWTH IN IMPORTS RELATIVE TO GROWTH ESTIMATED ON THE BASIS OF FINAL DEMAND (b)



SOURCES: INE and Banco de España.

a The line for each country represents the difference between the cumulative growth in goods and services exports and the cumulative growth in the foreign markets in which they are sold.
b The line for each country represents the difference between the actual growth of imports in cumulative terms and the growth derived from the historical relationship between imports and final demand (its scale variable). The relevant elasticity value is indicated in the legend after the name of each country.

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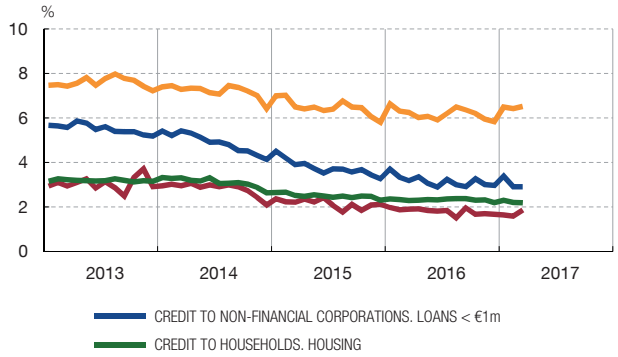
The price and cost competitiveness improvements have also helped to boost output growth and to achieve external surplus. Since the start of the recovery in 2013 GDP growth in Spain has exceeded that recorded by each of the three largest euro area economies (see the top right-hand panel of Chart 1.3). From the viewpoint of the contributions of the various demand components, this has been mainly due to the recovery in domestic demand, but also to the more favourable behaviour of net external demand in the case of the Spanish economy. Specifically, if the increase in the exports of each of the four countries during this period is compared with the growth of their respective external markets, the highest relative increase can be seen to have occurred in Spain (see the bottom left-hand panel of Chart 1.3). Turning to purchases from abroad, Spanish imports have grown since the end of 2013 by some 8 pp less than would be expected given their historical relationship to final demand. This departure from the historical relationship was not observed in the other countries of the sample and may indicate that a process of import substitution began in this period, linked to competitiveness gains (see the bottom right-hand panel of Chart 1.3).[8]

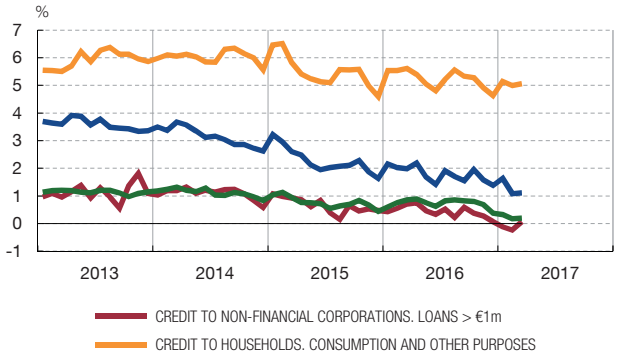
8 This gap between actual imports and those predicted on the basis of the growth of final demand is maintained when the various components are allowed to have different weights in the construction of this latter variable according to their respective import content.

FINANCING CONDITIONS IN THE SPANISH ECONOMY CHART 1.4

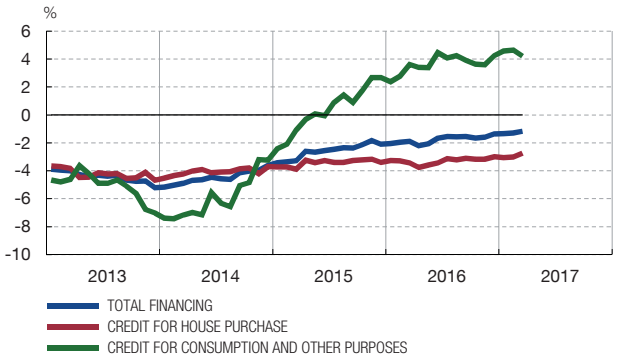
1 BANK LENDING RATES. SPAIN



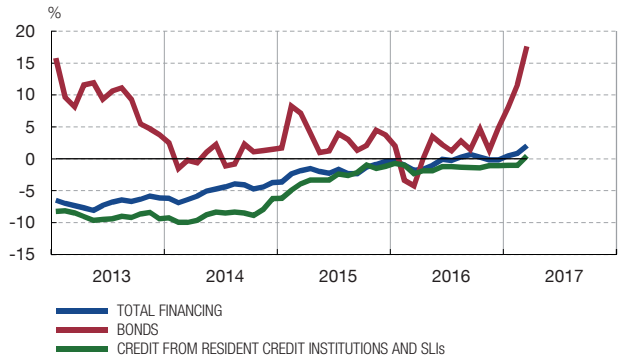
2 REAL BANK LENDING RATES (a). SPAIN



3 FINANCING OF HOUSEHOLDS
Year-on-year rates of change



4 FINANCING OF NON-FINANCIAL CORPORATIONS (b)



SOURCES: ECB and Banco de España.

a The real interest rates were calculated by deducting from the nominal rates inflation expectations at different horizons obtained from inflation-linked swaps for Spain. For credit for house purchase, the 15-year term was used; for credit for consumption and other purposes, the 5-year term; and for credit to non-financial corporations, the 10-year term.
b Includes loans granted by resident credit institutions and specialised lending institutions, bonds issued by non-financial corporations and their resident subsidiaries and loans from abroad.

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2.3.2 The Spanish economy in 2016

In 2016, financial conditions continued to support private spending. In terms of the nominal rates institutions apply to their loans, further declines were observed in most segments, although they were less pronounced than in the preceding years (see Chart 1.4). Funding conditions on wholesale markets also improved until the autumn, favoured by the extension, from June, of the asset purchase programme of the European Central Bank to include corporate debt, which led in the case of large firms to some substitution of fixed-income securities for bank lending, given the relative path of the cost of these two funding mechanisms, as analysed in detail in Chapter 2 of this Report.[9] In addition, the Survey on the Access to Finance of enterprises in the euro area (SAFE) and the bank lending survey (BLS) show an improvement in access to credit for households and businesses alike.[10]

The benign financial conditions were conducive to the growth of new lending to households and businesses and to private spending. In the second half of the year, however, a certain slowdown in lending activity was observed, linked to demand factors

9 See S. Mayordomo (2016), «El programa de compras de bonos corporativos del Eurosistema y su efecto sobre la financiación ajena de las sociedades no financieras españolas», *Boletín Económico*, Banco de España.
10 For further details see A. Menéndez, "Encuesta sobre Préstamos Bancarios en España: enero de 2017", *Boletín Económico*, Banco de España, 1/2017, and Box 6, *Economic Bulletin*, Banco de España, June 2016.

and in the particular case of large firms, as mentioned above, to their greater preference for fixed-income security funding.[11] In any event, the growth in new flows of external financing caused the contraction in outstanding debt of households in business to moderate gradually during the year (see Chart 1.4). The reduction in debts, along with the growth in income and the moderation in average financing costs, led to a further decline in the debt and debt burden ratios of both sectors.

The financing received by credit institutions saw further improvements. During the year, credit institutions perceived an improvement in the conditions of access to wholesale funding markets and no change in those for retail markets. These developments were favoured by monetary policy measures. Thus, according to the replies of institutions to the BLS, the liquidity obtained through asset purchase programmes and TLTROs helped to improve their financial position, in terms of financing conditions, liquidity and profitability. According to this same source, such measures contributed to easier conditions on loans to households and, to a greater extent, on those to businesses.[12]

Household spending, boosted by a strong rate of job creation, was highly buoyant. The behaviour of household spending on consumer goods and services was expansionary in 2016, with growth of 3.2%, 0.3 pp more than in 2015 (see Table 1.1). As in the previous year, private consumption was driven by the buoyancy of job creation, against a background of nominal compensation moderation (see Chart 1.5).[13] In the later stages of 2016 and in early 2017 the strength of private consumption was sustained, without the negative impact of the reduction in household purchasing power stemming from the rise in oil prices having been significant to date. That said, there seem to be signs of a gradual tail-off in the strong pick-up in spending on durable goods observed during the initial stages of the recovery.[14]

The improvement in the financial position of households and the decline in their debt burden also contributed to the buoyancy of household spending. The continuation of the decline in interest rates also had a favourable impact on consumption, insofar as the marginal propensity to consume of net savers is presumably lower than that of debtor agents, since the latter are more likely to be subject to liquidity constraints. Moreover, the increase in the value of total household wealth (of 3.5%, which stemmed from both the real and financial components), as well as the reduction in the debt burden and indebtedness (of 0.4 and 4.9 pp, respectively, of disposable income), contributed to the buoyancy of private consumption.

The households sector continues to finance the economy in net terms. Household consumption grew somewhat more strongly than household income, so that the proportion of the latter devoted to saving fell by 0.5 pp, to 7.7%. Residential investment displayed moderate growth, similar to that seen in 2015, which enabled household saving to continue to exceed total household spending. Specifically, household net lending stood at 1.9% of GDP, somewhat below the average level observed since the start of the crisis. If, against a background of lower

11 For further details of the recent process of disintermediation of the financing of Spanish non-financial firms, see Chapter 2 of this Report.

12 In particular, non-financial corporations, which have little option of issuing fixed income securities, indicated in their replies to the SAFE that their access to credit improved over the year, and that they did not perceive this factor as being an obstacle to developing their business.

13 The available evidence, from aggregate consumption functions and macroeconomic data, suggests that the marginal propensity to consume an additional unit of income arising from an increase in employment is greater than when it arises from an increase in real wages, since labour income arising from employment is more likely to amount to an increase in permanent income (see Chapter 2, 2015 Annual Report, Banco de España).

14 The data on private vehicle registrations suggest this to be the case.

MAIN INDICATORS OF THE SPANISH ECONOMY (a)

TABLE 1.1

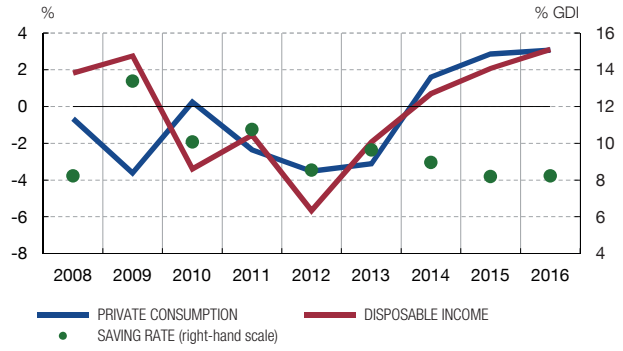
	2011	2012	2013	2014	2015	2016
Demand and output (b)						
GDP	-1.0	-2.9	-1.7	1.4	3.2	3.2
Private consumption	-2.4	-3.5	-3.1	1.6	2.9	3.2
Government consumption	-0.3	-4.7	-2.1	-0.3	2.0	0.8
Gross capital formation	-7.2	-9.5	-4.6	5.4	6.5	3.8
Investment in equipment	0.8	-6.2	4.9	8.1	8.8	5.0
Construction investment	-11.7	-12.3	-8.6	1.2	4.9	1.9
Housing	-13.3	-10.3	-10.2	6.2	3.1	3.7
Other construction	-10.2	-13.9	-7.3	-2.6	6.4	0.4
Exports of goods and services	7.4	1.1	4.3	4.2	4.9	4.4
Imports of goods and services	-0.8	-6.4	-0.5	6.5	5.6	3.3
Contribution of national demand to GDP growth	-3.1	-5.1	-3.2	1.9	3.3	2.8
Contribution of net external demand to GDP growth	2.1	2.2	1.5	-0.5	-0.1	0.5
Employment, wages, costs and prices (c)						
Total employment	-2.8	-4.8	-3.4	1.1	3.0	2.9
Employment rate (d)	58.8	56.5	55.6	56.8	58.7	60.5
Unemployment rate	21.4	24.8	26.1	24.4	22.1	19.6
Compensation per employee	0.9	-0.6	1.4	0.0	0.4	0.0
Apparent labour productivity	1.8	2.0	1.8	0.3	0.2	0.4
Unit labour costs	-0.9	-2.5	-0.4	-0.3	0.2	-0.4
GDP deflator	0.0	0.1	0.4	-0.3	0.5	0.3
Consumer price index (end of period)	2.4	2.9	0.3	-1.0	0.0	1.6
Consumer price index (annual average)	3.2	2.4	1.4	-0.2	-0.5	-0.2
Consumer price differential with the euro area (HICP)	0.3	-0.1	0.2	-0.6	-0.7	-0.1
Net lending (+) or net borrowing (-) and financial balance (e)						
Resident sectors: domestic net lending (+) or net borrowing (-)	-2.9	0.1	2.1	1.5	2.0	2.0
General government	-9.6	-10.5	-7.0	-6.0	-5.1	-4.5
General government (excluding aid to financial institutions)	-9.3	-6.8	-6.7	-5.9	-5.1	-4.3
Households and NPISHs	2.6	2.2	4.0	3.2	2.5	1.9
Firms	4.1	8.3	5.1	4.2	4.6	4.7
Financial institutions	2.1	6.9	2.2	2.3	1.7	1.9
Non-financial corporations	2.1	1.4	2.9	1.9	2.8	2.8
Net international investment position	-91.9	-89.9	-94.3	-97.5	-91.3	-85.7
General government gross debt	69.5	85.7	95.4	100.4	99.8	99.4
Monetary and financial indicators (f)						
ECB minimum bid rate on MROs	1.3	0.9	0.5	0.2	0.1	0.0
Ten-year government bond yield	5.4	5.8	4.6	2.7	1.7	1.4
Synthetic bank lending rate	4.1	4.1	4.1	3.8	2.9	2.7
Madrid Stock Exchange General Index (Dec 1985 = 100)	971.8	767.5	879.8	1,066.6	1,080.5	879.2
Dollar/euro exchange rate	1.4	1.3	1.3	1.3	1.1	1.1
Nominal effective exchange rate vis-à-vis developed countries (g)	101.6	100.2	101.5	101.5	99.3	99.9
Real effective exchange rate vis-à-vis developed countries (h)	113.8	107.3	106.9	105.9	103.3	102.7
Real effective exchange rate vis-à-vis the euro area (h)	111.6	106.5	104.7	103.7	103.7	102.6
Households: total financing	-2.4	-3.8	-5.2	-3.6	-2.1	-2.0
Non-financial corporations: total financing	-2.0	-6.4	-6.1	-3.7	-0.4	-0.4

SOURCES: INE, IGAE, AMECO and Banco de España.

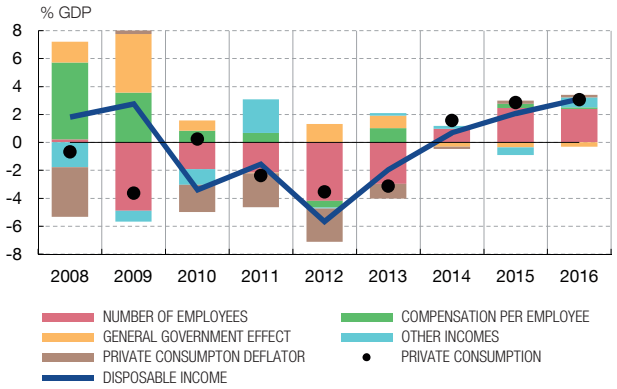
a Spanish National Accounts data, base year 2010.
b Volume indices. Annual rate of change.
c Rate of change, except the unemployment rate, which is a level.
d Employment rate (16-64).
e Levels as a percentage of GDP.
f Annual average levels for the Madrid Stock Exchange General Index, interest rates and exchange rates, and rates of change for financial liabilities.
g 1999 Q1 = 100.
h 1999 Q1 = 100. Measured with unit labour costs.

SPAIN: HOUSEHOLD CONSUMPTION, INCOME AND SAVING CHART 1.5

1 PRIVATE CONSUMPTION AND DISPOSABLE INCOME
Real annual rates of change



2 PRIVATE CONSUMPTION AND DISPOSABLE INCOME
Contributions to the real annual rate of change



SOURCES: INE and Banco de España

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real income growth, the relatively high spending growth rates are to be sustained in 2017, the saving ratio and household net lending will have to decline somewhat further.

The generation of high levels of income by non-financial corporations underpinned their investment spending. Business investment in 2016 was somewhat weaker than in the previous year, with estimated growth of close to 6%[15], in a context of growth in final demand and in capacity utilisation. As explained in Chapter 2 of this Report, financial factors continue to play a very significant role in the growth of this aggregate. In particular, business investment was spurred by the continued dynamism of the income of non-financial corporations, based on the notable growth of the gross operating surplus, which was in turn related to the moderation in personnel costs, the low level of oil prices and the decline in financial expenses mentioned above. Also, the restructuring of business balance sheets has facilitated access to external funding.[16]

The availability and cost of external financing were also favourable to business investment. The rates of change in the total financing received by non-financial corporations became progressively less negative. In parallel, the financial position of the sector strengthened, with a reduction in its debt and debt burden ratios. The solid generation of own funds, the availability of low-cost external financing and the improved financial position of companies mitigated the possible contractionary effects arising from the uncertainty over the direction of economic policy that prevailed for most of the year. In 2016, non-financial corporations as a whole once again recorded positive net lending, as they have in each year since the start of the crisis, reflecting the net deleveraging that has been taking place.[17] In 2016, the surplus of the sector amounted to 2.8% of GDP, unchanged from the previous year, with rises of 0.7 pp in its saving and investment ratios.

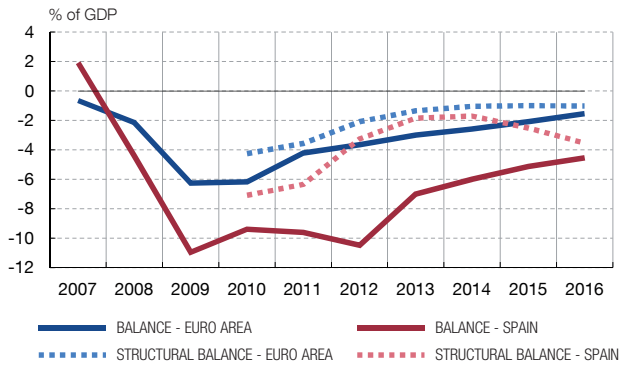
Fiscal policy, as in 2015, was expansionary, although economic growth enabled the debt-to-GDP ratio to decrease slightly. Government consumption grew by 0.8% in real

15 The figure of non-financial corporations' investment in real terms is not provided by the National Accounts. It must thus be estimated on the basis of the information available for investment spending by this sector in nominal terms and for the deflators of the different components of gross capital formation.
16 See Box 2.2 of Chapter 2 of this Report.
17 See Chapter 2 of this Report.

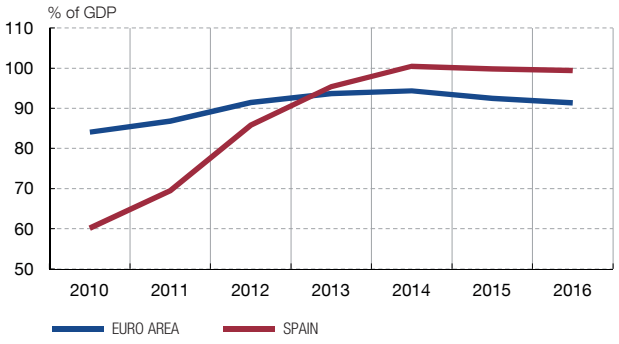
GENERAL GOVERNMENT BALANCE AND DEBT

CHART 1.6

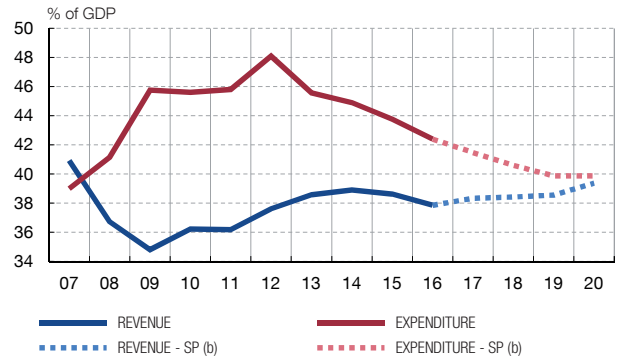
1 ACTUAL BALANCE AND STRUCTURAL BALANCE (a)



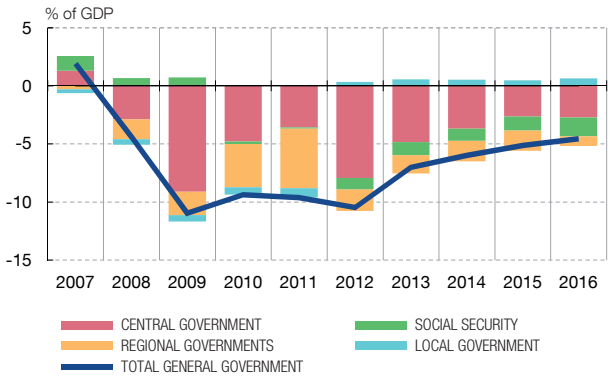
2 EXCESSIVE DEFICIT PROTOCOL (EDP) DEBT



3 GENERAL GOVERNMENT REVENUE AND EXPENDITURE



4 GENERAL GOVERNMENT BALANCE BY SUBSECTOR



SOURCES: AMECO and Banco de España

a The cyclically-adjusted actual balance, net of temporary measures.
b Stability Programme (SP) projections.

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terms in 2016, 1.2 pp less than in 2015. Unlike in the private sector, the resources of general government were insufficient to finance its spending, leading to a deficit of 4.5% of GDP, 0.6 pp less than in 2015 (see Chart 1.6). In particular, there were reductions in the public revenue and, to a greater extent, public spending ratios. In the case of the former ratio this was mainly due to the impact of the reform of direct taxation, while in that of the latter one there was a notable reduction in government consumption as a percentage of GDP, with decreases in expenditure on goods and services and on compensation of employees. Lower government dissaving and the decline in the public investment ratio both contributed to the fall in general government net borrowing as a proportion of GDP. This was solely due to the improved cyclical position of the economy, since, according to the latest European Commission estimates, the structural primary deficit (which measures the fiscal policy stance) deteriorated by 1.3 pp, 0.1 pp more than recorded a year earlier. Thus, in 2016, budgetary policy was expansionary for the second year running. The total structural deficit deteriorated by 1.8 pp between the beginning of 2015 and the end of 2016, to 3.5% of GDP, its highest level since 2011 (see Chart 1.6). Meanwhile, the strong GDP growth more than offset the effects of the still-high deficit on the public debt-to-GDP ratio, reducing it slightly, to 99.4% (0.4 pp less than in 2015).

The improvements in the cyclical position and in the interest burden facilitated achievement of the budget deficit target, which had been revised upwards by the

European authorities in August. The actual deficit was 0.1 pp lower than the new target of 4.6% of GDP set by the European Council in August in the context of the excessive deficit procedure of the Stability and Growth Pact.[18] The relaxation of the budget target, from the initial level of 2.8% of GDP, accommodated the deviations anticipated, in particular, in public revenue. The European Council requested the adoption of appropriate measures in the event that risks of overshooting the new target were detected, which led to the approval of certain adjustment measures, such as the reinstatement of minimum amounts for advance payments of corporate income tax. By subsector, the reduction in the aggregate deficit mainly stemmed from the adjustment in the regional government deficit of 0.9 pp of GDP, given that the deficits of central government and of the Social Security System each deteriorated by 0.1 pp and the local government surplus increased by 0.1 pp (see lower right-hand panel of Chart 1.6).

Exports remained notably strong, with a very positive performance by tourism. Sales abroad of goods and services grew by 4.4% in 2016, 0.5 pp less than in the previous year. However, this slowdown was less marked than that in the growth of foreign markets, which grew by 1.6 pp less than in 2015. The favourable behaviour of the Spanish economy's sales abroad last year is all the more notable in the light of the increase of only 2.7% in this variable in the euro area as a whole. The factors underlying this favourable performance by Spanish exports are analysed in Chapter 3 of this Report. Among the various items of this aggregate, the performance of inbound tourism was notable. This is a very labour intensive sector, whose strength in 2016 reflected a number of different factors. Some of these are to a certain degree transitory, such as the buoyancy of some of the traditional tourism-generating markets (and, in particular, the small initial impact of the depreciation of the pound on the British market), the boom in tourists from markets that have until now been less established (like Asia and Latin America) and the security problems in certain alternative destinations, while others are more persistent, such as the improvements in the price competitiveness of the national tourist industry, a factor which would explain around one-third of the total growth in tourism exports in 2016.[19]

The key development in relation to the external sector was the moderation in the growth rate of imports. Purchases from abroad grew by 3.3%, a very low rate considering that it is approximately the same as the growth rate of final demand and that the elasticity of the former with respect to the latter is normally estimated to be about two. Section 4.2 of Chapter 3 of this Report provides evidence to suggest that the bulk of the moderation in the growth of imports stemmed from imports of non-energy intermediate goods, whose weight in total output has fallen significantly in various manufacturing industries, such as the automotive sector. The evidence at the microeconomic level, of a declining proportion of Spanish firms' total inputs that are imported, is consistent with this.[20]

In 2016, the net lending of the economy as a whole remained high, partly due to factors that are expected to be temporary. Last year, the net lending of the economy stood at 2% of GDP, the same level as in the previous year (see Chart 1.7). With respect to 2015, the goods and services balance increased by 0.5 pp. Of this increase, some two-thirds is attributable to the higher growth in real exports with respect to imports, while the rest is due to the improvement in the terms of trade, i.e. the difference between the growth rates of export and import prices, a development that is strongly linked to the changes in

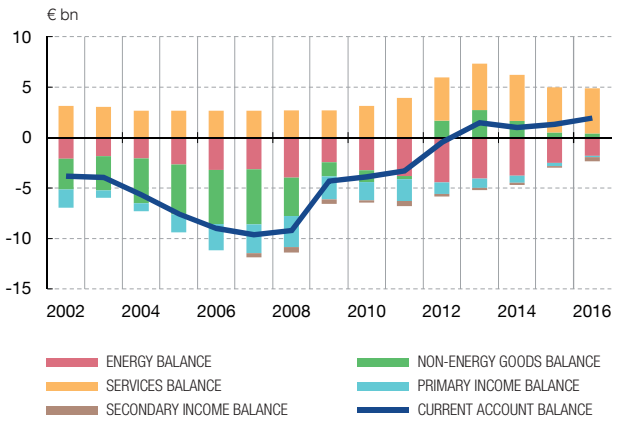
18 Excluding assistance to the financial institutions sector, the deficit was 4.3% of GDP.

19 See Box 7, "Quarterly Report on the Spanish Economy", *Economic Bulletin*, Banco de España, 1/2017.

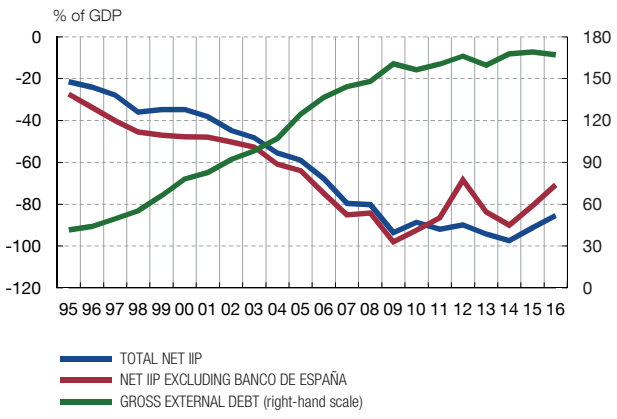
20 See Chapter 2, 2015 Annual Report, Banco de España and E. Prades and C. Villegas-Sánchez (2017), *"Input trade and importers in Spain"*, Working Paper, forthcoming.

SPAIN: CURRENT-ACCOUNT BALANCE AND NEGATIVE EXTERNAL POSITION CHART 1.7

1 CURRENT ACCOUNT BALANCE



2 NET INTERNATIONAL INVESTMENT POSITION (IIP) AND GROSS EXTERNAL DEBT (a)



SOURCE: Banco de España.

a Gross external debt is the amount pending repayment at a given time of real and non-contingent current liabilities assumed by an economy's residents vis-à-vis non-residents, with the commitment to make future payments of principal and/or interest. It therefore includes: debt securities, allocated special drawing rights, deposits, loans, trade credit and other liabilities.

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the prices of oil and other non-energy commodities. As analysed in Chapter 3, the path of the external balance is determined by diverse factors, including temporary ones and other more persistent ones, relating to external competitiveness improvements and certain changes in the productive structure or in world demand for different products.[21] In this context, the improvement in the terms of trade is fundamentally temporary in nature, tending to reverse when the oil price rises. In fact, the path of oil prices in futures markets considered in the projections of the Banco de España of last March would result in an increase in the energy bill of some 0.4 pp of GDP this year.[22] In addition, in the current account components there was a decline in the negative income balance (of 0.1 pp) in 2016, as a consequence of the decline in interest rates.

From a sectoral point of view, industry has recovered strongly in recent years, although only services have exceeded their pre-crisis level of activity. The recovery in industry from the cyclical trough has been stronger than that in services, with growth in their respective value added of around 10% and 8% (see Chart 1.8). However, only services have exceeded their pre-crisis level, by some 6 pp. Within services, professional activities and information and communication have been especially vigorous. A comparison with other euro area countries shows that the increase in value added in industry in Spain, since mid-2013, has been more than 4 pp higher than in Germany and approximately 8 pp higher than in France and Italy.

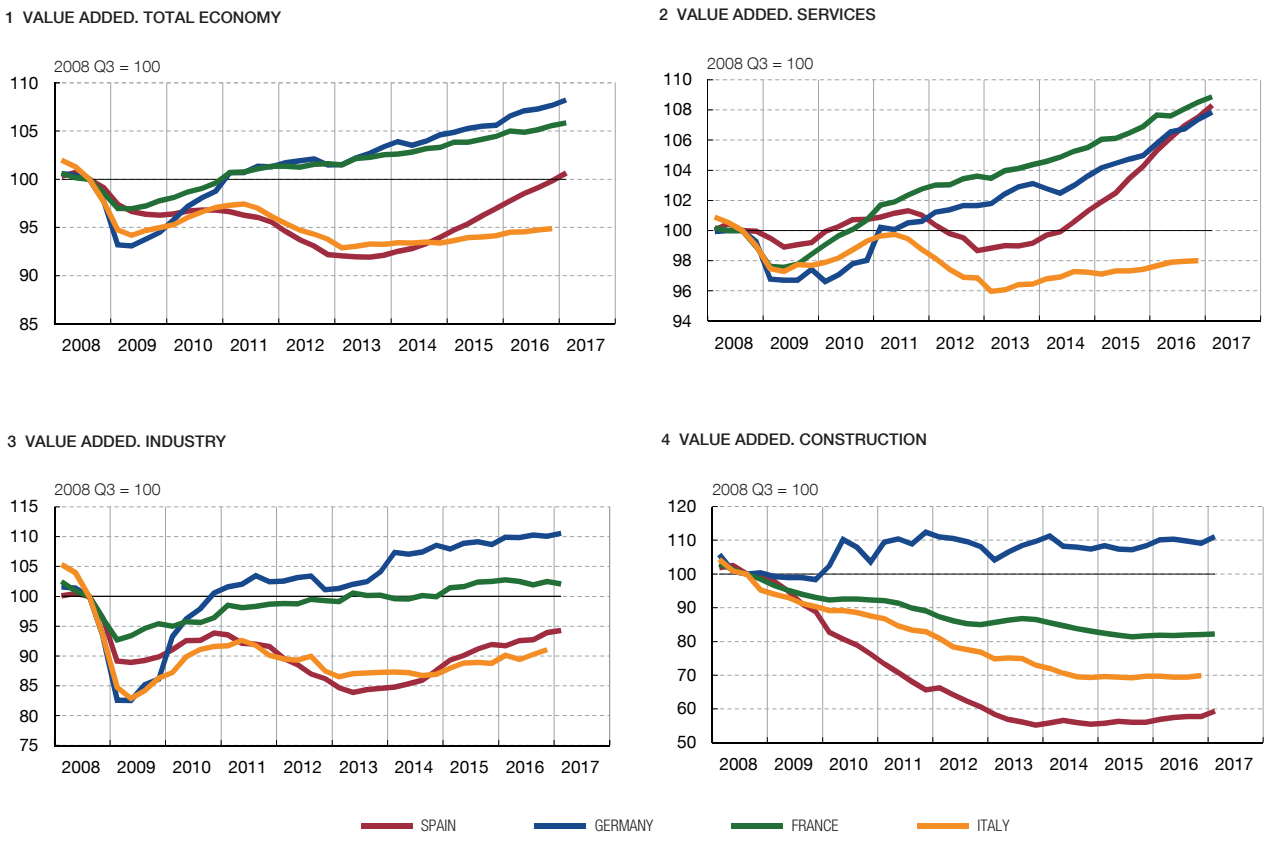
The strong employment growth in recent years has enabled a considerable part of the job losses since 2008 to be recovered, although employment is still well below its pre-crisis level. Between the end of 2013 and the end of 2016 almost 1.4 million new jobs were created, which means that almost half of the jobs destroyed during the crisis have been recovered. However, although aggregate activity will foreseeably reach its pre-crisis

21 In particular, as indicated in Chapter 3 of this Report, approximately half of the correction of the current account balance between 2008 and 2015 would be explained by the business cycle and the decline in oil prices.

22 These figures correspond to the €9 rise in the average price of a barrel of oil in 2017, with respect to 2016, given the elasticities estimated in Box 1.2, 2014 Annual Report, Banco de España.

VALUE ADDED BY COUNTRY AND SECTOR

CHART 1.8



SOURCES: INE and Banco de España.

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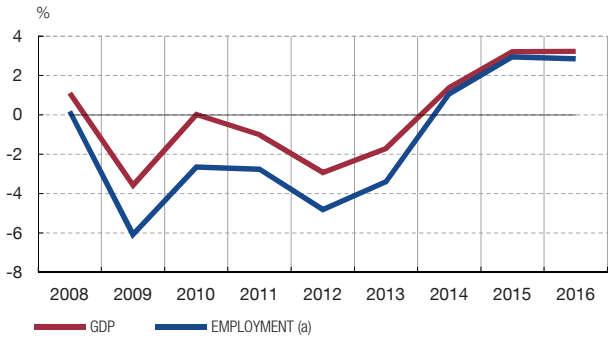
level in mid-2017, employment at the end of 2016 was still, according to the Spanish Labour Force Survey (EPA), 10.4% below its mid-2008 peak.

The services sector has been more dynamic in terms of job creation. The creation of new jobs during the recovery has been heavily concentrated in services activities, both in market services, principally accommodation and food service activities, trade, and to a lesser extent, transport activities, and in non-market services (education and health). In construction and industry, employment is still only 42% and 79%, respectively, of its pre-crisis levels.

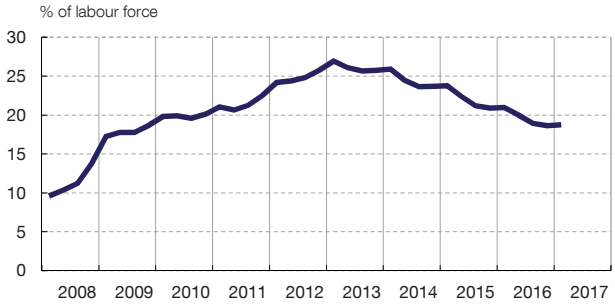
In accordance with the usual cyclical pattern, there were large increases in apparent labour productivity during the crisis, followed by a notable slowdown during the recovery. The growth of this variable in the Spanish economy is markedly countercyclical, with strong increases during recessions and very low (or even negative) growth during upturns. In accordance with this pattern, there was a broad-based increase in apparent labour productivity during the last recession, concentrated in industries employing relatively lower skilled workers, while, during the current recovery phase, this variable has moderated significantly, the changes in the sectoral composition of the economy not having been conducive to its buoyancy. In this context, the largest productivity gains have been recorded by industry and, within services, by trade, transport, accommodation and food service activities and professional services. In any event, total factor productivity is making a greater contribution to apparent productivity growth than in previous recoveries and, should it continued to do so, this would indicate an improvement in the economy's efficiency.

SPAIN: LABOUR MARKET DEVELOPMENTS CHART 1.9

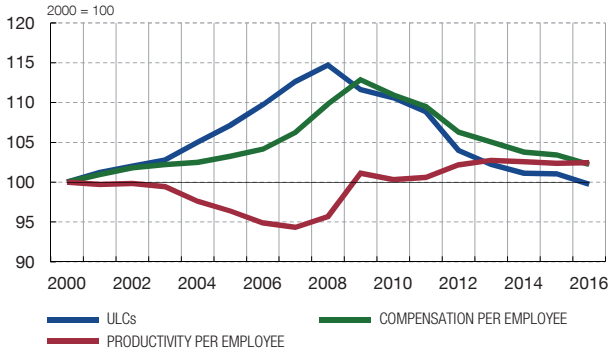
1 GDP AND EMPLOYMENT
Annual rates of change



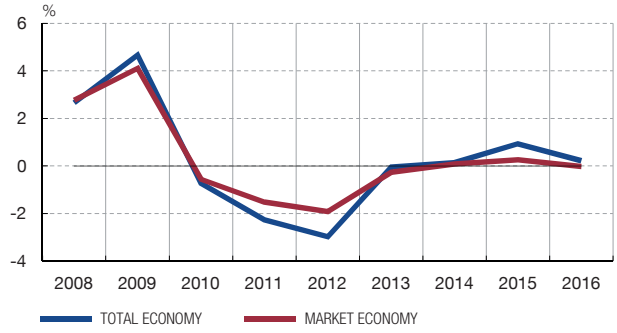
2 RATE OF UNEMPLOYMENT



3 UNIT LABOUR COSTS IN SPAIN RELATIVE TO THE EURO AREA



4 REAL WAGES (b)
Annual rates of change



SOURCES: Eurostat and INE.

a Full-time equivalent jobs.
b QNA nominal compensation per employee deflated by the CPI.

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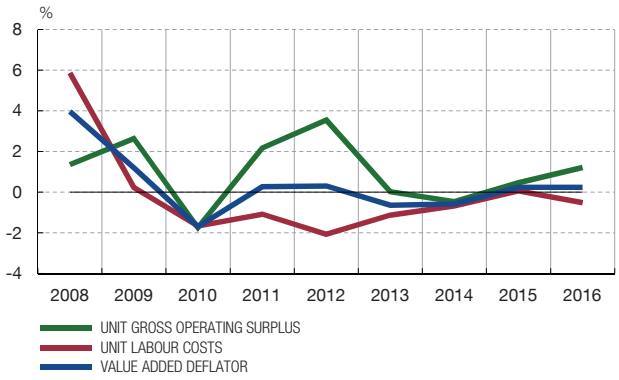
The rate of unemployment is falling rapidly, although the level of unemployment remains very high. In 2016, employment grew by 2.9%. Given the slight decline in the labour force, this strong rate of job creation was able to reduce the rate of unemployment to 18.75% in 2017 Q1, 8.2 pp below the peak reached at the beginning of 2013 (see Chart 1.9). Despite this decline, the current level of unemployment is still significantly higher than in most euro area countries.

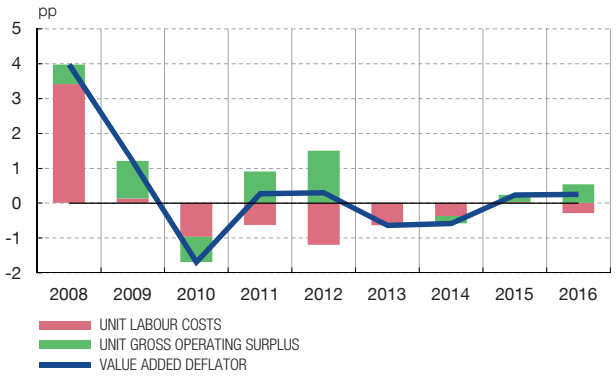
The upward trend in the temporary employment ratio has resumed. Since the end of 2013, 54% of all new jobs have been temporary ones. Specifically, this form of employment grew by 6.8% in 2016, 5 pp more than permanent employment, broadly reflecting the usual pattern in the Spanish economy during cyclical recoveries. As regards employment destruction, losses of temporary jobs appear to have returned to around their pre-2008 levels, although labour turnover among temporary workers remains at high levels, with outflows from temporary employment to unemployment still above their pre-crisis levels. The overall result of this behaviour is that temporary employment was 26.5% of total paid employment, 4.5 pp above the low reached in early 2013, but still well below the level reached in 2007, at the end of the previous upswing (31.6%). By contrast, part-time employment, which increased sharply when the crisis was most acute, has been less buoyant since 2014, most of the jobs created since the end of 2013 having been full-time ones.

SPAIN: MARKET ECONOMY VALUE ADDED DEFLATOR AND ITS COMPONENTS CHART 1.10

1 MARKET ECONOMY VALUE ADDED DEFLATOR



2 MARKET ECONOMY VALUE ADDED DEFLATOR
Contribution to annual rate of change



SOURCES: INE and Banco de España.

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Significant employment creation took place against a background of continued wage moderation. In the economy as a whole, compensation per employee posted zero growth in 2016 (see Chart 1.9). In the private sector, compensation declined by 0.2%, a similar rate to the past two years. Given the decrease of the same magnitude in consumer prices, this meant that real wages were constant. The moderation in labour remuneration was attributable to two factors. First, the limited growth of wages in collective agreements (1.2% on average). Settlements were moderate even in newly signed agreements and, despite the ongoing improvement in employment and the ease in inflation during the year, the latter settlements did not increase as the year elapsed, probably reflecting the still high level of unemployment.[23] Second, newly hired employees were paid a lower average wage than existing employees, which contributed to negative wage drift of somewhat more than 1 pp.[24]

Price competitiveness indicators continue to improve, despite the expansionary behaviour of the profit margin. The Spanish economy continued to make competitiveness gains relative to the euro area in 2016, both in terms of unit labour costs and the value-added deflator, albeit at a slower rate than in previous years (see Chart 1.10). The profit margin behaved countercyclically over the period 2008-2013, when it generally followed an upward path, partly associated with the need for businesses to improve their financial position, against a background of higher borrowing costs and greater difficulty accessing borrowed funds.[25] Subsequently, in the period 2014-2015, the growth rate of this variable slowed to a rate in line with unit labour costs. However, in 2016 there was a further rise, which may be indicative of insufficient competition in some markets, against a background of rising demand pressures (see Chart 1.10).

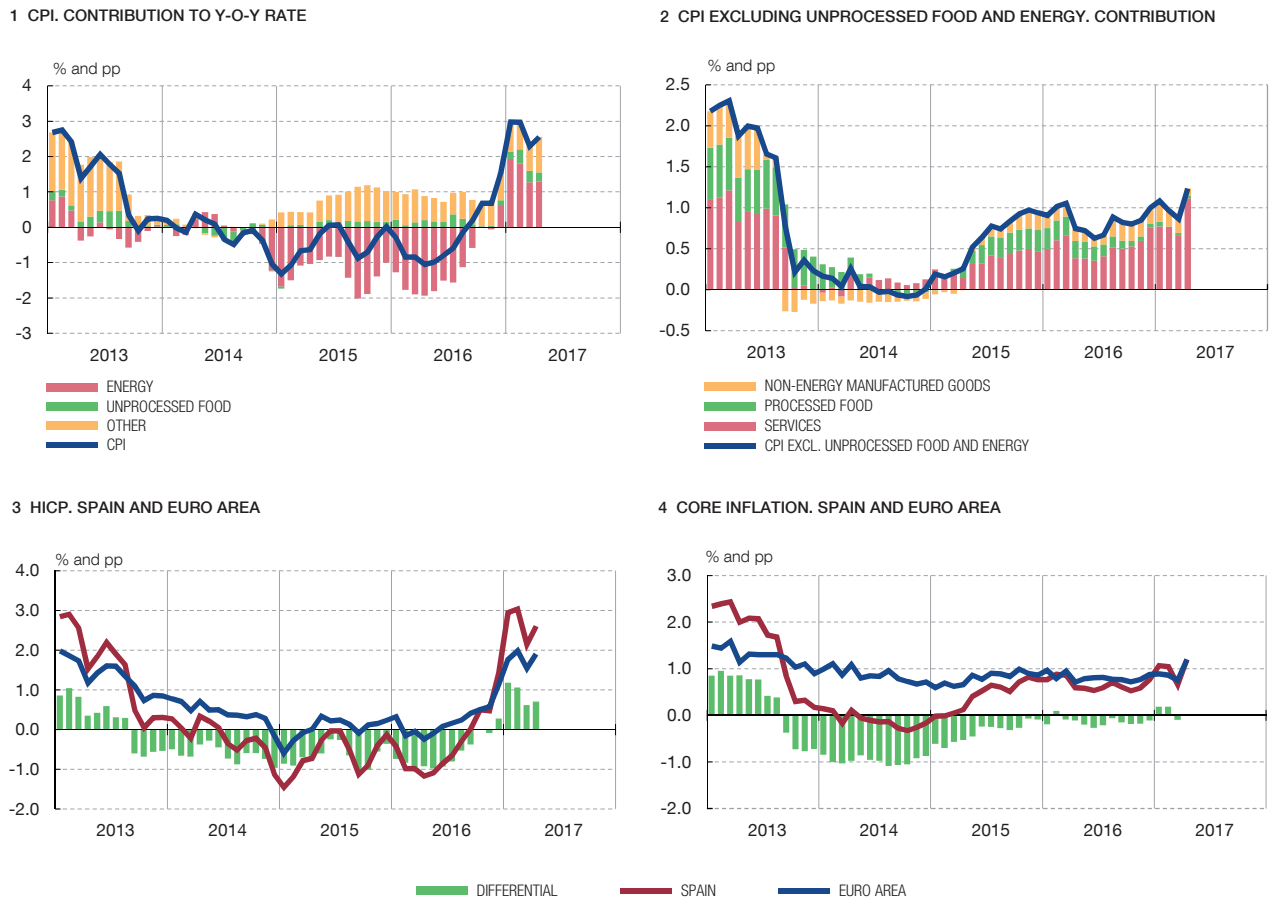
The rate of inflation rose from the summer onwards, driven by the energy component, but core inflation remained relatively stable at low levels. In 2016, the inflation rate, as measured by the CPI, was negative (-0.2%) for the third year running. The average annual rate, however, masks an upward path from the spring onwards, almost entirely attributable to the energy component, which has continued in 2017 to date. The annual rate reached

23 In 2015, the rate of change in wages did not increase as the year elapsed either, but then inflation remained roughly stable over the course of the year.

24 Wage drift is defined as the residual between the growth in compensation per employee and the sum of the wage increase in collective agreements plus the increase in labour costs associated with the rise in Social Security contributions.

25 See J.M. Montero and A. Urtasun (2014), "Price-Cost Mark-Ups in the Spanish Economy: A Microeconomic Perspective", *Working Paper*, 1407, Banco de España.

SPAIN: CONSUMER PRICES AND DIFFERENTIAL WITH THE EURO AREA CHART 1.11



SOURCES: European Commission, INE and Banco de España.

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3% in January and February, the highest level since October 2012, before falling back again (see Chart 1.11). This pick-up stems from the increase in oil prices, a base effect resulting from falls in the price of this commodity a year earlier and higher electricity prices.[26] Meanwhile, the non-energy indicator was stable, having remained at around 1% since the summer of 2015, reflecting the absence until now of indirect and second-round effects arising from higher oil prices and also the fact that, despite its recent increase, the response of inflation to economic activity remains limited, especially during upturns.[27]

The inflation differential with respect to the euro area has turned positive in recent months, as a result of the rise in the energy component. Until it changed sign in the opening months of 2017, the core inflation differential with respect to the euro area had been negative throughout the upswing, although its size decreased considerably from the end of 2015 (see Chart 1.11). In April 2017, this differential stood at zero.

3 Continuation of the recovery: risks and vulnerabilities

In a more complex international setting, the Spanish economy needs to achieve sustained growth along with deficit and public debt reduction and external balance correction. The upswing in the Spanish economy has already lasted almost four years.

26 See Box 3, Quarterly Report on the Spanish Economy, *Economic Bulletin*, December, 2016, Banco de España.

27 See L.J. Álvarez, A. Gómez Loscos and A. Urtasun, (2015), "Asymmetries in the relationship between inflation and activity", *Economic Bulletin*, November, Banco de España.

The latest projections of the Banco de España envisage continuing growth in the coming years, albeit at a slower rate than in the 2015-16 period, as the effects of the temporary factors that have prevailed in recent years tail off. That said, this scenario is subject to various predominantly downside risk factors.[28] Notable, on the external side, was the greater uncertainty surrounding global economic policies and their possible impact on world trade, as well as the rise in interest rates, especially at longer maturities. Meanwhile, domestically, there are still a number of elements of fragility. In particular, the considerable level of public debt and of debt of certain segments of the household and business sectors entails a high degree of dependence on external saving, a source of vulnerability to possible further increases in yields on debt markets and, in general, to the cost of external financing. The solvency levels of Spanish credit institutions exceed minimum requirements but their profitability – affected, as in other parts of Europe, by low net interest income and the presence, albeit declining, of non-performing assets on their balance sheets – is moderate. Finally, the recent rise in oil prices involves certain challenges for the Spanish economy, given its dependence on this commodity, which means that higher oil prices lead to a deterioration in the external balance, as well as the aforementioned risks of re-emergence of the positive cost and price growth differential with respect to competitors.

This section analyses the possible effects of the earlier-mentioned risk factors to the Spanish economy in the short and medium term, while the following section analyses the structural challenges, linked to the economy's longer-term growth potential.

3.1 GLOBAL ECONOMIC POLICIES

The degree of uncertainty surrounding the international setting increased considerably last year and is a risk factor for the euro area economy. As mentioned above, the difficulties surrounding the correction of imbalances in China, the new economic policy stance in the United States and the uncertainty over the exit of the United Kingdom from the European Union are factors that may have an adverse impact on the world economy in the short and medium term and, in some cases, especially on the euro area and the Spanish economy. In particular, implementation of the budgetary measures outlined by the new US administration may, given the high degree of utilisation of resources in that economy, lead to a contractionary monetary policy response, the pass-through of which to global financial conditions is a risk factor for activity in the euro area, which is lagging behind in the business cycle. Likewise, the United Kingdom's exit from the EU may have a large impact on the euro area, given the close financial and trade ties existing between these two areas.

Trade openness has been positive for the welfare of the general public and certain protectionist measures may revive the weakness displayed by world trade last year. In certain parts of the world an intensification in authorities' protectionist bias was observed during 2016. The possible adoption of additional protectionist measures may further weaken world trade, which would be very negative for economic activity and potential global welfare improvements, given the evidence of a positive relationship between the degree of trade openness and the level of competition between firms, leading to lower prices, improved product quality and greater innovation dissemination. These effects are positive from the viewpoint of consumer welfare, although it is not easy to quantify them and they do not immediately materialise. By contrast, the costs of openness for some segments of the population may be perceptible even in the short term. Specifically, the offshoring of some production chain processes following trade liberalisation has been

28 See "Macroeconomic projections for the Spanish economy (2017-2019)", Box 1 of the Quarterly Report on the Spanish Economy, *Economic Bulletin,* 1/2017, Banco de España.

identified on occasions as a factor triggering decline in certain industries. Emphasis on these initial adverse effects has led the new US administration to abandon the Trans-Pacific Partnership (TPP) and developed countries generally to curb the adoption of trade liberalisation policies and, in particular, further tariff reductions, a phenomenon that has been observed since the crisis. In fact, in recent years, increasing recourse to non-tariff measures appears to have given rise to a significant increase in protectionism (see Box 1.1).[29]

Trade protectionism poses a notable risk to the recovery in the Spanish economy, which is increasingly dependent on the external sector. Exports of goods and services have been a driver of economic growth in Spain throughout the recovery (see Chapter 3 of this Report). During this period, the economy's degree of international openness has increased considerably, so that sales to the rest of the world now represent 33% of GDP, as compared with 25% in 2008. The consequences of this process are predominantly positive, but it also increases vulnerability to the vagaries of global trade flows. In particular, the diversification of Spanish trade in recent years towards markets outside the EU and, especially, emerging markets, has been very significant. For this reason, strains in the trade relations between the United States and Mexico or China would also have repercussions for Spain. In addition, the Spanish economy is highly exposed to the British economy, in various areas, including sectors linked to both tourism and non-tourism services and the financial sector, which makes it especially sensitive to the shape of the future relationship between the United Kingdom and the EU.[30]

3.2 DEBT AND FINANCIAL COSTS

The high level of indebtedness of the Spanish economy makes it vulnerable to possible further interest rate increases. In a high-debt environment agents' balance sheets are especially sensitive to possible international capital market tightening. The higher the degree of indebtedness the larger the fall in the value of net worth that will result from a decline in the value of real or financial assets,[31] and also the greater the sensitivity of incomes to increases in the cost of servicing the debt burden.

The public debt-to-GDP ratio remains very high. Despite the stabilisation of the public debt ratio, it remains at around 100% of GDP, more than 60 pp above its pre-crisis level, and the accumulated fiscal imbalance continues to be significant in comparison with other euro area countries (see Chart 1.12). The intensity and duration of the necessary public sector deleveraging depends on economic growth, the inflation outlook and interest rates, as well as the pattern of public-debt reduction. The simulations of the right-hand panel in Chart 1.12, based on different assumptions for these variables, show that the range of possible paths for the public debt-to-GDP ratio is indeed very broad. However, on reasonable assumptions regarding the possible future developments in the above-mentioned variables, the probability that the level of debt of Spanish general government will be below the reference level of 60% of GDP during the next decade is low.

Following various years of intense adjustment, households and firms have made significant progress with their deleveraging. The debt-to-GDP ratios of Spanish

29 Examples of non-tariff instruments include the introduction of import permits, quality requirements, inspections or price controls. For further details see Evenett S. and J. Fritz (2015) The Tide Turns? Trade, Protectionism and Slowing Global Growth, CEPR Press.

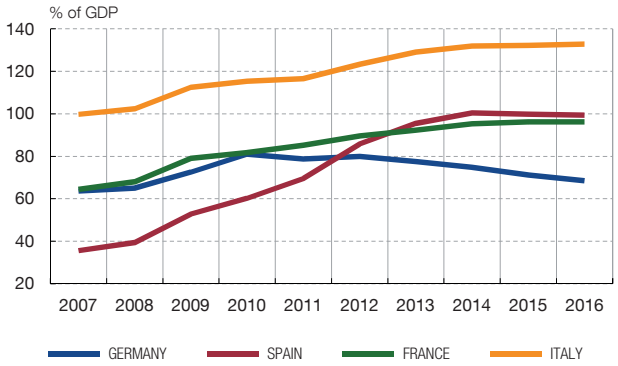
30 See Box 5, "Quarterly Report on the Spanish Economy", *Economic Bulletin*, September 2016, Banco de España.

31 Thus, a 10% decline in the value of assets entails an equivalent fall in net wealth if the investor has no debts. However if the indebtedness were 50% of the value of the assets, the fall in net wealth would be 20%, and if the leverage were as much as 80%, it would amount to 50%.

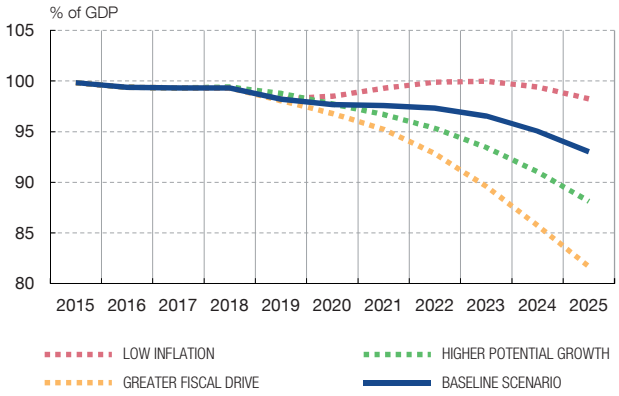
GENERAL GOVERNMENT DEBT

CHART 1.12

1 EXCESSIVE DEFICIT PROTOCOL (EDP) DEBT



2 PUBLIC DEBT SCENARIOS: SPAIN (a)



SOURCES: ECB and Banco de España.

a Alternative simulations of paths of the public debt-to-GDP ratio up to 2025, under different assumptions, are presented. These assumptions refer to a baseline scenario and three alternative scenarios. The baseline scenario is constructed using end-2016 data and the latest macroeconomic forecasts of the Banco de España ("Quarterly report on the Spanish economy" of March 2017) for 2017. The specific assumptions for these two years are, respectively, real GDP growth of 3.2% and 2.8%, inflation (GDP deflator) of 0.3% and 1%, a government deficit of 4.5% and 3.3% of GDP, with a change in the primary structural balance of –1 % and –0.1% of GDP, an implicit debt interest rate of 2.8 % and 2.7%, and a negative deficit-debt adjustment for the net sale of assets of 1.6% of GDP for 2016 and a positive adjustment of 0.3% of GDP in 2017. From 2018 the tool described in Othman Bouabdallah et al. (2017), *Debt sustainability analysis for euro area sovereigns: a methodological framework,* ECB Occasional Paper, No 185/April is used, to extend the macroeconomic scenario and the associated public debt path to 2025. In particular, it is assumed that inflation converges with the medium-term target of the ECB in five years, that GDP growth converges with its potential growth path (estimated by the European Commission) and that there is a fiscal adjustment in line with the European requirements assumed by Spain. Three assumptions of the baseline scenario are changed to obtain the alternative scenarios: 1) Low-inflation scenario: the GDP deflator converges with its target of 2% over a ten-year horizon instead of the five-year one in the baseline scenario; 2) Higher-growth scenario: potential GDP growth 0.5 pp higher from 2018, as a consequence of the implementation of structural reforms; and 3) greater fiscal drive scenario: an additional annual improvement in the structural balance of 0.5% of GDP from 2018, until the medium-term target of a zero structural balance is reached.

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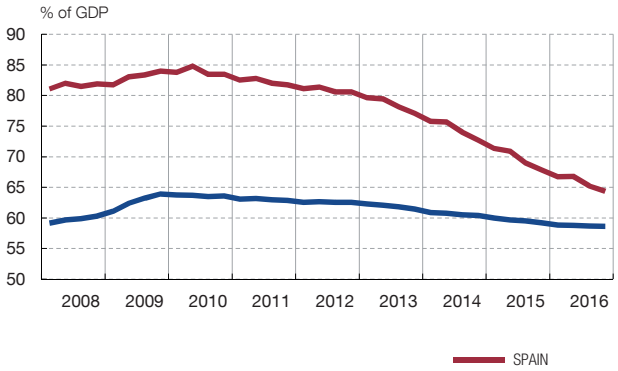
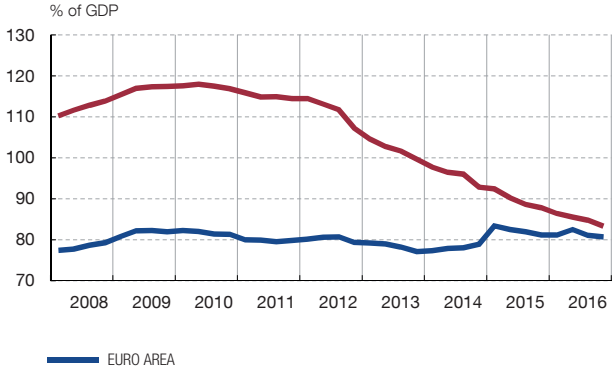
SPAIN: FINANCIAL POSITION OF HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

CHART 1.13

1 DEBT RATIO. HOUSEHOLDS



2 DEBT RATIO. NON-FINANCIAL CORPORATIONS



SOURCE: Banco de España.

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households and firms have declined significantly from their mid-2010 peaks (see Chart 1.13). By December 2016, these ratios had fallen by 20 pp and 34 pp, respectively, and the gap vis-à-vis the related euro area values had narrowed notably, to 6 pp and 3 pp, respectively. Estimating sustainable levels of debt is especially complicated in the case of sectors such as households and non-financial firms, which are made up of highly heterogeneous agents. Various methodologies have recently been proposed to estimate these equilibrium levels, but as each has its limitations their results should be interpreted

with caution.[32] On the basis of various alternative methodologies, the European Commission estimated, in its 2016 report on Spain, that in mid-2015 the deleveraging needs in the household sector were still between 10 and 20 pp of GDP, while those of firms were below 10 pp of GDP. However, given that the debt ratios of these sectors fell by around 7 pp between mid-2015 and December 2016, the need for further deleveraging would currently be less than implied by the above figures.

Despite the notable reduction in aggregate levels of indebtedness, the level of debt of many firms and households remains high relative to income. The aggregate deleveraging achieved by the private sector since 2010, of almost 55 pp, can be considered extraordinary. However, the remaining debt is distributed unevenly across households and firms, so that in some segments of these two sectors the level of debt remains high relative to the income sustaining it. According to the latest wave of the survey of household finances, based on end-2014 data, 14% of indebted households (7% of all households) devoted more than 40% of their gross income to debt payments that year.[33] For households in the bracket corresponding to the lowest 20% of income, 48% (13% of all households) exceeded this threshold. Given the improvement since 2014 in the aggregate indicators of the economic and financial situation of households, with significant increases in income and employment, reductions in indebtedness and a decline in interest rates, the proportion of households exceeding these debt burden thresholds is now likely to be lower. In the case of non-financial firms, those groups in which there is still a high proportion of companies facing interest payments that represent a significant proportion of their income are the smallest ones and, especially, those linked to construction and real-estate services.[34]

The negative net international investment position continues to be a significant vulnerability, although it has recently been reduced as a result of various factors. Despite the notable reduction in private debt in recent years, in 2016 the negative net international investment position (IIP) of the Spanish economy amounted to 85.7% of GDP, which was high compared to other euro area countries (see Chart 1.7). As regards the sector breakdown, the negative net IIP of general government has increased significantly since the start of the crisis, while those of financial institutions, firms and households have declined.[35] That said, as the analysis in Chapter 3 of this report shows, the cumulative structural adjustment of the current account balance in recent years, along with the globalisation of financial markets and the restructuring of liabilities, have helped to moderate the external vulnerability of the economy.[36] In addition, valuation effects, which have in recent years reflected an improvement in the financial position of resident issuers, have limited correction of the book value of the negative external position. Specifically, the

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32 One methodology attempts to estimate the equilibrium level of debt on the basis of its economic determinants, such as disposable income, interest rates and wealth. Another approximation focuses on the analysis of credit cycles and past deleveraging episodes (see Borhorst and Ruiz-Arranz, 2013, "Indebtedness and deleveraging in the euro area", Euro Area Policies, Selected Issues, IMF). Finally, indicators have been built of debt (net of revaluations, write-offs and debt reclassifications) relative to assets, and of its convergence towards its equilibrium level (see Cuerpo et al, 2015 "Private sector deleveraging in Europe", Economic Modelling, pp. 372-383). For further details of the alternative approaches, see 'Private sector deleveraging: outlook and implications for the forecast', in European Economic Forecast - Autumn 2014, European Economy 2014", European Commission.

33 See "Survey of Household Finances (EFF) 2014: methods, results and changes since 2011" (2017), *Economic Bulletin*, 1/2017, Banco de España.

34 See A. Menéndez and M. Mulino (2017) "Changes in the degree of financial pressure borne by Spanish non-financial corporations: 2007-2016", *Economic Bulletin*, 1/2017, Banco de España.

35 See N. Jiménez and C. Martín (2017) "The Balance of Payments and International Investment Position of Spain in 2016", *Economic Bulletin,* 2/2017, Banco de España, forthcoming.

36 See the IIP simulations presented in Chapter 3 of this Report.

improvement since 2012 in the solvency and prospective earnings of resident issuers has given rise to a revaluation of their liabilities, although, in terms of the IIP, this translates into negative valuation effects that increase the negative external balance. Without the impact of these valuation effects and other adjustments over the last four years, the net IIP would have fallen by 16 pp, as compared with the 4 pp decline actually recorded.

The moderation of financial costs in recent years has had a very significant effect on the income of households, firms and general government. Given the high levels of public and private-sector debt in the Spanish economy, changes in financing costs have a direct impact on private and public-sector income and, consequently, on the financial position of the nation. Thus, the decline in interest rates in recent years (with a varying impact over time on the different segments of the yield curve) has contributed very significantly to boosting the income of the various sectors of the Spanish economy. This effect has in fact been stronger in Spain than in other euro area countries, given the higher level of debt in Spain and the greater prevalence of variable interest rate financing in the case of the private sector. Specifically, the average annual impact of the decline in interest rates between 2008 and 2016 on the net debt burden is estimated to have been 1.7% of average household gross disposable income in this period, 7.9% of the gross operating surplus of non-financial corporations and 0.4% of GDP in the case of general government.

A possible scenario of rising interest rates would have a contractionary effect on the income of the various sectors. Given the historically low level at which interest rates currently stand, they can be expected to stop contributing to the expansion of income in the various sectors and, in the medium term, in a scenario of continuing recovery and progressive normalisation of monetary conditions, to have a contractionary effect. In the case of households and firms, given the predominance of short-term and variable interest rate loans (especially in the case of most of the outstanding amount of mortgages), the pass-through of changes in interest rates to the income of agents may be relatively rapid. That said, the most important part of the cost of financing of these agents is basically linked to changes at the short end of the yield curve, which is more closely related to the monetary policy stance. As mentioned above, the latter remains extraordinarily loose in the case of the euro area.[37] In addition, the decline in the debt of these two sectors in recent years makes the sensitivity of their net interest payments to changes in the cost of financing significantly lower now than at the start of the crisis. That said, as mentioned above, given the heterogeneity of the financial position of different agents, both in the case of households and firms, certain groups of borrowers would still be highly vulnerable to any tightening of financing conditions.

The sensitivity of the debt burden of general government to interest rate changes has increased as a consequence of the rise in public debt in recent years. Moreover, for general government, the changes at the long end of the curve are more important, which is where the increases in interest rates since autumn 2016 have been concentrated. However, given the long average maturity of public debt, the pass-through of interest rate changes to the cost of debt occurs gradually. Box 1.3 contains various quantitative simulations illustrating how changes in the various segments of the yield curve may impact the cost of the debt of non-financial corporations, households and general government.

37 The possible increase in interest rates may be associated with a strengthening of activity, in which case, on aggregate, the increase in interest payments could be partially offset by an improvement in other sources of income.

In the setting described, resumption of fiscal consolidation is a priority. Reducing the high level of public debt is necessary to check future financial costs, to reduce the economy's vulnerability to a possible tightening of financing conditions and to restore some scope for discretionary fiscal policy in the event of possible shocks. This requires a resumption of fiscal consolidation, the scope for which, as measured by the structural deficit, is still large (3.5% of GDP, according to the latest European Commission estimates). Fiscal consolidation should be part of a medium-term programme of measures that would enable targets to be achieved, based on prudent assumptions regarding the outlook for macroeconomic developments and public revenues, and making use of all the preventive and coercive mechanisms of the Budgetary Stability Law. At the same time, in a scenario of further fiscal consolidation, the composition of the adjustment is particularly important, to enable public finances to make a greater contribution to the economy's growth potential. In this respect, further progress needs to be made in rationalising public expenditure and improving its efficiency, and a review and definition of the basket of taxes that would enable the revenues required to finance the desired level of public spending to be raised steadily and efficiently needs to be considered.

Reducing the negative international investment position will also require preservation and extension of the economy's competitiveness gains. Reducing the economy's negative international investment position to levels of lower vulnerability will require current-account surpluses for a prolonged period. This means that, as well as structural consolidation of public finances, the economy's competitiveness gains must be preserved and extended, which will require various structural reforms, an aspect that is addressed in Section 4 of this chapter.

3.3 THE LOW PROFITABILITY OF CREDIT INSTITUTIONS

Recovery in the profitability of credit institutions is a challenge in the current environment of low net interest income, limited activity and persistent unproductive assets. In 2016, the consolidated earnings of Spanish credit institutions fell by 21% with respect to the previous year, their ROE standing at a low level of 4.3%, down 1.3 pp from the previous year (see Chart 1.14).[38] [39] The fall in profitability since the start of the crisis is primarily due to the lower volume of activity and the increase in NPLs, but more recently the key factor has been the reduction in unit margins, compounded by an increase in legal costs. In fact, since 2007 the net interest income of the business in Spain of national deposit institutions has decreased by 24%, primarily due to the lower volume of activity and the increase in NPLs during the period. However, since early 2015, the greater difficulty achieving further reductions in the cost of liabilities, given that the latter had become close to zero, and the limited recovery in credit meant that the decline in unit margins per volume of assets has become the main factor behind subsequent reductions in the net interest income of Spanish institutions. The current context of very low interbank interest rates, a still limited volume of new business and the presence of significant pockets of unproductive assets thus poses a challenge for the recovery of profitability of Spanish institutions, which requires further increases in efficiency, potentially through some additional consolidation within the sector and the exploration of alternative sources of revenue.

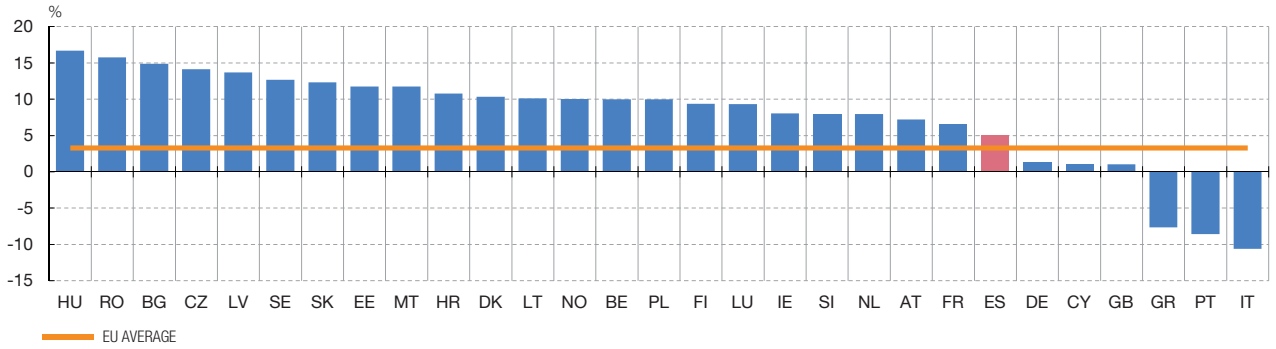
Despite the solvency position of credit institutions, their low profitability is a vulnerability for the economy. The common equity tier 1 (CET1) ratio for the Spanish

38 For further details, see the *Financial Stability Report*, May 2017, Banco de España.

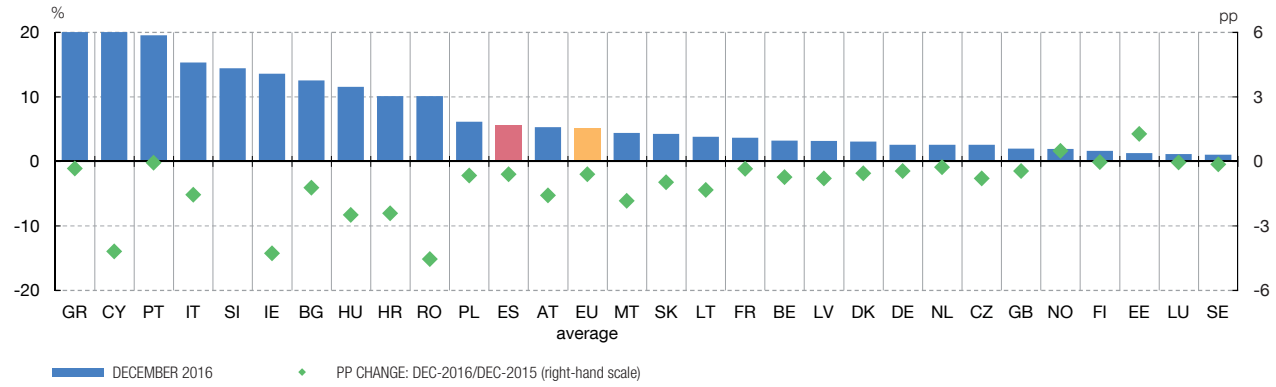
39 The ROE figure of 4.3% cited in the text is calculated for Spanish institutions as a whole. The implicit figure in the chart, somewhat over 5%, differs because it refers solely to a sample of institutions used by the EBA for the international comparison.

FINANCIAL INSTITUTIONS: PROFITABILITY AND NPL RATIO CHART 1.14

1 RETURN ON EQUITY: A EUROPEAN COMPARISON
December 2016



2 NPL RATIO: A EUROPEAN COMPARISON (a)
December 2016



SOURCE: EBA.

a The NPL ratios in Greece and Cyprus are 45.9% and 44.8%, respectively.

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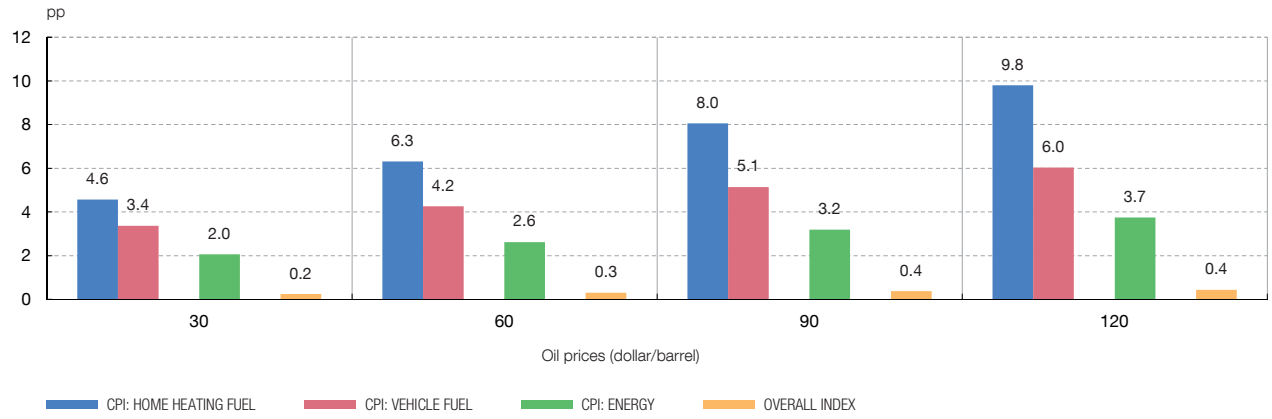
banking system as a whole reached 12.8% in December 2016, exceeding the minimum regulatory requirements. Also, the stress tests carried out by the European Banking Authority in July last year and by the Banco de España in November showed that the system would continue on aggregate to enjoy capital levels above the minimum requirements even in an adverse macroeconomic scenario. Even so, in the international environment described, materialisation of some of the risks mentioned, such as a world economic context characterised by protectionist policies, or adjustment in the prices of certain financial assets or in risk premiums, could trigger episodes of tension in bank funding markets with potential contractionary effects on the supply of funds to the other productive sectors.

3.4 COMPETITIVENESS, ENERGY PRICES AND INFLATION

The recent rise in oil prices has had greater adverse effects on the Spanish economy than on the euro area as a whole. Since the start of the crisis, adjustment of relative cost and price adjustments have played a decisive role, first, in the correction of the external imbalance and, subsequently, in boosting national spending. The recent oil price rises have direct consequences for the energy bill and also for the competitiveness of the Spanish economy. Indeed, the economy's inflation differential, which was negative between September 2013 and November 2016, turned positive in December 2016, reaching around 1 pp in early 2017. In this respect, it should be pointed out that a rise in oil prices has a comparatively greater contractionary impact on real household and business income in Spain than in the euro area and therefore, on spending too.

ESTIMATED IMPACT ON THE CPI AND ITS COMPONENTS OF A 10% INCREASE IN OIL PRICES CHART 1.15



SOURCES: INE and Banco de España.

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The short and medium-term challenge is to avoid excessive pass-through of the increase in energy costs to final prices and wages, which would reduce the competitiveness of the Spanish economy. In principle, and in the absence of further significant increases in energy costs, the effects of their recent rise on inflation will be temporary, insofar as they are absorbed by business and household income (see Chart 1.15).[40] The challenge, in this respect, is to ensure that the consequences of the rise in consumer prices are actually temporary and have the lowest possible contractionary impact on activity and employment. This requires avoiding the indirect effects of a pass-through of the increase in input costs to final prices, as well as the materialisation of second-round effects of the temporary rise in the energy component on wage demands.

In the longer term, the dependence on imported energy inputs still needs to be reduced. To reduce the impact of international oil market shocks, the dependence on imported energy inputs needs to be reduced. In this respect, the degree of diversification of primary energy has been increasing in recent years, with a decline in the weight of fossil fuels, while efficiency gains have been made in energy consumption, even relative to other euro area countries.[41]

4 Challenges for the sustained growth of the Spanish economy

The high structural component of the unemployment rate, the ageing population and low total factor productivity are the main constraints on the long-term growth of the Spanish economy. On the estimations available, the Spanish economy's potential growth has fallen significantly since the crisis began. Specifically, compared with a rate of nearly 3% in the period 2001-2007, it is estimated that potential growth will stand at around 1.5% in the next decade[42], a slowdown essentially due to the lower rate of increase expected in the population.[43]

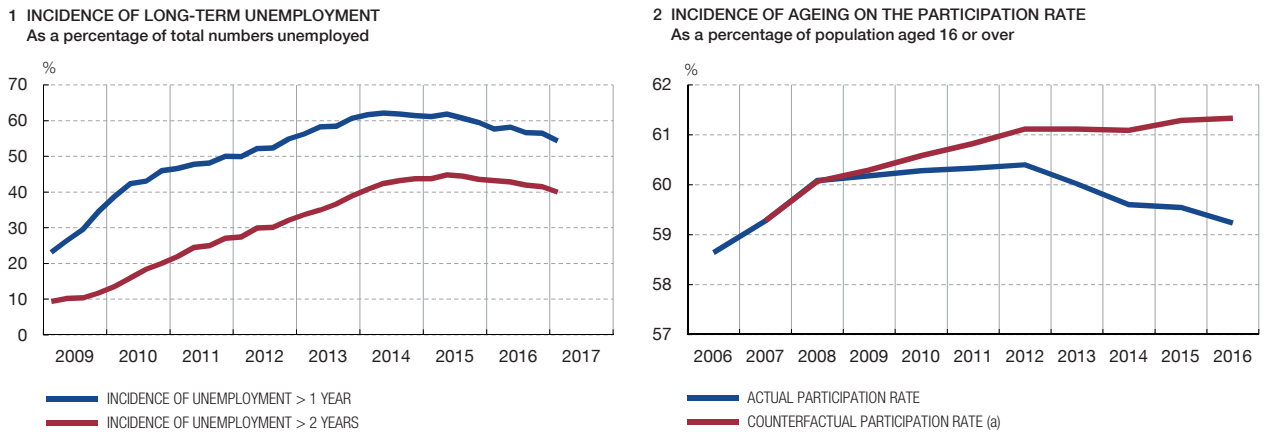
40 See the *Analytical Article* by Álvarez, L.J., I. Sánchez and A. Urtasun (2017), "The effect of oil price fluctuations on Spanish inflation", Banco de España.

41 See Box 3.2 in Chapter 3 of this Report.

42 See Box 1.3, *Annual Report, 2015,* Banco de España.

43 Specifically, these projections of the economy's potential growth rest on the INE's latest population assumptions (October 2016), according to which, in future net migratory flows will seemingly be very moderate, moving on a modestly growing trend from around 3,000 individuals in 2016 to 48,000 in 2025. This flow is in contrast with the average of 580,000 net immigrants during the period 2002-2008.

SPAIN: STRUCTURAL UNEMPLOYMENT AND PARTICIPATION RATE CHART 1.16



SOURCES: INE and Banco de España.

a Aggregation of participation rates by age group and gender with constant population weights from the 2007 Spanish Labour Force Survey.

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Reducing the high unemployment rate (especially the long-term unemployment rate) should remain an economic policy priority. Despite the sharp fall from the highs of early 2013, the unemployment rate stood at end-2016 at 18.6%, considerably higher than that observed in other euro area countries, except for Greece. High unemployment is concentrated in certain segments of the population, especially among low-skilled individuals and young people aged 19 to 29, who have unemployment rates of 34.4% and 31.6%, respectively.[44] Furthermore, as shown by Chart 1.16, the incidence of long-term unemployment, defined as unemployment which lasts for more than two years, is still very high (40% of the total numbers unemployed).[45] These data show the difficulties of large groups of the unemployed in taking advantage of the economic upturn and the risk that they might be permanently displaced from the labour market (see Box 1.2 of the *Annual Report, 2015*). Getting these individuals back to work should be a key economic policy priority, given the direct relationship between the duration of unemployment, on one hand, and the increase in inequality and the loss of skills, on the other.

The gradual ageing of the population reduces the economy's growth capacity. Noteworthy among the factors which explain the considerable reduction in the estimated growth potential of the Spanish economy is the impact of demographic ageing. The stabilisation of the Spanish population in 2016, following several years of slight declines, masks different patterns by age group. In particular, last year there was a fresh increase in the population aged over 65 (of 1.6%), in contrast with a widespread decrease in the other age groups. As a result of these mixed developments, which have persisted since 2008, in the period 2008-2016, the dependency ratio (a measure showing the ratio of the population aged over 65 to the working-age population) has risen by approximately 5 pp to 29%. The INE's projections indicate likewise very steep increases in this variable over the next few decades, reaching 36% in 2026 and exceeding 60% around 2045, even though it already includes net positive migratory flows.

44 In both cases, job destruction flows are higher than those of other groups. Additionally, among the more unskilled unemployed, job creation flows are considerably lower than those of the average labour force.

45 The incidence of long-term unemployment (over one year) is 56.4%.

Population ageing is already having a negative effect on the performance of the participation rate. Population ageing has begun to affect labour market participation in such a way that it is estimated that the participation rate of the population aged over 16 would have been nearly 2 pp higher in 2016 than in 2007, if the demographic structure of that year had been maintained (see Chart 1.16).[46] Looking ahead, the progressive ageing of the population will foreseeably prompt a further decline of 2 pp in the participation rate between 2016 and 2020.

Ageing may also have negative effects on productivity. In addition to this direct impact on economic growth relating to the lower availability of labour, there is empirical evidence that identifies the negative indirect effects of population ageing on the rate of increase of potential output. These effects are channelled, inter alia, through the impact of the demographic shift on decisions regarding savings and investment in human capital, and on the economy's pace of innovation.[47]

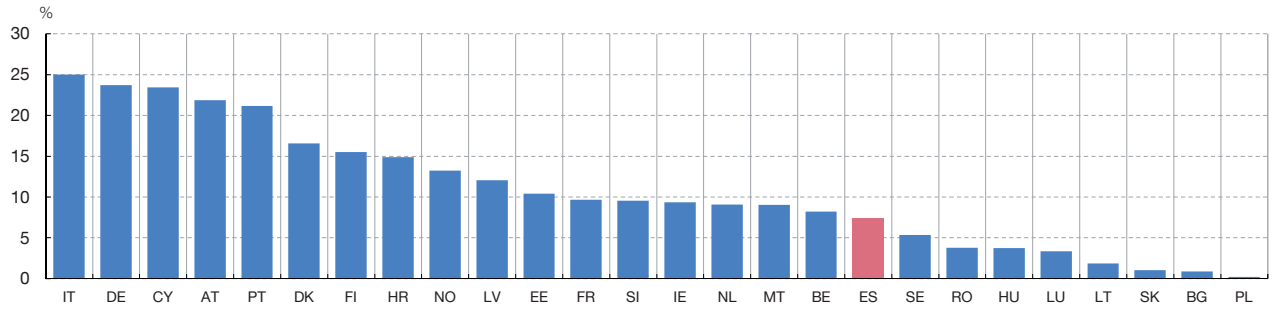
The public pension system must define a strategy to deal with the challenge posed by demographic changes. Demographic changes put upward pressure on certain public expenditure items such as health, care for the elderly and, in particular, pensions. In this latter case, on estimations of the European Commission's latest report on ageing, the increase expected in the dependency ratio, defined as the ratio of the number of pensioners to the working age population (15 to 64 years), is estimated to increase from around 30% to slightly more than 60% between 2015 and 2050, which, without offsetting measures, would exert significant upward pressure on expenditure on this type of social benefit. The pension system reforms introduced in recent years have met this challenge by, among other measures, increasing the retirement age, defining a sustainability factor to tie the initial pension to longer life expectancy and approving a new mechanism to make the annual revaluation of pensions conditional upon the balancing of the system's revenue and expenditure, with ceilings and floors. On the available estimations, these reforms will foreseeably counter to a large extent the effect of the expected rise in the dependency ratio on pension expenditure in favourable macroeconomic settings and, therefore, contribute to strengthening the long-term sustainability of the system. Without additional increases in revenue, the adjustment mechanism envisaged in the system as it currently stands, would operate mainly by decreasing the pension replacement rate, that is, by reducing the average pension with respect to the average salary. On estimations of the European Commission's latest report on ageing, this decline would reach 20 pp between 2013 and 2060, even under a very favourable macroeconomic scenario. Looking forward, delimiting the replacement rates which our pension system aims to ensure is essential so that revenue is adjusted for sustainability to be guaranteed.[48] In any event, it is desirable that any reform strategy chosen should make the system more transparent, strengthen contributiveness, that is the ratio of contributions to benefits and, especially, maintain an automatic adjustment mechanism which ensures financial equilibrium.

The effects of population changes on economic growth can be partly countered by reducing structural unemployment through on-the-job training and life-long learning policies. A key tool for managing to raise potential growth is avoiding that the unemployed (particularly the longer-term unemployed) lose their skills. Training policies play a crucial

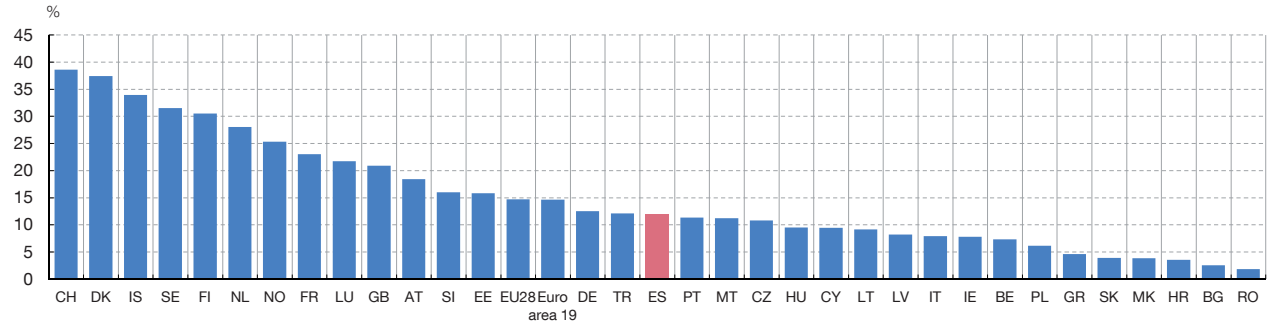
46 See Box 6 "Quarterly report on the Spanish economy", *Economic Bulletin*, September 2016, Banco de España.
47 See Y. Aksoy, H. S. Basso, R. P. Smith and T. Grasl (2015) *"Demographic structure and macroeconomic trends"*, Working Paper 1528, Banco de España.
48 See P. Hernández de Cos, J. F. Jimeno and R. Ramos (2017), *The Spanish public pension system: current situation, challenges and reform alternatives,* Occasional Paper 1701, Banco de España.

EMPLOYEE PARTICIPATION IN TRAINING, BY COUNTRY CHART 1.17

1 PROPORTION OF TOTAL EMPLOYMENT POLICY PARTICIPANTS RECEIVING TRAINING (2015)



2 PERCENTAGE OF PERSONS IN EMPLOYMENT PARTICIPATING IN TRAINING (2015)



SOURCES: European Commission and Banco de España.

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role in improving the employability of the unemployed. In particular, this tool is used infrequently in Spanish employment plans – especially for the jobless with intermediate and high educational levels (see Chart 1.17) – and the high mismatch between their skills and those required by companies suggest there is wide scope for action in this area.[49]

There is also room to consolidate guidance policies for the unemployed and to focus hiring rebate arrangements principally on less employable groups. The evidence available shows that performing tasks which require the use of cognitive skills in the workplace contributes more effectively to increasing workers' future employability.[50] This observation is particularly relevant for low-skilled individuals, making it advisable to refine the new design of guidance and complementary policies for this type of unemployed individuals, in line with the action taken in recent years to increase collaboration with the private sector. Key to this strategy, is the assessment of the existing set of programmes as a prior step to redirecting resources to where they obtain the best results. Accordingly, recent evidence indicates that rebate arrangements for hiring the unemployed are not very effective in terms of net job creation,[51] except for certain specific groups, such as the lower-skilled unemployed who, consequently, should be the focus of such arrangements.

49 See S. Puente and A. Casado (2016), "Skills mismatch between labour supply and demand in Spain", *Economic Bulletin,* September, Banco de España.

50 See J. F. Jimeno, A. Lacuesta, M. Martínez-Matute and E. Villanueva (2016), *"Education, labour market experience and cognitive skills: evidence from PIAAC"*, Working Paper 1635, Banco de España.

51 F. Paulino, M. Izquierdo and S. Puente (2017), "Subsidising mature age employment or throwing coins into a wishing well: a quasi-experimental analysis", Working Paper, Banco de España, forthcoming.

Reducing unemployment is also crucial for reversing the increase in income inequality which arose during the crisis. The analyses available reveal the crucial role played by the increase in unemployment in income inequality in Spain during the crisis.[52] Although the data available are still limited, existing evidence seems to indicate that job creation in recent years has favoured a reduction of the inequality in income distribution. For instance, according to the Survey of Income and Living Conditions, in 2015 the Gini index, calculated on the basis of household income, decreased slightly. A continued sustained recovery of employment will be conducive to reducing inequality.

Increasing potential growth requires ongoing productivity improvements. Projections of potential growth rates are also moderate in per capita terms, as a result of the protracted low buoyancy of productivity observed over the last two decades. This low productivity growth is linked both to the allocation of resources to less productive firms and the lower rate of increase in the average productivity of firms compared to European countries.

The reallocation of resources to more productive firms requires measures in highly disparate areas.[53] In particular, the indicators available underline that Spanish firms face greater costs and administrative requirements in order to start trading[54] than in other European countries, making it necessary to revise those components of state and regional legislation which hinder market access. Accordingly, it is necessary to complete the implementation of the Law to Ensure Market Unity. Furthermore, the regulatory components which limit the growth of the most efficient firms[55] need to be revised.

Certain aspects of sectoral regulations, as well as excessive contract duality may also negatively affect productivity growth. As for the lower average productivity growth of firms compared with other developed countries, there is ample room for improvement in certain aspects which can be applied cross-sectionally to favour competition in the product market. In particular, in the area of sectoral regulations, the available indicators show greater regulatory restrictions in certain sectors, such as transport and professional services.[56] Furthermore, the price of electricity finally paid by firms and consumers remains high in relation to that observed in other European countries. Similarly, there is also considerable room for improvement in the legal system, particularly in terms of reducing the average length of proceedings to bring it into line with that of other countries.[57] Finally, the excessive duality in the labour market arising from the current hiring system causes high volatility in hiring which has negative effects on the productivity of temporary employees, who face careers with inordinately frequent job turnover, and permanent employees, who show overly low labour mobility.[58]

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52 See L. Hospido and S. Bonhomme (2017), "The Cycle of Earnings Inequality: Evidence from Spanish Social Security Data", *Economic Journal,* and F. J. Goerlich (2016), *Distribución de la renta, crisis económica y políticas redistributivas,* Fundación BBVA.

53 See *Chapter 4, Annual Report, 2015,* Banco de España, and *Chapter 3, Annual Report, 2014,* Banco de España.

54 See the Eurobarometer on European businesses and public administration of the European Commission (2016) https://data.europa.eu/euodp/es/data/dataset/S2089_417_ENG.

55 M. Almunia and D. López-Rodríguez (2017), "Under the Radar: the Effects of Monitoring Firms on Tax Compliance", *American Economic Journal, Economic Policy*, forthcoming, and M. Almunia, J. F. Jimeno and D. López-Rodríguez (2017), *Firm Size-Dependent Regulations in Spain,* Working Paper, Banco de España, forthcoming.

56 See M. Correa-López and R. Doménech (2017), *Service regulations, input prices and export volumes: evidence from a panel of manufacturing firms*, Working Paper 1707, Banco de España.

57 See J. Mora-Sanguinetti (2016), «Evidencia reciente sobre los efectos económicos del funcionamiento de la justicia en España», *Boletín Económico,* January, Banco de España.

58 See, for example, A. Cabrales, J. J. Dolado and R. Mora, *Dual Labour Markets and (Lack of) On-the-Job Training: PIAAC Evidence from Spain and Other EU Countries, European University Institute, mimeo*, and A. Ichino and Riphalm (2005), "The effect of employment protection on worker effort: a comparison of absenteeism during and after probation", *Journal of the European Economic Association,* 3 (12), pp. 120-143.

EDUCATIONAL INDICATORS IN 2016 TABLE 1.2

As %

	Spain	EU
Population aged 15-64		
Primary education	42.8	26.6
Secondary education	24.7	46.3
Tertiary education	32.6	27.1
Population aged 25-34		
Primary education	34.7	16.5
Secondary education	24.4	45.4
Tertiary education	40.9	38.1
Early school leavers rate (a)	19.4	10.8

SOURCE: Eurostat.

a The early school leavers rate is defined as the percentage of persons aged 18-24 with educational attainment below upper secondary level who did not participate in any educational or training activity in the last month.

In order to increase productivity the education system needs to be improved and the accumulation of technological capital needs to be encouraged. The academic qualifications achieved by a population are a key determining factor of economic productivity. Accordingly, the percentage of the population aged between 25 and 34 with an educational attainment level lower than completed secondary education is 35% in Spain compared with the EU average of 17% (see Table 1.2). Despite the recent improvement in its OECD PISA indicator, which approximates the quality of an education system based on the results of 15-year-old students in standard tests, Spain is lagging behind the countries leading this classification and, in particular, behind most of its trading partners in central and northern Europe, which limits the development of activities linked to new technologies. The reform of the education system should be aimed at reducing this gap. Looking to the future, it is crucial for the education system to deal with trends such as globalisation, technological progress and task automation which make it necessary to reconsider the system of learning and the content of the educational curriculum.[59] Spain has lower levels of technological capital than other developed countries in the public sector and, particularly, in the private sector which is connected, in the latter case, to firms with a low capacity to absorb new technologies. These shortcomings would seemingly be related to aspects such as the training of workers and employers, the excessive weight of small firms, the limited development of alternative financial channels – such as venture capital – and the fragmentation of the public research system and its relative disconnection from business.

Total factor productivity growth is crucial for achieving lasting improvements in competitiveness. The comparatively more favourable results of Spanish exports than those of other euro area countries (see the bottom right-hand panel of Chart 1.3) highlight how gains in competitiveness based on price and cost containment have allowed the growth rate of sales abroad to outpace that of their markets. However, where such containment is the source of gains in competitiveness, the process of increasing foreign market shares is very slow and other advantages of forging a presence abroad, such as the possible impact on productivity growth or of the geographical diversification of exports, become apparent over longer periods.[60] Domestic demand will foreseeably increase over

59 See B. Anghel, S. de la Rica and A. Lacuesta (2013), *Employment polarisation in Spain over the course of the 1997-2012 cycle*, Working Paper 1321, Banco de España.

60 Chapter 3 of this report shows how the magnitude of the impact of gains in competitiveness on exports is, while relevant, relatively subdued.

the next few years, entailing further rises in imports (despite the substitution effects mentioned in Section 2.3.1) which will tend to exert negative pressure on the external surplus. These limits to correcting the external imbalance through gains in competitiveness based on price and wage moderation emphasise the need to identify and overcome the structural obstacles constraining long-term productivity growth, and the need to apply policies to tackle these shortcomings.

The materialisation of a positive outlook for the Spanish economy hinges on the ability of the EU and the euro area to achieve balanced growth. Aside from the domestic and global factors mentioned above, the Spanish economy is highly influenced by developments in the EU and in the euro area which constitute its closest external environment. Consequently, it is necessary to reduce excessive macroeconomic differences between the economies of Member States, improve the medium-term outlook overall and thus avoid a low growth scenario from becoming established. Accordingly, there continues to be a large number of countries with excessive imbalances according to the reviews of the European Commission. Furthermore, the highly persistent large current account surpluses in certain countries limits the internal adjustment required in the euro area and underlines the structural rigidities which restrict a more dynamic performance of domestic demand in these economies.

Monetary policy stimulus should be complemented by synergic action comprising the appropriate combination of national and supranational policies. As the European Commission and the ECB have reiterated, under the current circumstances the extraordinary stimulus provided by monetary policy should be complemented by the synergic action comprising, on one hand, structural reforms to increase productivity and improve the adjustment capacity of euro area countries; and, on the other, fiscal policies to reconcile the fostering of economic growth and compliance with budget sustainability requirements.[61]

Brexit and the surge in populism in certain countries have brought the EU to a crossroads which should serve to strengthen its foundations. At a collective level, developments throughout 2016 have shown that the process of European integration has come to a crossroads, just as sixty years have elapsed since the signing of the founding treaty of the EU. The British government's notification at the end of March of the United Kingdom's intention to leave the EU marked the beginning of a complex negotiating process which will foreseeably end in 2019. As part of this process, the specific arrangements whereby the United Kingdom will leave the EU and the future framework of relations between the two parties will have to be agreed. It is also important that the EU's current reflections on its future lead to the strengthening of the very foundations of the Union – free movement of people, goods, services and capital – and to a deepening of the single market by removing the numerous regulatory barriers which at present particularly hinder the provision of services in other EU Member States and worker mobility.

More resolute progress is required to strengthen the euro area's institutional framework by improving structural convergence and moving towards common fiscal stabilisation mechanisms In the case of the euro area, the lessons from the crisis should not be forgotten as regards the need to strengthen the governance framework and the mechanisms for channelling the imbalances that have built up and, in this way, to lay the

61 See Ó. Arce, S. Hurtado and C. Thomas (2016), "Synergies between monetary policy and national policies in a monetary union", *Economic Bulletin,* October, Banco de España.

foundations for renewed growth. The progress made to date – improvements in macroeconomic supervision, the implementation of the banking union and the creation of conditional financial assistance mechanisms – could be insufficient to avoid future shocks from questioning even the irreversibility of the single currency. Consequently, governments should promote the road map outlined in the *Five Presidents' Report* published in June 2015. In the short term, the priority is to achieve true financial integration of euro area economies by completing the banking union through the creation of a common deposit guarantee scheme and sufficient fiscal support for the single resolution mechanism, and through a more determined impetus for the European Commission's initiative for a capital markets union. Additionally, completion of the arrangements for implementing the recommendations made in the context of the European semester would seemingly allow better structural convergence, lead to a more symmetrical adjustment of the imbalances built up and contribute to increasing potential growth and investment. Similarly, it is important not to lose sight of the medium-term objectives for achieving an authentic Economic Union which covers, beyond the financial area, the area of policies overall. Accordingly, Chapter 4 of this report discusses possible ways for advancing towards a fiscal policy which includes common stabilisation mechanisms and reduces the incidence and economic and social effects of future crises.

Following several decades of ever-deepening globalisation, which has given rise to major increases in trade, migratory and financial flows, in recent years there appears to have been a slowdown in, and even some reversal of, this process. Indeed, in the last five years world trade has lost momentum. This might be attributable to various factors, such as the weakness of the more demand-intensive components in imports (such as investment), the greater weight of the emerging economies – which demand fewer import-intensive products – in global trade and the fall-off in global value chains. Moreover, recently the trade policies of certain economies, most singularly the United States, appear to be geared towards greater protectionism (see Chart 1). The analyses available and the experience of past episodes in which policies contrary to international trade were stepped up show that trade protectionism is harmful to well-being and global growth. In the short term, these policies distort the allocation of resources, prompting losses in efficiency; and in the medium and long term, they bear adversely on total factor productivity, as a result of the lesser absorption of knowledge associated with the reduction in trade openness, the downturn in innovation and in the adoption of new technologies, and lower managerial quality. These effects are accentuated in the recipient economies of foreign direct investment (FDI), since trade tends to move in conjunction with this variable.[1]

To illustrate the possible impact on the global economy of a hypothetical increase in trade protectionism, two alternative scenarios have been simulated with the NiGEM macroeconomic model.[2] The first scenario envisages an increase in US tariffs on Mexican and Chinese imports, as suggested in the current president's

1 See S. Edwards (1998), "Openness, Productivity and Growth: What Do We Really Know?", *The Economic Journal*, 108, pp. 383-398, on the relationship between trade openness and total factor productivity. On the relationship between trade and FDI, see Joshua Aizenman and Ilan Noy (2006), "FDI and trade - two-way linkages?", *The quarterly review of economics and finance*, vol. 46, no. 3, July, pp. 317-337.

2 See "Situation of and outlook for the world economy at the start of 2017", *Economic Bulletin*, 1/2017, Banco de España, where the results of these simulation exercises are presented in greater detail.

EFFECTS OF THE REVERSAL OF GLOBALISATION

Chart 1
PERCENTAGE OF PRODUCTS AFFECTED BY NON-TARIFF TRADE BARRIERS (a)

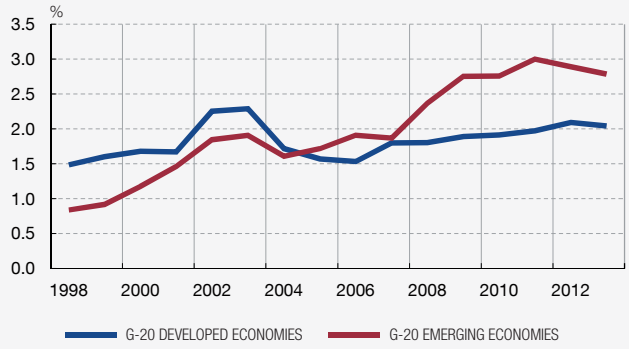


Chart 2
AVERAGE TARIFFS

Chart 3
CHANGE IN THE IMMIGRANT POPULATION AS A FRACTION OF THE TOTAL POPULATION

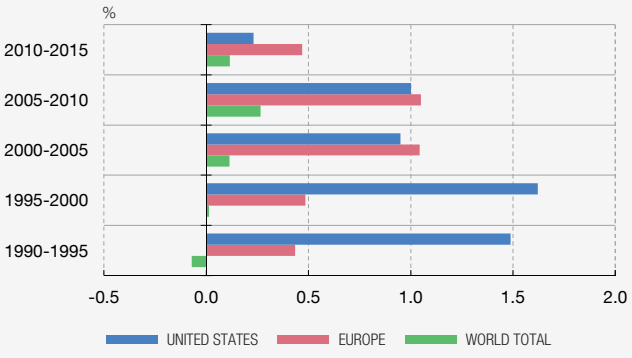
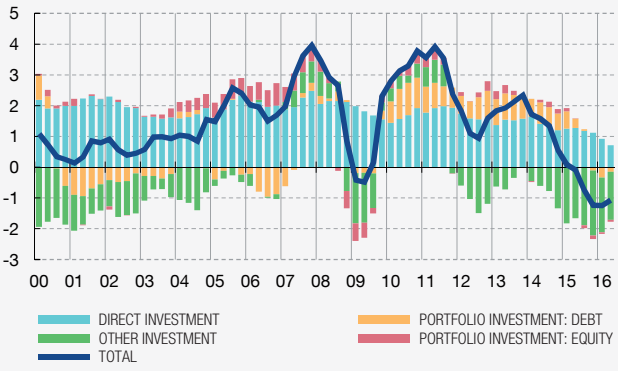


Chart 4
NET CAPITAL FLOWS: EMERGING ECONOMIES
(% OF EMERGING ECONOMIES' GDP) (b)



SOURCES: IMF, Datastream, Dealogic, United Nations, World Bank and Banco de España.

a See Bown, Chad P. (2014) Temporary Trade Barriers Database, The World Bank. Available at http://econ.worldbank.org/ttbd/
b Four-quarter moving sum.

electoral programme, assuming that these two countries react similarly and on an equivalent scale.[3] The second scenario simulates an across-the-board rise in tariffs globally to levels similar to those prevailing in the late 1990s, prior to the opening up of trade in numerous emerging economies, especially China (see Chart 2).[4] In the model, the increase in protectionism in the United States gives rise to dearer goods and services imports, which diminishes consumer purchasing power, bearing negatively on the external demand of the countries concerned. Potential retaliation may also affect US exports. However, a change in the direction of trade of the countries involved towards third markets, and the capacity of other economies to fill the gap left by US exports, insofar as trade retaliation affects them adversely, lessen these negative impacts. The first scenario considered would give rise to a cumulative reduction in US and Chinese GDP of around 2 pp in 2020. The impact on Mexico is greater, rising to 6 pp in that same year. The exercise, however, does not take into account the change in the trade structure of these three countries as a result of the increase in tariffs and the possible re-targeting of their trade flows towards other areas mentioned earlier. In the second scenario, in which protectionist measures are stepped up forcefully, the effect on global activity would be very marked, resulting in a reduction in global growth of around 0.8-1.2 pp in the 2017-2020 period.

As regards immigration, cross-country flows of people have been growing in a sustained fashion over the past 25 years (see Chart 3). Generally, the sources and destinations of economic migration are determined first, by the prevailing economic and demographic trends; and further, by migration policies in the advanced economies. In future, such policies might in some cases take on a more restrictive bent. In the short term, the greater restrictions on migration may favour the national population segment with a level of educational attainment similar to that of the average immigrant. However, in the longer term, measures of this type entail adverse effects, since they reduce the growth of the labour force and, therefore, of potential output. In addition, the obstacles to immigration reduce a major source of funding for public pensions and health systems for the countries most affected by population ageing. For the countries of origin, emigration entails various different effects, since on one hand it involves a reduction in the population of working age and, in the case of highly skilled migrants, in the economy's human capital; but, on the other hand, it provides a significant source of external financing, by means of the remittances sent to countries of origin.

In terms of capital flows, there has been a notable reduction in recent years as a result of both supply- and demand-side factors, including certain regulatory changes. Moreover, it seems that, among the determinants, global factors or factors external to the recipient country (push factors) increasingly prevail over the idiosyncratic factors of the country itself (pull factors).[5] That would explain the reduction in flows targeted on the emerging economies (see Chart 4), a phenomenon that might restrict headway in their ongoing convergence. In this respect, there is a degree of consensus about the fact that the effects of capital flows for recipient economies depend both on their composition and on the characteristics of these countries. It has been demonstrated that foreign direct investment, which is usually more stable, entails clear benefits in terms of growth and of technology transfer for the emerging countries. Accordingly, with a view to the future it is likely that a reduction in these types of flows, associated, for example, with obstacles to developed economies' companies operating outside their countries of origin, will have a significant impact on the growth of the developing economies.

3 The scenarios are instrumented introducing a rise in import prices and a decline in export volumes, whose scale is calibrated on the basis of bilateral trade exposures and the price elasticities of the demand for imports. The range of elasticities of trade to tariffs corresponds to that estimated in Rubini Loris (2011), *Innovation and the elasticity of trade volumes to tariff reductions,* EFIGE Working Paper 31.

4 That entails a rise in the effective (weighted) average tariff to 5%. In 2012 (the latest available figure) it was 2.9%, according to the World Bank.

5 See, for example, Á. Estrada, L. Molina, P. Sánchez and F. Viani (2017), "Towards efficient capital flow management", *Economic Bulletin*, 1/2017, Banco de España.

As indicated in the main body of the text, Spanish GDP growth over the 2014-2016 period was 3.2 pp greater, in cumulative terms, than envisaged in spring 2014.[1] In the same period, the difference recorded in the euro area as a whole was comparatively much smaller, rising to only 0.3 pp. This box assesses the role played by various factors responsible for the differences between actual and projected growth both in Spain and in the euro area, and the relative scale of these surprises between both economic areas. The factors are, namely, the unforeseen fall in oil and other commodities prices, the more expansionary monetary policy stance, the more relaxed fiscal policy stance and the lower growth of world markets (see Table 1).[2] With the exception of the latter factor, these elements are estimated to have had a more-positive-than-foreseen impact on activity. Further, as the box shows, they all impacted euro area GDP less favourably than they did Spanish output.

With regard to oil prices, the average level in euro stood, for 2015 as a whole, at 32% below the level assumed for that year in spring 2014, although that difference narrowed to 14% in 2016. Given that the demand for energy goods is relatively inelastic, the decline in oil prices entailed a direct increase in household purchasing power, which was earmarked partly for saving and partly for the acquisition of goods and services other than those directly affected by the fall in the price of crude oil. In Spain, this increase in real income is greater than in the euro area, both because the weight of oil derivatives is higher in the household consumption basket and because flat-rate taxes account for a lower proportion of the unit price.[3] Thus, in the two years spanning 2015 and 2016, the energy component of the HICP contributed 0.9 pp to the negative cumulative inflation difference of 1.3 pp vis-à-vis the euro area in terms of the overall indicator.

Moreover, the decline in oil prices leads to a reduction in production costs in industries in which this commodity is an input, which translates into higher margins and into a potential reduction in the prices of final products, in proportions that depend, among other factors, on the degree of competition in the related markets. That said, while the weight of oil in the overall euro area economy's costs structure was, according to the input-output tables, 1.5% in 2013 (the latest year for which this information is available), this proportion amounted to 2.2 % in Spain.[4] Accordingly, oil price fluctuations do not only affect Spanish households' real income more, but they also pass through to production costs to a greater extent. Overall, according to the estimates made, the reduction in oil prices is expected to have contributed 0.6 pp to the growth of euro area GDP in the 2014-2016 period, compared with 1.1 pp in Spain (see Table 1 and Chart 1).[5]

As regards monetary policy, the measures adopted in the last three years, in terms of both conventional and non-conventional

1 The macroeconomic projections of June 2014 prepared by Eurosystem experts for the euro area are the point of comparison.

2 The results presented in this box have been obtained through simulations performed with the macroeconometric models used by the national central banks of the Eurosystem in preparing the aggregate projections for the euro area as a whole and for each of the member countries. In the case of the Spanish economy, this model is the MTBE (the Quarterly Macroeconometric Model of the Banco de España). It is thus possible that a portion of the differences between the results for both areas is due to methodological differences, the precise quantification of which is very complex.

3 See Box 4.2 of the Banco de España 2014 *Annual Report*.

4 Moreover, the use of oil per unit of GDP is higher in Spain than that observed in the euro area. Specifically, although energy consumption per unit of output is similar in both cases, the weight of oil-related products in final energy consumption (50% in the case of Spain) exceeds that in the euro area as a whole by 9 pp. Box 3.2 offers a more extensive view of the Spanish economy's energy dependency.

5 The estimated impacts of the latest decline in oil prices according to the models available should be interpreted with caution. In particular, the models reflect the observed effects on the historical average. In this respect, the positive effect on activity that would arise from the latest episode of lower oil prices might be overestimated, given that monetary policy was unable to react fully to the decline, since nominal interest rates had reached their lower bound. Conversely, nor are the models able to capture the effects of the non-conventional monetary policy.

Table 1
ESTIMATED CUMULATIVE CONTRIBUTIONS OF VARIOUS TEMPORARY FACTORS TO THE CHANGES IN SPANISH AND EURO AREA GDP IN 2014-2016

	2014		2015		2016		Average	
	Spain	Euro area	Spain	Euro area	Spain	Euro area	Spain	Euro area
Cumulative effect on the level of GDP (pp)								
Monetary policy	0.1	0.0	1.0	0.6	1.7	1.5	0.6	0.5
Fiscal policy	0.0	-0.1	0.3	0.2	0.8	0.2	0.3	0.1
Global markets	0.1	0.1	-0.3	-0.8	-1.5	-1.8	-0.5	-0.6
Oil and other commdities prices	0.0	0.0	0.3	0.3	1.1	0.6	0.4	0.2
Total effects	0.2	-0.1	1.2	0.2	2.2	0.6	0.7	0.2

SOURCES: Own estimates based on models used in the Eurosystem's projection exercises.

policies, have contributed to the nominal effective exchange rate depreciating in this period by around 14% and to borrowing costs for agents in the Spanish economy having fallen substantially, a decline which, to end-2016, stands for example at around 230 bp in the case of 10-year government debt and at approximately 70 bp in the case of bank lending to non-financial corporations. On the estimates available[6], these monetary policy measures are estimated to have boosted growth in Spain somewhat more (1.7 pp) than in the euro area as a whole (1.5 pp).[7]

In comparison with what was projected in spring 2014, fiscal policy, in turn, retained a more expansionary stance in the 2014-2016 period, with a greater-than-foreseen deterioration in the cyclically adjusted primary balance, both in the euro area and, especially, in Spain. Specifically, on current estimates, the cumulative deterioration in the cyclically adjusted primary balance in the euro area is estimated to have been 0.3 pp greater than was expected three years earlier, while the scale of this difference in Spain's case is expected to have been 1.8 pp. As a result, this fiscal policy stance is expected to have added 0.8 pp to GDP growth in Spain over these two years as a whole, compared with 0.2 pp in the case of the euro area.

These positive demand-side (monetary and fiscal) and supply-side (oil) impulses are estimated to have more than offset the counteracting effects of the more-unfavourable-than-expected performance of export markets during the period analysed, which is expected – on the estimates made – to have subtracted 1.5 pp from the increase in output in Spain and 1.8 pp in the euro area.[8]

In short, the group of factors considered, which could not be anticipated three years back, is expected to have exerted a positive impact on GDP growth on a greater scale in Spain (2.2 pp) than in the Euro area (0.6 pp). That said, the difference between the GDP growth surprise and the portion explained by errors in the assumptions about how the four foregoing factors would unfold is positive in Spain (1 pp) and negative in the euro area (- 0.3 pp), suggesting the presence of additional causes when explaining the growth differential between both areas during these years. In particular, the positive sign of this difference in Spain's case suggests the existence of idiosyncratic elements having provided an additional boost, encompassing the effects of the reforms implemented in recent years and the correction of imbalances observed since the start of the crisis (see Chapter 2 of the 2015 *Annual Report*).

6 See chapter 3 of the Banco de España 2015 *Annual Report* and P. Burriel and A. Galesi (2016), *Uncovering the heterogeneous effects of ECB unconventional monetary policies across euro area countries,* Working Papers No. 1631, Banco de España.

7 This modest difference could be explained by the success of these policies in reducing the degree of fragmentation of the area's financial markets, which began to become visible following the initial episodes of the European sovereign debt crisis, from 2010, and which affected the group of countries considered as most vulnerable (Spain among them) with particular intensity. In addition, in Spain the easing in conventional monetary policy has had a comparatively greater positive impact on indebted households' income net of interest payments, given the prevalence of variable-rate financing (see Box 1.3).

8 This result is due to the fact that, for the other countries, the composition of the markets is such that, in average terms, they posted a greater decline.

GDP IN SPAIN AND IN THE EURO AREA
Annual rates of change

Chart 1
SPAIN: OBSERVED GDP PATH, PATH PROJECTED IN JUNE 2014 AND CONTRIBUTION OF TEMPORARY FACTORS

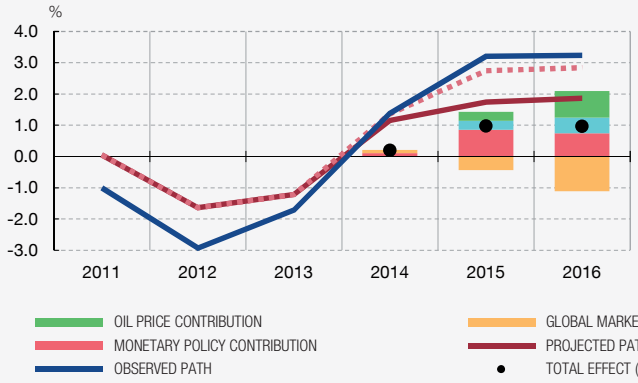
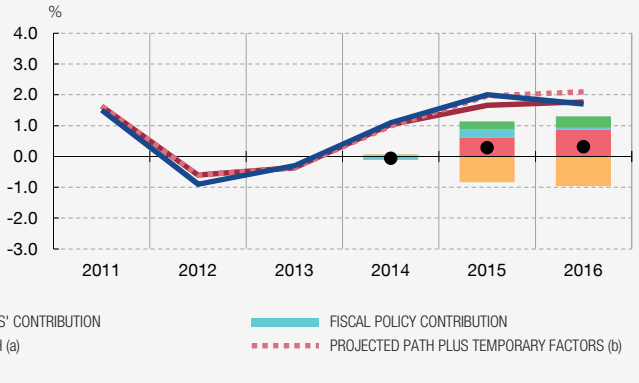


Chart 2
EURO AREA: OBSERVED GDP PATH, PATH PROJECTED IN JUNE 2014 AND CONTRIBUTION OF TEMPORARY FACTORS



SOURCES: Own estimates based on the models used in the Eurosystem's projection exercises.

a "Projected path" refers to that projected in the Eurosystem's June 2014 projections exercise (cut-off date: 21 May 2014).
b "Projected path plus temporary factors" refers to the sum of the path of footnote (a) plus the contribution of the various temporary factors.
c Joint contribution of the four factors. This is the difference between the "Projected path plus temporary factors" and the "Projected path".

This box analyses the impact that a rise in short and long-term interest rates would have on the incomes of Spanish households, firms and general government. In this connection, a three-year horizon (2017-2019) is considered, on the basis of the data observed to end-2016, and a baseline scenario and three other alternatives – including various hypothetical situations involving market interest rate rises – are assessed.

The baseline scenario, which coincides with the baseline projections of the last macroeconomic scenario published by the Banco de España[1], envisages a gradual and moderate rise in market interest rates, in keeping with the expectations implicit in market yield curves. The alternative scenarios, which include hypothetical rises in interest rates, envisage an increase – merely for illustrative purposes – of 100 bp above the levels of the baseline scenario. In the first such scenario, the rise is confined to yields up to a term of one year; in the second, to the medium and long-dated segments of the curve; and in the third, the entire yield curve is shifted upwards. To simplify the exercise, it is assumed in these three scenarios that the macrofinancial variables, such as GDP and the volume of debt or of assets, are not affected by the interest rate shock. Therefore, the effect on agents' incomes comes about exclusively through the impact on interest revenue received on assets and interest payments associated with debt.

To simulate the impact on the average return on deposits and the cost of households' and non-financial corporations' outstanding loans, equations estimated with historical information are used that measure the habitual pass-through from market rates to these yields. In the case of debt securities issued by general government and corporations, the maturity schedule for outstanding debts and future financing needs have been taken into account. It has also been assumed that, in the case of new issues, the proportion of short to long-term securities will be the same as that set by the Treasury for 2017, in the case of general government, and that observed in September 2016, in that of non-financial corporations.

Charts 1 to 3 present the results of the simulations for each of the three sectors analysed. For general government, where the bulk of liabilities have a long-term maturity, the impact of a rise in financing costs is gradual and, comparatively, more marked when this rise is concentrated in the long-dated segment of the curve. Hence, a 100 bp increase in short-term interest rates would translate into a net financial burden that were 0.13 pp higher in relation to GDP than in the baseline scenario at the end of the forecasting horizon, while an increase of the same amount in long-term interest rates would mean a burden 0.27 pp higher. In a scenario in which both rates increase, general government interest payments net of deposit returns would rise by 0.37 pp of GDP compared with the baseline scenario. In any event, the fact that the effect of the cuts observed to date in market yields has not fed through in full yet to average costs, owing to the long average duration of debt (around six years), means that the impact in the short and medium term of the potential interest rate rise would be offset by the progressive maturing of liabilities with a significantly higher cost. Specifically, in the foregoing example, in which the entire yield curve rises 100 bp, net interest payments relative to GDP would continue to stand throughout the projection horizon at levels that would not exceed those recorded in late 2016. Logically, increases in interest rates on a greater scale than that considered in the foregoing exercises or a higher level of public debt would lead the net general government interest burden to stand at levels higher than current ones.

As observed in Chart 2, the business sector's net interest burden is more sensitive to increases in short-term than in long-term interest rates, which reflects the prevalence of financing with a near-dated maturity and at a floating rate. This same characteristic means that the pass-through of market interest rate movements to the average costs of outstanding balances is swifter than in the case of general government, although less so than in the recent past, owing to the significant deleveraging of the sector in recent years. Specifically, a 100 bp rise in money market interest rates would result in an increase in the sector's gross financial burden of 1.98 pp relative to its gross operating surplus (GOP) at the end of the forecasting horizon, and of 1.56 pp in net interest paid (i.e. having discounted the increase in the return on deposits from the higher payments associated with liabilities). In the case of a rise in long-term interest rates, the net (and gross) financial burden would scarcely increase by 0.1 pp. Combining the two shocks gives a net impact of 1.66 pp of GOP at the end of three years (and of 2.08 pp in gross terms). Unlike with general government, in the scenarios that envisage interest rate rises, the net financial burden would ultimately stand above the level recorded at end-2016, which reflects the fact that the room for lowering the average costs of financing has practically been exhausted.

In the case of households, given the prevalence of variable-rate financing and the short duration of deposits, financial expenses and revenue are fundamentally linked to the changes in short-term interest rates and practically insensitive to changes in the long-dated segment of the yield curve. Specifically, the impact associated with a 100 bp increase in short-term interest rates on payments for interest on debt incurred would amount to 0.7 pp of gross disposable income (GDI) at the end of the horizon considered (see Chart 3). If the effect of this hypothetical increase in rates on the sector's net income is taken into consideration, the impact is more moderate, at scarcely 0.15 pp of GDI. That reflects the fact that, for the sector as a whole, the higher payments for interest on debt incurred (equivalent to 0.70 pp of GDI at the end of the horizon considered) are practically offset by the increase in the return on the sector's deposits (0.55 pp of GDI) (see Chart 4). In this respect, notable household deleveraging in recent years has contributed to the substantial moderation in the negative income effect associated with increases in interest rates.

1 See Box 1 of the "Quarterly report on the Spanish economy", *Economic Bulletin*, 1/2017, Banco de España.

Chart 1
GENERAL GOVERNMENT. NET FINANCIAL BURDEN (a)

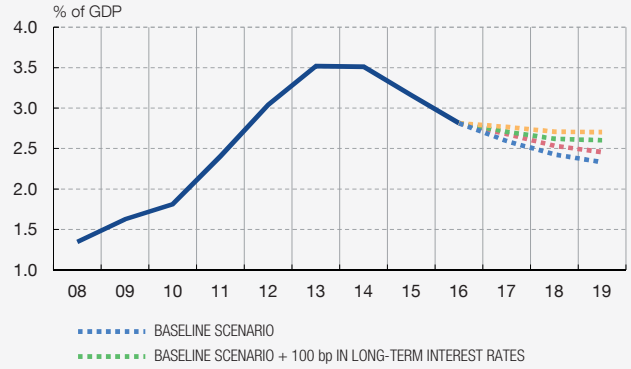


Chart 2
NON-FINANCIAL CORPORATIONS. NET FINANCIAL BURDEN (a)

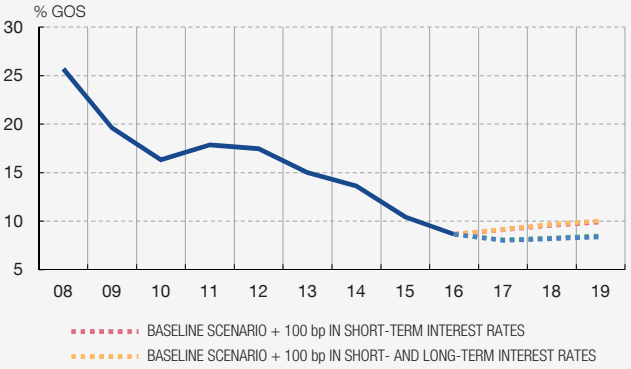


Chart 3
HOUSEHOLDS. NET FINANCIAL BURDEN (a)

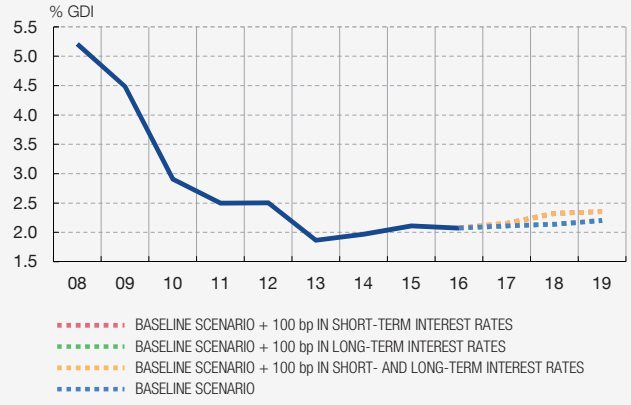


Chart 4
HOUSEHOLDS. FINANCIAL CHARGES AND REVENUE

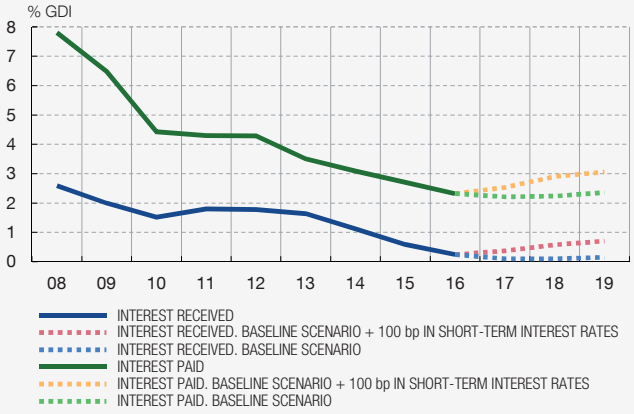


Chart 5
AVERAGE NET IMPACT OF THE 100 bp RISE IN INTEREST RATES ON HOUSEHOLD INCOME. BREAKDOWN BY AGE OF HOUSEHOLD HEAD (b)

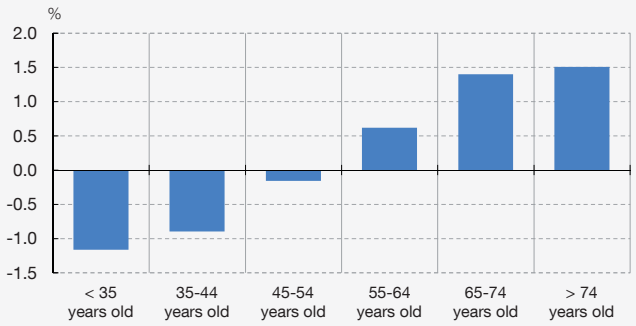
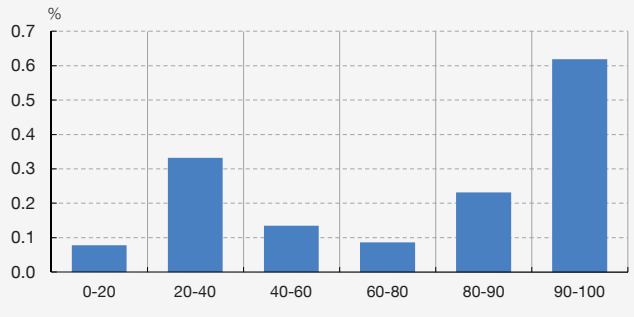


Chart 6
AVERAGE NET IMPACT OF THE 100 bp RISE IN INTEREST RATES ON HOUSEHOLD INCOME. BREAKDOWN BY INCOME PERCENTILE (b)



SOURCES: Spanish Survey of Household Finances (2014), INE and Banco de España.

a Interest paid on financing received less interest return on deposits.
b The net impact is defined as: (Increase in interest revenue on term deposits - Increase in debt service charges) / Household income. The increase in debt service charges is calculated for households with flexible rate debts. The increase in deposit interest revenue is calculated for all households holding one or more deposits, the impact being in the case of sight deposits +15 bp instead of +100 bp.

In any event, it should be borne in mind that these aggregate impacts within the household and corporate sectors may be masking a highly heterogeneous distribution that may have considerable consequences for the resulting influence on spending decisions. Thus, for example, in the case of households, the impact on consumption of the income effects linked to increases in interest rates will depend not only on what the size of these effects is for the sector as a whole (which, as seen, will foreseeably be limited), but also on the extent to which these effects change across population groups with a different marginal propensity to consume. The disaggregated information from the Spanish Survey of Household Finances reveals that an increase in interest rates (specifically short-term rates) would have a negative influence on the income of those households whose head is in the lower age brackets (see Chart 5), which are those in which, in principle, the marginal propensity to consume is higher. Countering this, the impacts would be positive in the older groups, where the prevalence of debt is less. An analysis in terms of the household's income level shows that the average impacts of increases in interest rates would be positive and for a low amount in all income brackets,[2] albeit slightly greater in the groups in which income is higher, where the households with a lesser marginal propensity to consume are to be found (see Chart 6).[3] These results therefore suggest that, in the case of households, the impact on consumption associated with the income effects of increases in interest rates would be somewhat more unfavourable than inferred from the analyses based on aggregate data.

2 Unlike in the aggregate analysis in Chart 3, the aggregate impact that may be inferred from the analysis of the Spanish Survey of Household Finances (EFF) / (Charts 4 to 6) is slightly positive (increase in incomes). That is due to the fact that in this latter case there has been an assessment exclusively of the effect on households of the latest wave of the Survey, assuming that debts are not rolled over. Conversely, in the aggregate exercise, it is implicitly assumed that a portion of the debts are rolled over under market conditions.

3 An analysis in terms of the levels of net wealth shows that the average impacts of interest rate rises on net household incomes would grow commensurately with net worth (negatively for households in the two lower quartiles of the distribution of this variable and positively and increasingly in terms thereof in the upper half of the distribution).

2 FINANCING AND INVESTMENT DECISIONS OF SPANISH NON-FINANCIAL CORPORATIONS

Summary

Financial factors have played a significant role in the recent recovery of investment of Spanish non-financial corporations. On the one hand, the improved economic and financial position of firms has contributed to increasing the funds available to pursue their investment projects. Specifically, the higher level of corporate saving has favoured internal financing, while the healthier balance sheets of firms (deleveraging) and better profitability prospects have improved their access to external funds. On the other, the strengthening of the balance sheets of banks, the main suppliers of funds, following the restructuring and recapitalisation process undertaken by the sector, has had a similar impact, by removing some of their obstacles to lend. Thus, the proportion of Spanish firms facing external financing constraints which, at the height of the crisis, was far higher than that observed in the euro area as a whole, has gradually diminished, eventually converging to the average euro area level.

This aggregate view arises from widely differing realities within the business sector. During the phase of economic recovery, a significant, albeit declining, proportion of firms, characterised by a comparatively weaker financial position, were still immersed in deleveraging processes and their volume of investment was insufficient to cover amortisation of their fixed capital. However, there is also a growing number of firms with a sounder financial position which have used external financing to expand their productive capacity.

In recent years, the allocation of credit has been more efficient than that observed before the crisis. In particular, funds tend to head towards more productive firms and those with a comparatively sounder economic and financial position. Supply factors seem to have played a role in this respect, since there is evidence that banks have improved their selection of borrowers compared to the situation prevailing before the crisis. This change in the attitude of intermediaries could be related to the experience of the crisis, which had a very strong impact on this sector, and to the regulatory changes introduced in response to it. In particular, the regulatory requirements applied to credit institutions have tightened significantly worldwide to reflect the actual level of risk assumed by them. Although, in the short term, these measures may have given rise to a reduction in the supply of bank credit and to higher financing costs, and may have also encouraged a degree of disintermediation, they would be expected to have given the financial system more stability and to have contributed to the improved selection of borrowers observed in recent years.

Lastly, a process of disintermediation of financing of Spanish firms is under way. Although this is a global phenomenon, it has been somewhat more pronounced in Spain, where the use of banking services has traditionally been higher than in other European economies. The greater diversification of sources of financing may help to make firms less vulnerable to potential shocks from a variety of sources. That said, the disintermediation process is mostly limited to large companies.

1 Introduction

From the start of the recovery of the Spanish economy, private productive investment has shown notable dynamism, in a setting of intense deleveraging among non-financial corporations as a whole. It is therefore interesting to analyse the instruments used in recent years to finance the increase in gross fixed capital formation in the Spanish economy and, to this end, the overall picture provided by aggregate data must be complemented with an analysis of more granular information. This approach will help

address certain important issues such as identifying the characteristics of firms with greater investment momentum, the source of funds for investment and changes in the degree of access to external financing[1] and in its determinants.

The deleveraging of non-financial corporations at the aggregate level in recent years has proved compatible with the reallocation of financing flows among firms and with certain changes in the corporate financing channels. In this context, it is important to analyse the characteristics of firms receiving new credit and to determine whether the degree of efficiency with which it is allocated has improved in the recent period, that is to say, to what extent is credit earmarked for firms in a more favourable economic and financial position.

In recent years, there has been a process of disintermediation of financing of firms, as a result of which the relative weight of bank credit has diminished. It is therefore of interest to study the recent increase in the degree of diversification of the sources of corporate financing, in an environment in which certain factors, both temporal and structural, are contributing to the growing role of financial markets in channelling resources directly to non-financial corporations.

This chapter analyses the link between the investment and financing of Spanish non-financial corporations in recent years. Specifically, Section 2 discusses how the gross capital formation of Spanish firms was financed during the phase of economic recovery which started in the latter half of 2013, and how this was affected by changes in the degree of access to external financing. Section 3 focuses on the importance of firms' funding structure for their investment choices and on how recent developments have affected the path and future prospects of gross capital formation in the Spanish economy.

2 The role of financing in the recent recovery of investment of non-financial corporations

Private productive investment has played a significant role in the current phase of recovery of the Spanish economy, which began in the latter half of 2013. Specifically, this national demand component accounted for more than a fifth of GDP growth between 2014 and 2016 (see Chart 2.1)[2] . The notable buoyancy of this aggregate is a distinguishing factor with respect to other euro area economies, in which the economic recovery is proving weaker and more sluggish, partly weighed down by the low dynamism of gross fixed capital formation. The sound performance of private productive investment in Spain which, in keeping with its markedly procyclical nature, has had higher growth than that of GDP, is particularly significant in a context in which Spanish non-financial corporations have been immersed in a process of deleveraging, which has to date been underpinned by negative financing flows (which are progressively more moderate). Against this background, it is important to analyse the instruments used to finance the gross fixed capital formation of Spanish firms in recent years and the changes in the degree of access to external financing.

2.1 INVESTMENT AND FINANCING FLOWS OF NON-FINANCIAL CORPORATIONS

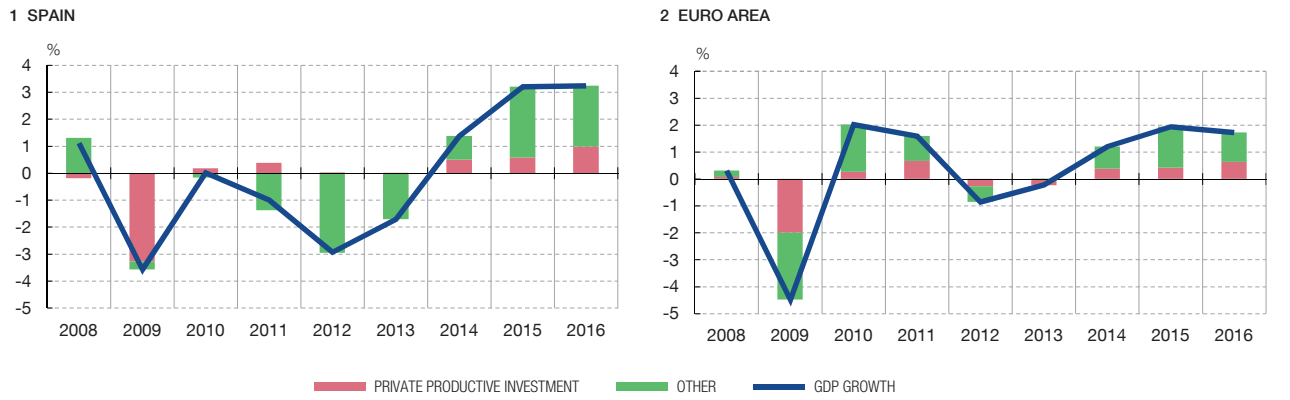
At the aggregate level, the main source of financing for productive investment in recent years was the gross saving of non-financial corporations. According to Spanish National Accounts data, the gross fixed capital formation of non-financial corporations rose from 25% of gross value added (GVA) of this sector in 2013 to nearly 28% in 2016, a

1 External financing refers to the funds that do not come from firms' self-financing derived from retained earnings.

2 By component, the recovery has been particularly pronounced in investment in capital goods and transport equipment which, on average and in real terms, grew by 7% and 10%, respectively, in the three years from 2014 to 2016. Investment in intellectual property products also increased, albeit to a lesser extent (by 3%, on average, in the same period).

CONTRIBUTIONS TO GDP GROWTH

CHART 2.1



SOURCES: Instituto Nacional de Estadística (INE), ECB and Banco de España.

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figure which is still below those posted before the crisis when values close to 35% were reached. This development has taken place in a context of recovery of firms' internally generated funds, boosted by the increase in their GVA, the contention of staff expenses and the fall in financial costs.[3] Thus, the gross saving of non-financial corporations increased substantially, from 25% of GVA in 2011 to 32% in 2016, historical highs far exceeding those observed after the recession of the 1990s and, in general, in recent decades (see Chart 2.2, left-hand panel). In fact, gross saving in the sector has been higher than fixed capital investment in recent years, giving rise to a net lending capacity in the sector as a whole.

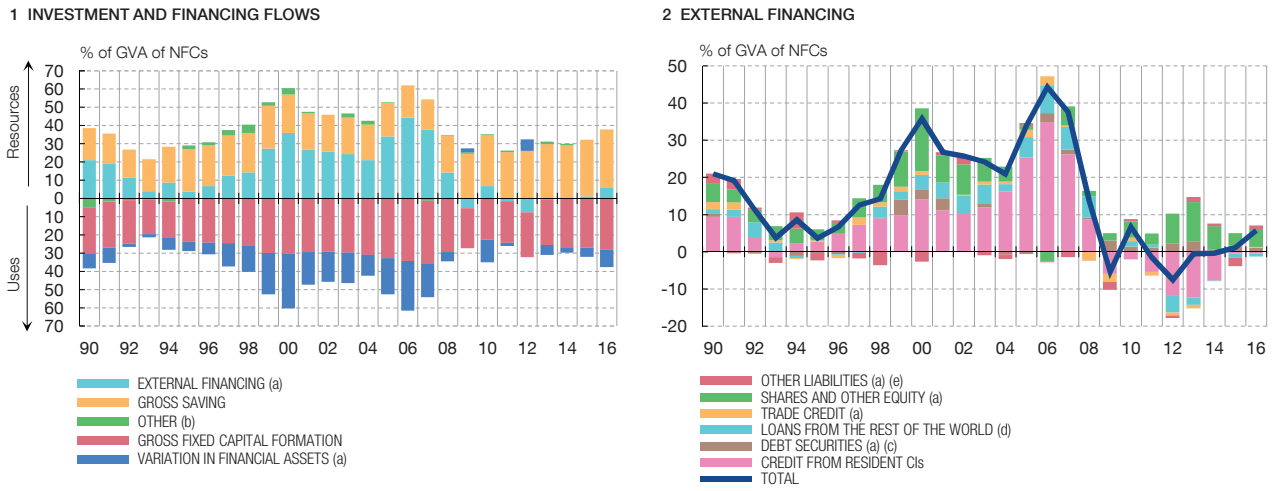
In contrast, at aggregate level, the recourse to external financing was virtually zero in net terms during the current recovery phase, except for in 2016, when it came to represent the equivalent of 5.7% of the sector's GVA. Until 2015, corporate saving not earmarked for financing productive investment stood at levels similar to the net acquisition of financial assets by the sector,[4] which, in any event, was somewhat lower than that recorded during the recovery following the crisis of the 1990s and substantially lower than that observed between the end of the 1990s and the mid-2000s, when some Spanish multinationals underwent international expansion processes. Thus, until 2015, non-financial corporations as a whole covered the bulk of their acquisition of financial and real assets with internally generated income.

The recourse of non-financial corporations to external financing in recent years was lower than that observed following the crisis of the 1990s, with differences in the composition by instrument. Although the bulk of the sector's external financing

3 The growth of corporate income which, in real terms, was higher than in the latter half of the 1990s, was not only underpinned by the growth of the GVA generated by the sector, but also by the higher business margins, which, in turn, may have been boosted by the need for deleveraging persisting at non-financial corporations at the beginning of the current recovery phase. J.M. Montero and A. Urtasun (2014) have found evidence of the existence of a positive association between the degree of financial pressure in each sector, measured through the debt ratio, and the growth rate of mark-ups over marginal cost (see "Price-cost mark-ups in the Spanish economy: A microeconomic perspective", Working Paper 1407, Banco de España).

4 For the analysis in this section based on data from the Financial Accounts of the Spanish Economy, the consolidated flows of non-financial corporations as a whole are used. Specifically, only the asset and liability flows of firms vis-à-vis other sectors are considered.

INVESTMENT AND FINANCING OF NON-FINANCIAL CORPORATIONS. AGGREGATE DATA CHART 2.2



SOURCES: INE and Banco de España.

a Flows compared with sectors other than non-financial corporations.
b Includes net capital transfers less the difference between the financing ability/need and net financial operations.
c Includes net securities issues by subsidiaries of non-financial corporations.
d Excludes trade credit and securities issued by resident subsidiaries in the rest of the world.
e Includes statistical adjustments.

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was channelled through own funds in the two episodes of economic recovery, the amount of these funds (specifically that relating to unlisted shares and other equity) has been particularly high during the current recovery phase (see Chart 2.2, right-hand panel). Specifically, between 2013 and 2016, the external financing through own funds of non-financial corporations overall was, on average, 6.3% of the sector's GVA, almost 3 percentage points (pp) more than in the four years from 1993 to 1996.[5] However, debt has continued to contract in recent years, in contrast with the trend observed in the recovery of the 1990s. The then low level of debt of the corporate sector (below 45% of GDP) made it easier to obtain this type of financing, and the funds channelled in this way represented, in annual average terms, close to 2% of corporations' GVA between 1993 and 1996. The pace of debt accumulation then intensified during the expansionary cycle preceding the crisis that began in 2008, and reached 45% of GVA in 2006, giving rise to excessively high levels of corporate debt which had to be subsequently adjusted. The flow of interest-bearing financing raised by firms has effectively been negative since 2009, although from 2013 this decline has gradually steadied, to virtually zero in 2016.

These aggregate financing and investment flows may be the result of very diverse behaviour within the corporate sector. It is therefore necessary to carry out a study at firm level in order to properly assess the investment behaviour of Spanish non-financial corporations in recent years, how it relates to internal and external financing flows and the role of the financial position in explaining recent investment developments.

According to the Integrated Central Balance Sheet Data Office Survey (CBI, by its Spanish abbreviation) of the Banco de España,[6] the proportion of firms making

5 The volume of own funds raised would include amounts arising from the conversion of debt into capital observed at some firms, a process which has acquired greater importance in recent years.
6 The CBI contains microeconomic data for some 600,000 firms per year, which facilitates the study of recent developments in the investment and financing flows of firms at a disaggregated level.

investments has risen in recent years. This proportion, which was close to 51% at SMEs and 54% at large firms in 2013, when the lowest levels were recorded since the onset of the most recent crisis, had risen by 3 pp and 5 pp, respectively, by 2015 (the last financial year available). The proportion of firms that invested amounts similar to or higher than the amortised capital (that is, those with positive net investment[7]) has also risen in recent years, to slightly more than 45% in both segments in 2015 (see Chart 2.3).

The recovery of gross capital formation can also be explained by the increase in the average amount of investment by firms. The top panels in Chart 2.3 show that the gradual recovery of this variable at the aggregate level in recent years has arisen not only from the higher proportion of firms that have expanded their productive capacity (that is, whose investment exceeds the amortised capital), but also from the increase in the average amount of investment. In parallel, gross investment of firms subject to decapitalisation processes continued to fall until 2014, to recover in 2015 (see Chart 2.3, bottom panels).

Firms with positive net investment made use of both internal and external financing. With respect to the latter, they raised funds both through capital increases and borrowing, the latter in contrast to the contraction of debt at aggregate level in the same period (see Chart 2.3). The relative importance of capital increases was comparatively higher in the case of large firms, while SMEs had greater recourse to borrowing.

The recourse to debt financing by firms with positive net investment was favoured by their comparatively healthier financial position vis-à-vis other firms. Specifically, these firms had, on average, lower levels of debt and a smaller debt burden. In addition, they were more productive and exhibited greater sales momentum. This would seem to indicate that the financial position of firms may have been a factor determining their investment choices. The results obtained from estimating a linear probability model also appear to point in that direction. Specifically, as shown in Table 2.1, the estimated probability of a firm having positive net investment depends positively on the growth of its sales, its productivity and its profitability in the previous year,[8] and negatively on its debt burden and level of debt (also in the previous year). Moreover, the contractionary impact of the latter on the probability of a firm recording net investment higher than or equal to zero appears to have increased following the crisis. These results are consistent with evidence found in the literature regarding the impact of financial factors on investment, which shows that a less sound financial position (for example, arising from excessively high levels of debt or debt burden), when controlled for firms' profitability, translates into lower investment levels, particularly if the financial pressure faced by firms exceeds a certain threshold.[9]

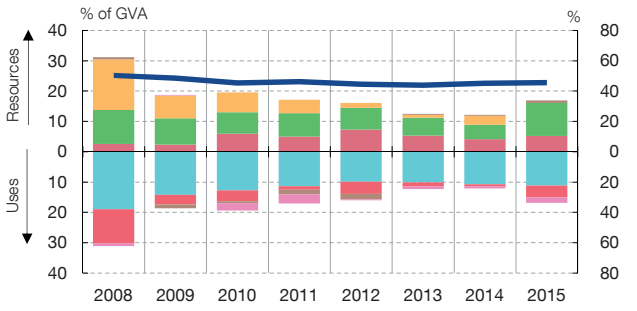
In contrast, firms with negative net investment reduced, overall, their levels of debt. This reduction was underpinned by an increase in own funds, by means of capital increases (especially in the case of large firms) and internal saving. In the case of SMEs, deleveraging was also underpinned by divestments of fixed capital stock, a characteristic not observed at large firms, which presented positive (albeit low) gross capital formation in all the years under review. It was also observed that, overall, firms with negative net investment increased

7 This group also includes those with zero net investment.

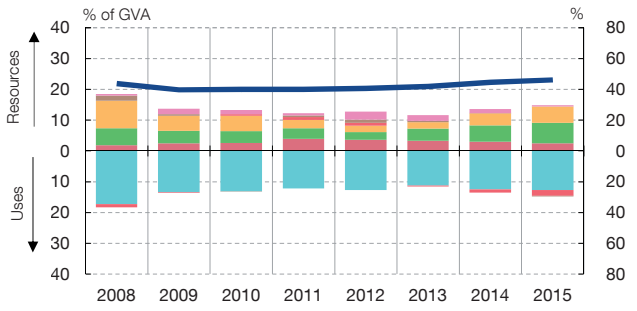
8 The relationship between profitability and investment was not significant during the crisis period, unlike other years.

9 For international evidence, see, for example, V. A. Aivazian, Y. Ge and J. Qiu (2005), "The impact of leverage on firm investment: Canadian evidence", *Journal of Corporate Finance,* 11, pp. 277-291 and L. Lang, E. Ofek and R. M. Sulz (1996), "Leverage, investment, and firm growth", *Journal of Financial Economics, 40*, pp. 3-29. For Spanish evidence, see F. Herranz and C. Martínez Carrascal (2017), "The impact of firms' financial position on fixed investment and employment. An analysis for Spain", Working Paper 1714, Banco de España.

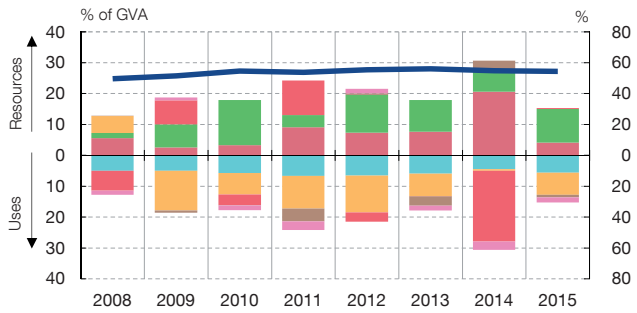
1 ASSET AND LIABILITY FLOWS OF LARGE FIRMS WITH ZERO OR POSITIVE NET INVESTMENT (a) (b)



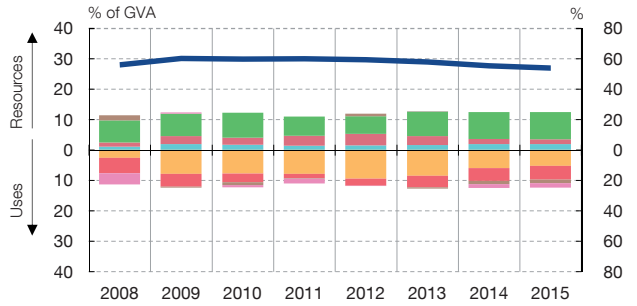
2 ASSET AND LIABILITY FLOWS OF SMEs WITH ZERO OR POSITIVE NET INVESTMENT (a) (b)

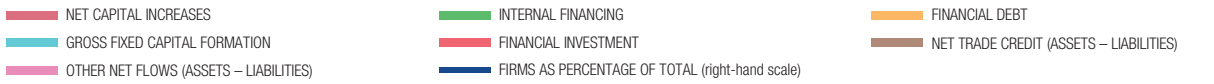


3 ASSET AND LIABILITY FLOWS OF LARGE FIRMS WITH NEGATIVE NET INVESTMENT (a) (b)



4 ASSET AND LIABILITY FLOWS OF SMEs WITH NEGATIVE NET INVESTMENT (a) (b)





SOURCE: Banco de España.

a Net investment is understood to be the flow of gross fixed capital formation (tangible and intangible) net of capital consumption.
b Definition of sizes in line with European Commission Recommendation (2003/361/EC).

their holdings of financial assets, especially cash and deposits, which may suggest that this group of firms includes certain firms whose limited investment effort responded more to insufficient or uncertain profitability prospects than to a lack of funds to finance investment.

In recent years, the proportion of firms which have maintained or increased their outstanding balance of bank credit has risen. In line with previous results, according to the data of the Banco de España's Central Credit Register (CCR), which provide information on individual loans of more than €6,000 at the borrower level, the proportion of firms whose outstanding balance of bank financing did not decline began to rise in 2013. In 2016, this proportion was 43%, 8 pp higher than the lowest levels posted in 2012, although below the high levels of close to 52% observed in the years of strongest credit growth (see Chart 2.4, panel 2).

Firms whose outstanding balance of bank financing has not declined have a sounder financial and economic position than those which have reduced their level of debt. Specifically, these firms have higher profitability and a lower level of debt and debt burden, with more buoyant activity (proxied by the volume of sales) and higher levels of total factor productivity (see Chart 2.4, bottom panels). In addition, the differences in the indicators of the economic and financial position of these groups of firms seem to have become more

DETERMINANTS OF THE PROBABILITY OF A FIRM HAVING NET INVESTMENT HIGHER THAN OR EQUAL TO ZERO (a) (b)

TABLE 2.1

	Impact on the probability of zero or positive net investment		
	Coefficients for 2005-2007	Coefficients for 2008-2013	Coefficients for 2014-2015
Profitability$_{it-1}$	0.030***	-0.006	0.024***
Debt burden$_{it-1}$	-0.009***	-0.012***	-0.009***
Indebtedness$_{it-1}$	-0.038***	-0.065***	-0.058***
Sales growth$_{it-1}$	0.041***	0.032***	0.032***
Total factor productivity$_{it-1}$	0.035***	0.010***	0.041***
Firms	379,134	534,943	293,894
Observations	739,276	1,612,670	401,993

SOURCE: Banco de España.

a Marginal impacts obtained by estimating a linear probability model using the fixed effect method, with standard errors corrected and clustered at firm level. The estimation is made using data from the Integrated Central Balance Sheet Data Office Survey for 2005-2015. All regressions control for firm sector, year and size. *, ** and *** indicate significance for confidence levels of 90%, 95% and 99%, respectively.

b The variable to be explained takes a value of one if net investment is higher than or equal to zero and of zero if otherwise. Profitability is defined as the ratio between a firm's gross operating profit and its average volume of assets in the period considered; the debt burden, as the ratio between interest payments on financing received and gross income (sum of gross operating profit and financial revenue); and indebtedness, as the debt-to-assets ratio.

accentuated in recent years, also within each sector. In the specific case of total factor productivity, that of firms whose credit did not contract is statistically higher than that of other firms across all branches of activity, and the differences between the two groups have increased with respect to the pre-crisis period when the productivity gap between them was not significantly higher or lower than zero in some sectors. Likewise, the results of a linear probability model show that the contractionary impact of indebtedness on the probability of a firm increasing or maintaining its credit levels increased following the crisis (see Table 2.2)[10]. These results therefore suggest that the aggregate contraction in the outstanding balance of bank financing of non-financial corporations is compatible with a more efficient reallocation of credit within sectors, with credit channelled, on average, towards corporations with higher productivity and those in a better position to absorb a higher level of debt.

2.2 ACCESS TO EXTERNAL FINANCING

Access to external financing, a major factor determining firms' investment decisions, may also affect other variables such as current assets, growth of sales or personnel hires. Evidence of such effects in Spain and the euro area in the period from 2014 to 2016[11] is presented in Box 2.1. The extent of these effects is generally found to be similar in both areas. Specifically, the estimation results show that constraints on access to bank financing (that is, difficulties in obtaining funds in the form of bank loans or credit facilities) increase the

10 When firms' productivity and profitability are also included as variables in the model specification, no positive (and significant) impact on the probability of them increasing or maintaining their outstanding balance of credit is observed, possibly owing to their correlation with other variables included in the specification.

11 This evidence is consistent with that found in other developed economies. See, for example, T. Hoshi, A. Kashyap and D. Scharfstein (1991), "Corporate structure, liquidity and investment: Evidence from Japanese industrial groups", *The Quarterly Journal of Economics,* 106 (1), pp. 33-60 (Japan); S. Fazzari and B. Petersen (1993), "Working capital and fixed investment: New evidence on financing constraints", RAND Journal of Economics, 24 (3), pp. 328-342 (United States); S. Fazzari, R. Hubbard and B. Petersen (1998), "Financing constraints and corporate investment", *Brookings Papers on Economic Activity* 1, pp.141-19 (United States); F. Schiantarelli (1996), "Financial Constraints and Investment: Methodological Issues and International Evidence", *Oxford Review of Economic Policy* 12, pp. 70-89 (international evidence); S. Cleary (2006), "International corporate investment and the relationships between financial constraints measures", *Journal of Banking & Finance* 30(5), pp. 1559-1580 (Australia, Canada, France, Germany, Japan, United Kingdom and the United States); A. Buca and P. Vermeulen (2015), "Corporate investment and bank-dependent borrowers during the recent financial crisis", ECB Working Paper 1859 (Germany, France, Italy, Spain, Belgium, Portugal).

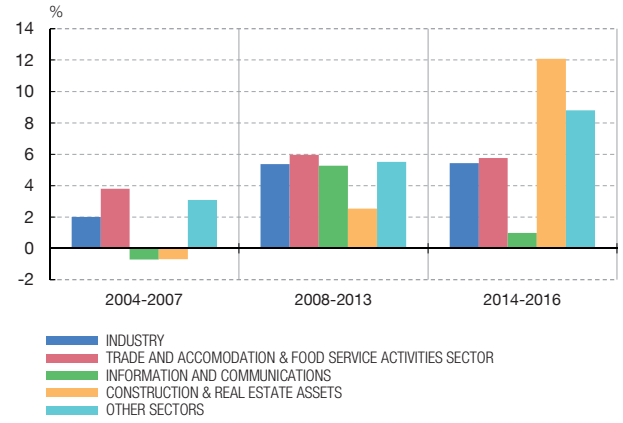
REALLOCATION OF CREDIT AMONG FIRMS

CHART 2.4

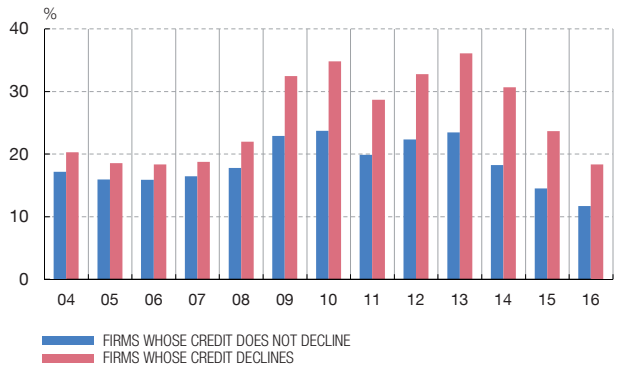
1 FINANCING TO NON-FINANCIAL CORPORATIONS. YEAR-ON-YEAR RATE OF CHANGE

2 PROPORTION OF FIRMS WHOSE CREDIT DOES NOT DECLINE

3 AVERAGE DIFFERENCE IN TOTAL FACTOR PRODUCTIVITY, IN t-1, BETWEEN FIRMS WHOSE CREDIT IS NOT DECLINING AND THOSE WHOSE CREDIT DECLINES (a)



4 MEDIAN OF NON-FINANCIAL CORPORATIONS' FINANCIAL BURDEN (t-1) (b)



SOURCE: Banco de España.

a The calculations have been made using cross-matched information from the CCR (Central Credit Register) and the CBSO (Central Balance Sheet Data Office). Total factor productivity measures the relationship between the use of productive factors and the amount of output obtained, and approximates the level of efficiency of the firm. It is obtained drawing on regressions made at the sectoral level of the logarithm of real gross value added over the logarithms of total capital, inputs and employment (time fixed effects are also included). An approximation is thus attained of the weights of capital and employment in the production function, providing for calculation of total factor productivity at the level of the firm. The chart plots the differences of the sectoral medians, once they have been normalised, taking as a reference the value of the median productivity of firms whose credit declines.

b The debt burden is defined as the ratio between interest payments on financing received and gross income (sum of gross operating profit and financial revenue).

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probability of declines in investment, working capital and business growth, measured both in terms of the number of employees and of sales (although in the case of the latter, estimation of the effects is less precise), and lower the probability of these variables increasing.

External financing constraints are generally more common in certain types of firms.[12] There is usually a negative link between a firm's size and the probability of it facing such constraints, although some papers have failed to find a strong correlation between these two variables. Also, there is evidence to suggest that financing constraints are inversely related with both a firm's age and total factor productivity . High-growth and innovative firms typically have more limited access to external funds. All these

12 For evidence on how external financing constraints vary depending on firms' characteristics, see, for example, T. Beck, A. Demirgüç-Kunt, L. Laeven and V. Maksimovic (2005), "Financial and Legal Constraints to Firm Growth: Does Firm Size Matter?", Journal of Finance, Vol. 60, No 1, pp. 137-177; T. Beck, A. Demirgüç-Kunt, L. Laeven and V. Maksimovic (2006), "The determinants of Financing Obstacles", Journal of International Money and Finance, Vol. 25:6, pp. 932-952; A. Ferrando and N. Griesshaber (2011), "Financing Obstacles among Euro Area Firms: Who Suffers the Most?" ECB Working Paper 1293; European Investment Bank (2016), "Investment and Investment Finance in Europe. Financing productivity and growth".

DETERMINANTS OF THE PROBABILITY OF A FIRM MAINTAINING OR INCREASING THE AMOUNT OF ITS BANK CREDIT (a) (b) TABLE 2.2

	Impact on the probability of increasing or maintaining bank credit		
	Coefficients for 2005-2007	Coefficients for 2008-2013	Coefficients for 2014-2015
Debt burden$_{it-1}$	-0.018***	-0.013***	-0.012***
Indebtedness$_{it-1}$	-0.188***	-0.232***	-0.216***
Sales growth$_{it-1}$	0.022***	0.015***	0.016***
Employment growth$_{it-1}$	0.015***	0.015***	0.021***
Firms	318,314	444,175	225,666
Observations	596,027	1,249,630	304,013

SOURCE: Banco de España.

a Marginal impacts obtained by estimating a linear probability model using the fixed effect method, with standard errors corrected and clustered at firm level. The estimation is made using data from the Integrated Central Balance Sheet Data Office Survey for 2005-2015. All regressions control for firm sector, year and size. *, ** and *** indicate significance for confidence levels of 90%, 95% and 99%, respectively.

b The variable to be explained takes a value of one if net investment is higher than or equal to zero and of zero if otherwise. Profitability is defined as the ratio between a firm's gross operating profit and its average volume of assets in the period considered; the debt burden, as the ratio between interest payments on financing received and gross income (sum of gross operating profit and financial revenue); and indebtedness, as the debt-to-assets ratio.

characteristics which make access to external financing more difficult for firms are directly or indirectly related to the greater risk perceived by lenders, to problems of information asymmetries or to the reduced availability of assets that may be used as collateral in financing operations.

The Survey on the Access to Finance of Enterprises (SAFE) allows for analysis of developments in the degree of access to external financing of non-financial corporations in Spain and the euro area. This survey has been conducted on a six-monthly basis by the European Central Bank (jointly with the European Commission once a year) since 2009, covering a broad range of European firms (between 12,000 and 18,000, depending on the edition), mainly SMEs.[13] Based on the survey results, various indicators of constraints on access to external financing can be constructed for the main types of financing: bank loans, credit facilities, trade credit and other financing (leasing, factoring, debt issues, shares, loans from other firms). In the research based on this database, a distinction is normally drawn between objective and subjective external financing constraints.[14] Among the objective constraints, two alternative indicators (narrow and broad) are defined. The first of these considers that a firm has restricted access if its request for financing has been rejected. The second adds the following three circumstances: the firm has not requested financing fearing that it would not be granted, the firm has obtained financing but has received less than 75% of the amount originally requested, and the firm has rejected the lender's offer since it considers that the interest rate is too high. Subjective constraints are proxied on the basis of the replies to a survey question in which firms assess whether access to financing is a major obstacle to their activity, assigning a rating from 1 to 10 (where 1 is irrelevant and 10 highly significant).

In recent years, there has been a significant drop in the proportion of Spanish firms facing bank financing constraints. This development follows on from the high levels

13 For more details on the survey, see European Central Bank (2016), "Survey on the access to finance of enterprises. Methodological information on the survey and user guide for the anonymized micro dataset". The European Central Bank publishes a six-monthly report on the main results of the survey. These reports are available at: https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/index.en.html.

14 See C. Artola and V. Genre (2011), "Euro area SMEs under financial constraints: Belief or reality?", CESifo WP 3650.

reached in the worst years of the crisis, far exceeding those observed in the euro area overall. Thus, according to the broad indicator, the percentage of Spanish firms facing constraints in accessing bank loans fell from 24% in 2012 to 11% in 2016, reducing the gap with the euro area from 12 pp to 2 pp (see Chart 2.5, Panel 1).[15] The same trend was observed with respect to credit facilities and the narrow indicator of constraints (see Chart 2.5, Panels 2 and 3). Specifically, in 2012, around 17% of firms in Spain had had their requests for bank loans rejected (compared with 10% in the euro area), while in 2016 this proportion had declined to 4%, slightly below the euro area figure.

The degree of access of Spanish firms to other types of financing has also tended to converge towards average euro area levels. Thus, according to the broad indicator, in 2012 around 18% of Spanish firms faced constraints in their access to trade credit, while this figure was 7% in 2016, slightly below that of the euro area (see Chart 2.5, Panel 4). As regards "other types of financing" (leasing, factoring, debt issues, shares, loans from other firms), 12% of Spanish firms stated that they faced constraints in 2011, compared with 7% in 2016, just 1 pp above the euro area level, compared with a difference of 5 pp five years earlier (see Chart 2.5, Panel 5).

The subjective financial constraints indicator draws similar conclusions. Thus, in 2011, the average Spanish firm assigned the problem of access to financing a rating of 6.4 points (on a scale of 1 to 10 in importance), 1 pp higher than the corresponding value for the euro area, whilst in 2016, the indicator had dropped to 4.6 points, a level similar to that of the euro area (see Chart 2.5, Panel 6).

A regression analysis controlling for firm-level characteristics confirms these results. Some of the differences in the degree of access to external financing between Spanish and euro area firms may be due to their different characteristics. In order to isolate these factors, a regression analysis controlling for this factor was conducted. This analysis shows that the probability of facing constraints in access to bank financing (loans and credit facilities) was similar in Spain and the euro area in 2016 when using the broad indicator, and slightly lower in Spain when using the narrow indicator. When this exercise is applied to trade credit and "other types of financing", it reveals full convergence between Spain and the euro area in the case of the broad indicator, and almost full in the case of the narrow indicator.

Convergence in the degree of access to external financing of Spanish and euro area firms has been widespread across different business segments. This is illustrated by Chart 2.6, which shows the percentage of firms with constraints on their access to bank loans, according to the broad indicator, both during the crisis (2011-2012) and more recently (2015-2016) in Spain and the euro area. There has been convergence across all firm sizes and ages (Panels 1 and 2), with a particularly sharp drop in the proportion of constrained firms in the case of firms aged five years or more. Convergence has also been broad-based across the different productive sectors and depending on firms' level of innovation [16] (Panels 3 and 4), with a notable improvement in the access to bank financing among Spanish construction firms and innovative firms, two segments which had faced severe constraints during the worst years of the crisis.

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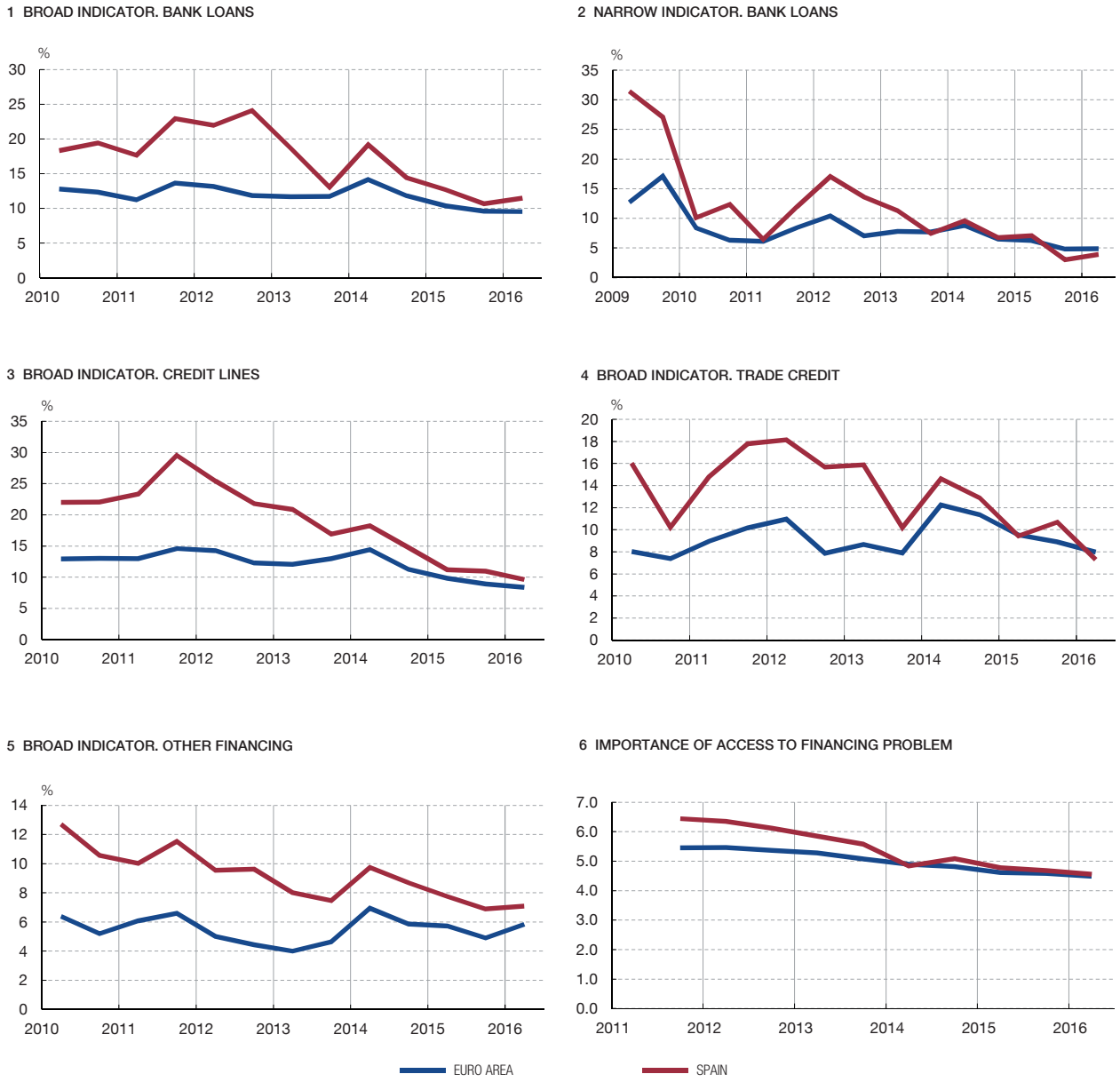
15 The gap with the core euro area countries (France, Germany, Netherlands, Austria, Finland and Luxembourg) also narrowed considerably, from 17 pp in 2012 to 4 pp in 2016.

16 A firm is considered to be innovative if, in the last 12 months, it has launched a new product or service on the market or has introduced a new production process, new working arrangements or new ways of selling its goods or services.

EXTERNAL FINANCING CONSTRAINTS (a) CHART 2.5



SOURCE: Survey on Access to Finance of Enterprises (SAFE).

a The chart shows the percentage of firms with constraints in Panels 1 to 5, and an index that takes values on a scale of 1 to 10 in Panel 6, obtained as an average of individual responses. The series are represented for the entire available time range, which is not the same in all cases. Thus, they do not all start on the same date.

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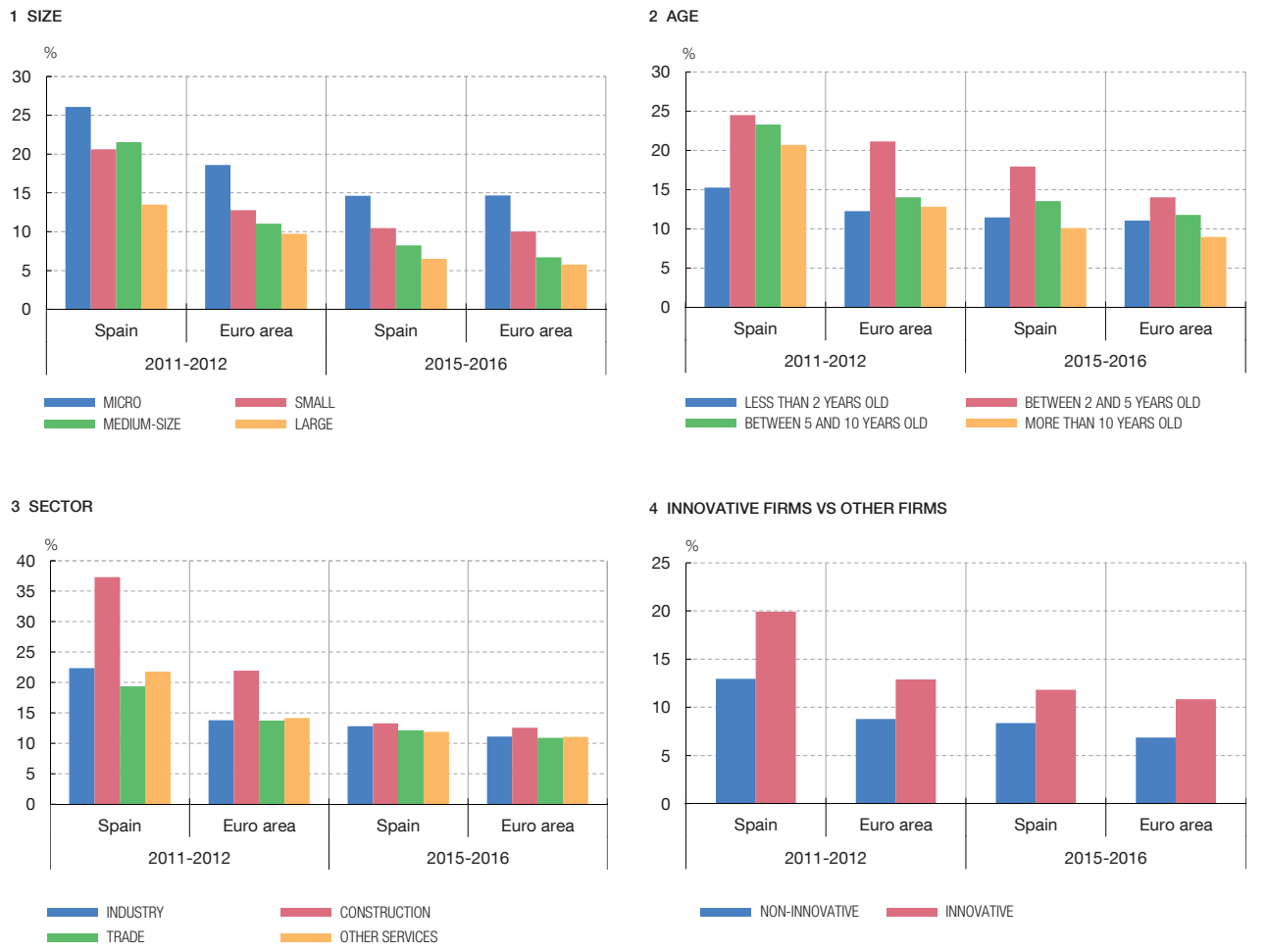
However, there is a certain heterogeneity in the degree of access to external financing, in terms of firm characteristics. Specifically, younger, smaller and more innovative firms face more constraints, as lenders consider them to be higher-risk segments. The regression analyses for each business segment, which take account of the effect of the different characteristics of firms,[17] reveal that some segments in Spain continue to face greater constraints than in the euro area, although the differences are

17 The characteristics taken into account do not include the profitability of firms, since this variable was not available in the database used for this analysis.

PERCENTAGE OF FIRMS WITH FINANCING CONSTRAINTS. BANK LOANS

CHART 2.6

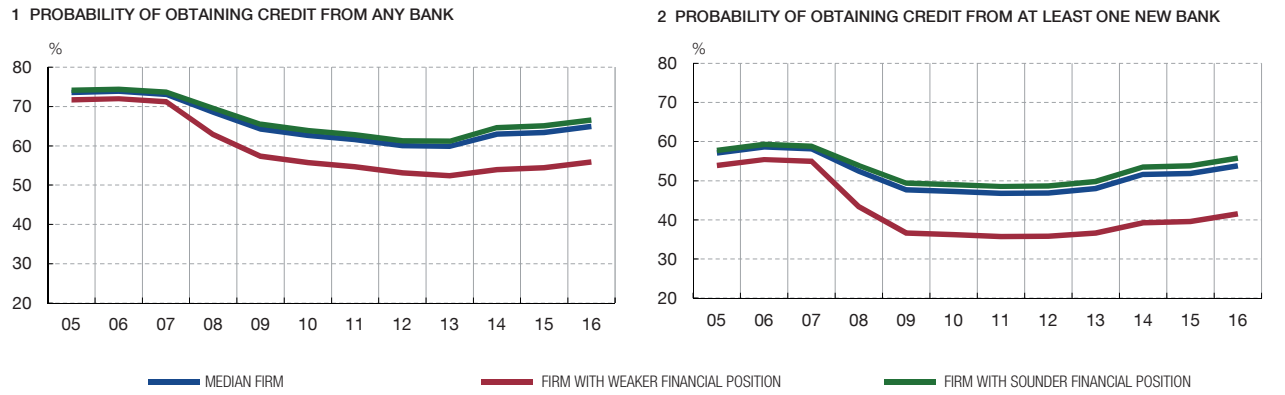


SOURCE: Survey on Access to Finance of Enterprises (SAFE).

generally small. Thus, according to the broad indicator, medium-sized Spanish firms and firms in services sectors other than trade, would be more likely (between 3pp and 4pp) to face constraints in access to bank loans than their European peers. Small firms in Spain and those in the trade sector would be more likely (between 3pp and 4pp) to face constraints on access to credit facilities than those of the euro area. Moreover, young Spanish firms (less than five years' old) and those in the trade sector would be more likely (between 3pp and 6pp) to face constraints on trade credit than similar firms in the euro area. Lastly, small, older (more than ten years' old) firms in Spain and those in other services sectors would be more likely (around 2pp) to face constraints on other types of financing than similar European firms.

The degree of access to bank credit of non-financial corporations depends as much on their characteristics as on those of the lenders. Specifically, the results detailed in Box 2.2 show that the probability of obtaining credit is higher the older and larger the firm and the sounder its financial position, aspects which are inversely correlated with the risk perceived by lenders. The number of institutions with which firms operate also has a favourable effect on this probability. The size (proxied by the total volume of assets) and financial soundness of credit institutions, measured through their capital and liquidity ratios and their non-performing loans ratio, are directly related to banks' readiness to extend loans. Therefore, these results suggest that the improved financial position of non-financial corporations and banks in recent

PROBABILITY OF OBTAINING CREDIT FOR SPANISH NON-FINANCIAL CORPORATIONS CHART 2.7



SOURCE: Banco de España.

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years[18] has contributed to increasing Spanish firms' access to bank financing. Additionally, some regulatory measures such as, for example, the change in the definition of SMEs for the purposes of the new capital regulations for credit institutions, which entered into force in 2013, have also favoured the access of such firms to external funds.[19]

Recovery of the degree of access to credit has been higher for firms with a sounder financial position. Chart 2.7, which is based on the results discussed in Box 2.2, shows how the probability of obtaining credit for a typical firm with a fixed set of characteristics has risen since the start of the economic recovery, following the decline observed during the crisis years. This was observed both when banks with which firms had a previous credit relationship (left-hand panel) were considered and when these banks were excluded (right-hand panel).[20] The chart also shows how, after the onset of the crisis, the dispersion in the degree of access to credit on the basis of firm characteristics tended to increase, a trend that became somewhat more pronounced during the recovery phase. This evidence suggests that banks' selection of borrowers has improved in recent years, which has translated into a more marked recovery of the degree of access to bank financing for firms with a sounder financial position.

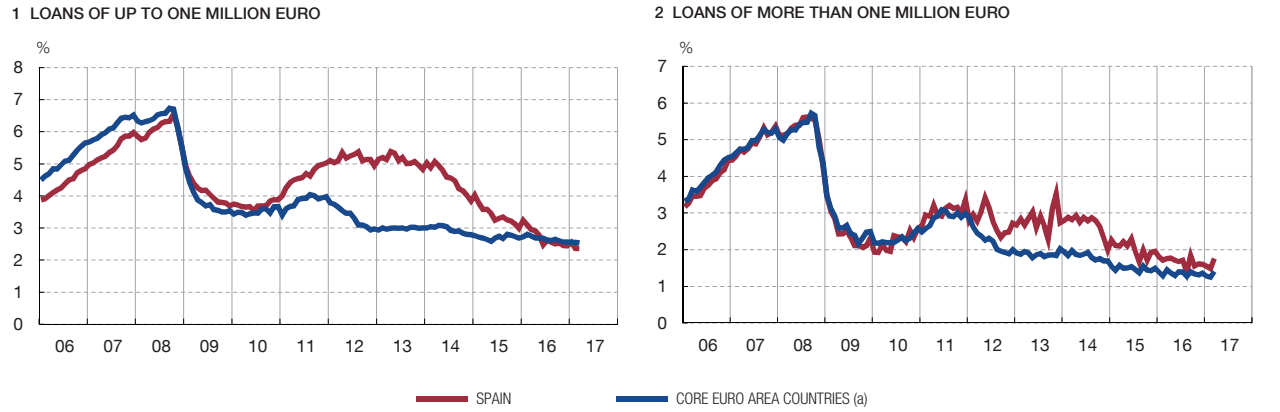
In short, one of the factors contributing to the recovery of investment of Spanish non-financial corporations in recent years is their improved access to external financing. Specifically, for 13% of Spanish firms which went from facing constraints on access to bank loans to not facing them in 2012-2016, the results shown in Box 2.1 indicate that the probability of their investment declining fell by more than 4 pp, and the probability of it

18 From 2013, the proportion of firms in a vulnerable position (defined as those with insufficient operating income to cover interest payments) has declined considerably, especially in the SME sector. For more details, see Menéndez and Mulino (2017), "Changes in the degree of financial pressure borne by Spanish non-financial corporations: 2007-2016", Economic Note, Banco de España. For an analysis of developments in the financial position of credit institutions, see the Financial Stability Reports of the Banco de España, published twice a year.

19 The new definition of SME, which is in line with the European Commission recommendation, is broader than the previous one (that is, it includes more firms). This change entailed a reduction in the capital requirements for loans to firms that became SMEs according to the new definition, thus favouring their access to bank financing. For more details on this regulatory change and its effects, see Chapter 3, pp. 43, of the Financial Stability Report, Banco de España, May 2014..

20 This estimated probability may differ from the probability of rejection obtained from the SAFE for a number of reasons. Firstly, for the indicator used in this section, the observations corresponding to firms whose loan applications are accepted by a bank but not formalised by the firm are erroneously recorded as rejections. Secondly, it should be noted that these calculations are based on a sub-sample of firms (only those which have requested bank financing from at least one bank with which they have no previous loans), which firms would appear to be more likely to have their loan applications rejected, since they are applying to an institution with which they have not had a previous credit relationship. Therefore, the indicator constructed with this data tends to underestimate the probability level of firms' obtaining credit.

INTEREST RATES ON BANK LOANS TO NON-FINANCIAL CORPORATIONS CHART 2.8



SOURCE: Banco de España.

a Defined as the aggregate weighted by GDP at current prices for the same year of Germany, Austria, Finland, France, the Netherlands and Luxembourg. In 2017, 2016 GDP has been used. To aggregate the different categories by maturity within each country, the same weights are used (based on business volumes in Spain), whereby the comparison is not affected by differences between these weights from one area to another. A link was made to May 2010 to correct the break in the continuity of the series associated with a statistical change.

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increasing rose by more than 7 pp. The fact that there has been a more marked improvement in the case of firms with a healthier financial position has favoured a reallocation of financial and productive resources to stronger firms, in line with the results discussed in section 2.1.

In parallel with the improvements in the access to external financing, the costs of such financing fell, also favouring the recovery of firms' investment. Thus, between 2013 and 2016, interest rates on bank loans to Spanish non-financial corporations fell significantly, particularly for amounts of less than €1 million, which include transactions with SMEs (see Chart 2.8). In this segment, average interest rates dropped by more than 230 bp, converging to values observed in the core countries of the euro area.

3 Funding structure of Spanish non-financial corporations

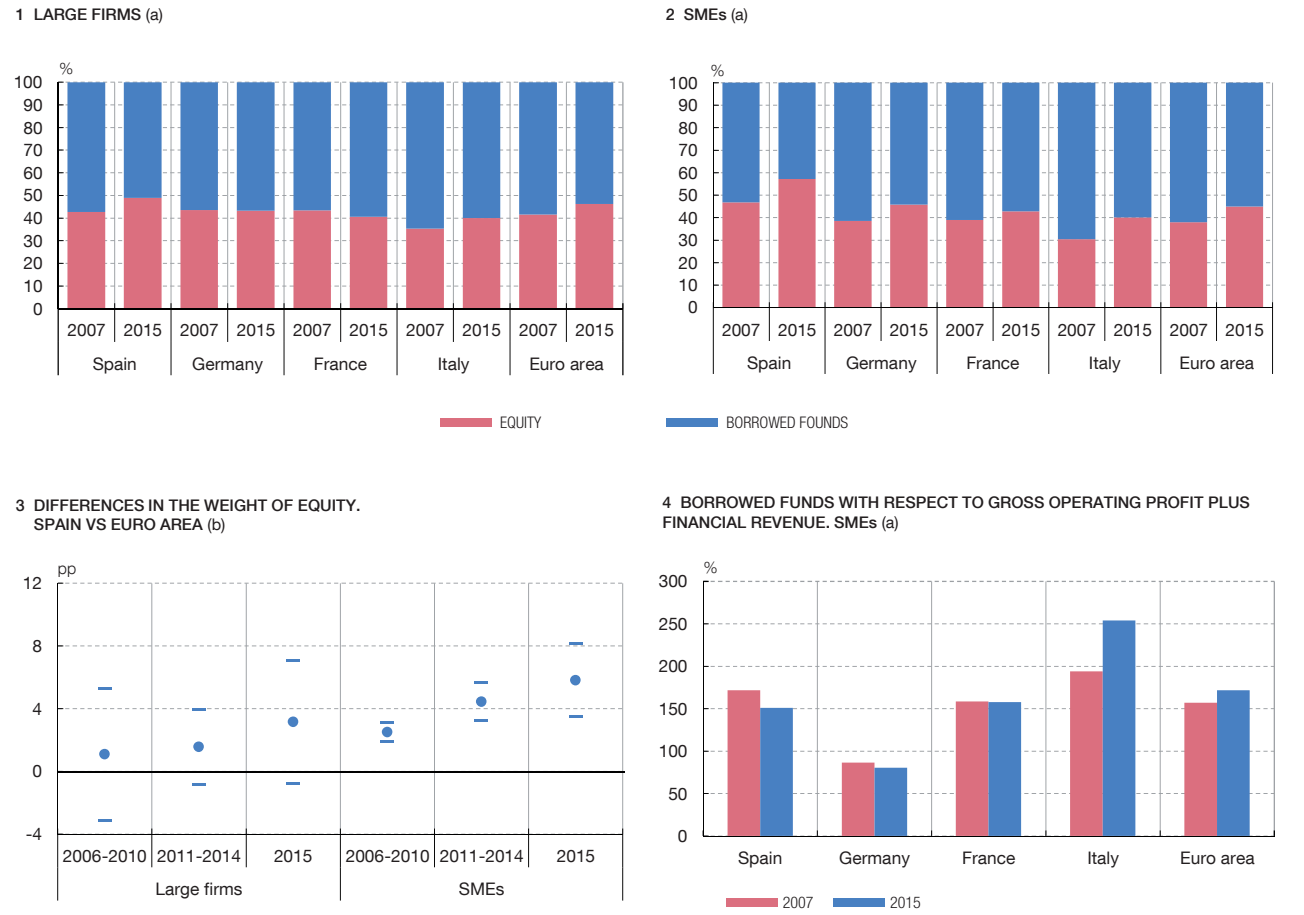
The composition of firms' liabilities may condition their investment decisions. The literature analysing firms' capital structure[21] and its effects on their investment choices has focused on the distinction between own funds and borrowed funds (or debt), underlining the inverse relationship between debt-to-asset (leverage) ratios and gross capital formation.[22] This appears to be linked to the greater loss-absorbing capacity of firms with lower leverage, since it allows them greater access to external financing as they are perceived to be lower risk by lenders. The composition of firms' borrowed funds (bank loans relative to debt securities) may also affect their investment decisions. In the literature there is no consensus as to which financial system – predominantly market-based or bank funding – presents better results in terms of economic growth, since both are vulnerable to certain specific disruptions.[23] In this setting, some papers show that having a variety of

21 See the pioneering works of S. Titman and R. Wessels (1988), "The Determinants of Capital Structure Choice", *Journal of Finance*, 43, pp. 1-19, or R. G. Rajan and L. Zingales (1995), "What do we know about capital structure? Some evidence from international data", *Journal of Finance*, 50, pp. 1421-1460.

22 See footnote 2 that includes references with international evidence of this.

23 For evidence on the effects of disruptions affecting banks, see L. Alfaro, M. García-Santana and E. Moral-Benito (2016), "Credit Supply Shocks, Network Effects, and the Real Economy", Banco de España Working Paper, forthcoming, and S. Bentolila, M. Jansen, G. Jiménez and S. Ruano (2015), "When Credit Dries Up: Job Losses in the Great Recession", Working Paper 1310, CEMFI. For evidence on disruptions focused on markets, see A. Mody and D. Sandri (2012), "The eurozone crisis: how banks and sovereigns came to be joined at the hip", *Economic Policy*, 27, pp. 199-230, and A. Alter and A. Beyer (2014), "The dynamics of spillover effects during the European sovereign debt turmoil", *Journal of Banking and Finance*, 42, pp. 134-153.

LIABILITIES STRUCTURE. INTERNATIONAL COMPARISON CHART 2.9



SOURCES: BACH, Amadeus and Banco de España.

a Euro area includes France, Germany, Italy, Portugal and Spain.
b The circles denote the difference between the average weight of equity to total assets for Spanish firms and the corresponding weight for firms with similar characteristics operating in the same sector in other European countries. The hyphens represent the 95% confidence interval. For purposes of comparison, the median firm for each sector (three digits), country and year, as regards size, profitability and availability of collateral and liquid assets, was considered. These estimates were made using data drawn from the Amadeus database.

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sources of financing helps firms increase their resilience to disruptions of different origins and makes their investments less sensitive to adverse scenarios.[24] Given the potential implications that firms' financing structure may have on their investment decisions, it is interesting to analyse the most recent composition of the liabilities of Spanish non-financial corporations and to examine how it has changed in recent years compared with that of firms in other European economies.

The equity-to-assets ratio of large Spanish firms is above the average for their euro area peers.[25] As Panel 1 of Chart 2.9 shows, before the onset of the crisis, this ratio was

24 See, for example, A. Tengulov (2016), "The Impact of Borrowing Diversity on Firm Value, Financing and Real Decisions", Working Paper (30 December), available at SSRN, https://ssrn.com/abstract=2361401 or http://dx.doi. org/10.2139/ssrn.2361401, and F. De Fiore and H. Uhlig (2015), "Corporate Debt Structure and the Financial Crisis", *Journal of Money, Credit and Banking*, 47, pp. 1571-1598.

25 In this section, aggregate euro area data are proxied, based on a varying number of countries, according to the data available, as a GDP-weighted average of the results. The figures used include, in all cases, at least the four largest economies (Germany, France, Italy and Spain), which together account for some 76% of euro area GDP.

similar in Spain to the average euro area ratio. Subsequently, however, owing to the more intense deleveraging process in Spain, the ratio rose more for Spanish companies than for the big euro area companies. Nevertheless, when controlled for firms' characteristics, these differences are not statistically significant (see Panel 3 of Chart 2.9).

Spanish SMEs had lower leverage than their euro area peers before the crisis and the differences have increased notably since then (see Panel 2 of Chart 2.9). Moreover, as Panel 3 of Chart 2.9 illustrates, this same pattern persists when controlled for firms' characteristics. Specifically in 2015 (the last financial year available), the proportion of equity on Spanish SMEs' balance sheets was 6 pp higher than that of European firms with similar characteristics.

Despite their lower leverage, Spanish SMEs were somewhat more vulnerable to earnings contraction than their euro area peers before the crisis. The lower return on assets (ROA) of Spanish SMEs meant that their debt-to-earnings ratio was above the average level for the euro area (see Panel 4 of Chart 2.9). In consequence, Spanish SMEs had a lower relative ability to meet the payments associated with their financial commitments. In addition, the fact that the crisis was more severe in Spain than in the rest of the euro area meant that these differences were amplified in the early years of the downturn. The growing financial pressure borne by firms forced them to make far-reaching cuts in their debt levels, while some were forced to disappear altogether, being unable to meet the payments associated with their liabilities. As a result of the decline in borrowed funds and the improved earnings performance in the subsequent economic recovery, by 2015 Spanish SMEs' debt-to-earnings ratio was below the average levels for the euro area. In any event, although Spanish SMEs' profitability levels have recovered, they continue to be lower than the average for comparable euro area companies, which is consistent with their lower productivity levels.[26]

A breakdown of Spanish firms by size and age shows that the decrease in leverage observed in recent years has been widespread among SMEs (see Chart 2.10). However, despite this common characteristic, some patterns diverge. Thus it is observed that the older the SME, the higher the relative weight of equity, which could be the result of a degree of "survival bias" owing to the disappearance of the most highly leveraged firms during the crisis.[27] In addition, an inverse relationship is observed between size and the relative importance of equity. A regression analysis controlled for various characteristics of firms confirms that age and size are both variables that have a significant impact on the level of leverage at SMEs. The size effect, which is also consistent with the evidence mentioned above based on Spanish SMEs,[28] could be explained by larger firms' lower level of asymmetric information, easier access to market funding and lower cost of debt.

Significant differences in leverage levels by size and age are also observed for the subset of large firms.[29] There is also evidence that, both for SMEs and larger companies, those that have higher profitability and those that have lower risk[30] tend to have lower leverage levels.

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26 See *Annual Report 2015*, Chapter 4, Banco de España.

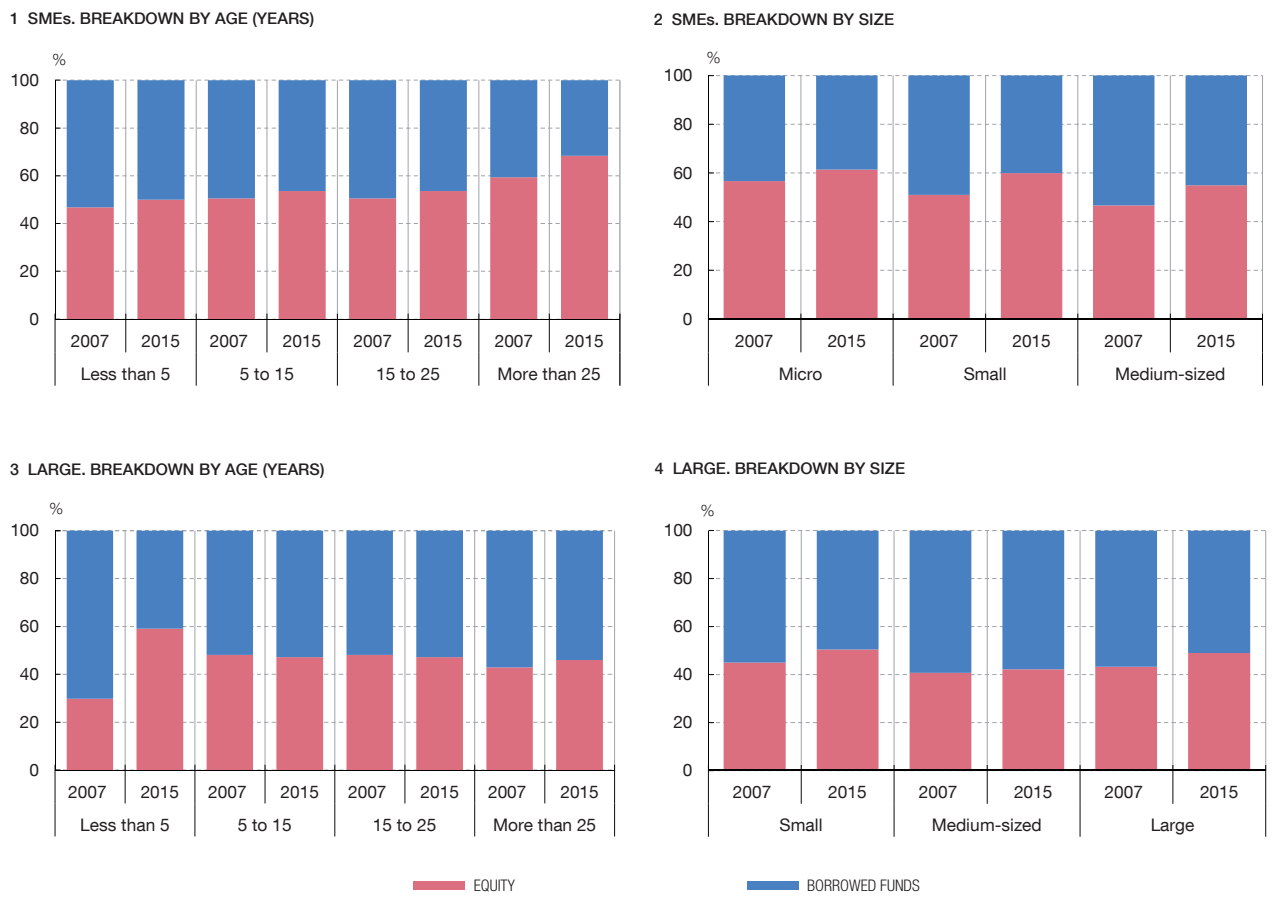
27 Another possible explanation, as per M. A. Petersen and R. G. Rajan (1994), "The Benefits of Lending Relationships: Evidence from Small Business Data", *Journal of Finance*, 49 (1), pp. 3-37, is that older firms make more frequent use of retained earnings, while younger ones have to rely on borrowed funds.

28 See F. Sogorb-Mira, "How SME Uniqueness Affects Capital Structure: Evidence from a 1994-1998 Spanish Data Panel", *Small Business Economics*, 25, pp. 447-457.

29 As in the case of SMEs, there is evidence pointing to similar results for large firms, such as, for example, A. Agrawal and N. J. Nagarajan (1990), "Corporate Capital Structure, Agency Costs, and Ownership Control: The Case of All-Equity Firms", *Journal of Finance*, 45, pp. 1325-1331.

30 Proxied by the Z-Score. See E. Altman (1968), "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", *Journal of Finance*, pp 189-209.

STRUCTURE OF NON-FINANCIAL CORPORATIONS' LIABILITIES CHART 2.10



SOURCE: Banco de España.

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The deleveraging undertaken by Spanish firms in recent years places them in a more favourable position to pursue investment projects. Spanish firms, especially Spanish SMEs, currently have a more robust liabilities structure than their euro area peers. However, profitability is still low compared with that of their euro area peers, particularly in the smaller firms, and this continues to act as a constraint on their growth potential.

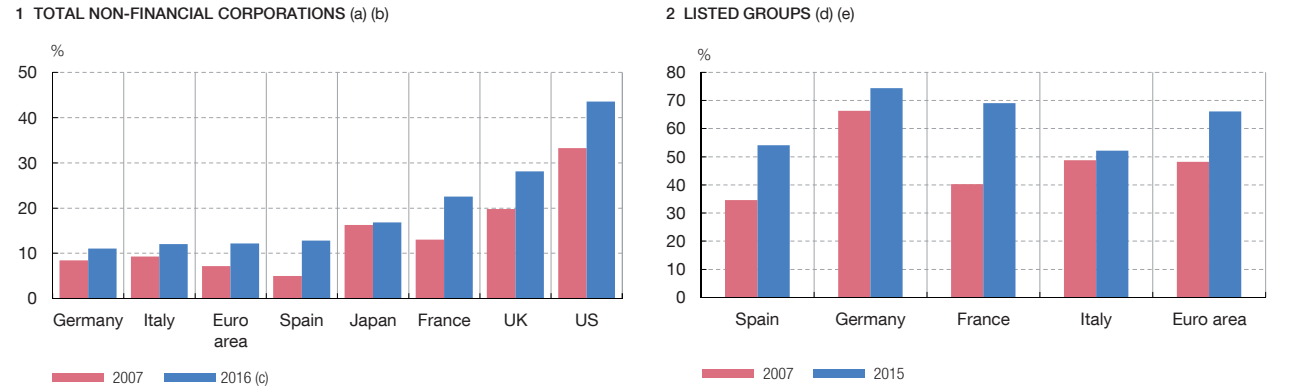
In recent years, Spanish firms have tended to step up their financing through issuance of debt securities more than their euro area peers. Panel 1 of Chart 2.11[31] illustrates the growth in debt securities as a proportion of interest-bearing borrowing (which includes debt securities and total loans) at firms from several countries, including Spain. As may be observed, debt securities in companies of the euro area and Japan account for a smaller proportion than in companies in the United Kingdom and, especially, the United States. The chart also reflects how, in recent years, there has been quite a widespread process of disintermediation of financing of firms, as bank funding has declined in proportion to market funding.[32] Various global factors underpin this pattern,

31 This chart draws on financial accounts and includes, in the case of Spain, issuance made by resident and non-resident subsidiaries as debt securities, assuming that they are part of the loans obtained by the sector.

32 By contrast, to date in Spain there has been very little development of non-bank financing sources such as crowdlending (financing through platforms that match lenders directly with borrowers) that have made great progress in other economies such as the United States, the United Kingdom or China.

DEBT SECURITIES AS A PROPORTION OF DEBT

CHART 2.11



SOURCES: ECB, Federal Reserve, Eurostat, BIS, ERICA and Banco de España.

a Spanish debt securities include issuance by resident and non-resident subsidiaries at market price, considered as part of the loans obtained by the sector. Issuance by non-resident German subsidiaries is also high, but the data cannot be adjusted due to lack of information.
b Debt includes debt securities and total loans. Data obtained from the BIS, except as regards the euro area (Eurostat) and Spain (Banco de España).
c Year-end data, except for Japan and the United States which refer to Q3.
d Debt includes debt securities and total loans. Data obtained from ERICA.
e Euro area includes Austria, Belgium, France, Germany, Italy, Portugal and Spain.

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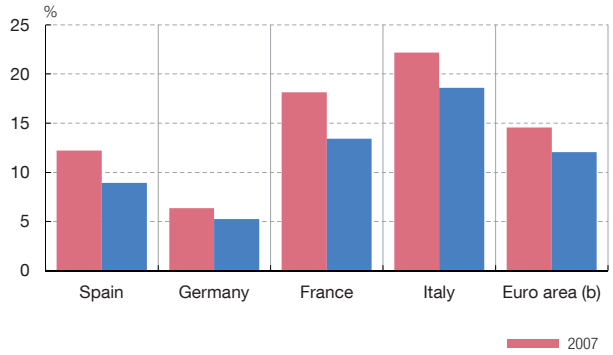
including in particular the impact of the crisis on banks' ability to offer financing and the stricter regulations introduced in the sector as a response to the crisis. In Spain, debt securities issues have traditionally accounted for a smaller part of firms' liabilities than in the euro area overall, in keeping with the higher degree of banking intermediation in the Spanish economy. However, since the outbreak of the crisis, the process of disintermediation of financing of firms has been more intense than in the other European economies (see Panel 1 of Chart 2.11).[33]

The same pattern is observed for listed groups, which have the most recourse to market funding owing to their larger size (see Panel 2 of Chart 2.11). Box 2.3 shows that Spanish listed companies have traditionally had less recourse to debt securities than other comparable European companies, although these differences have tended to diminish in recent years. Nevertheless, the increase in Spanish firms' recourse to funding via debt securities in the recent period is not only explained by the activity of listed groups. Thus, between early 2014 and December 2016, 38 groups of unlisted Spanish firms issued debt securities, 30 of which for the first time and 13 of which on Spain's alternative debt market (MARF).

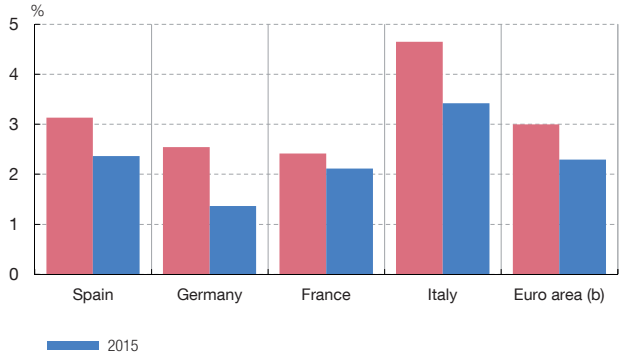
One factor that has contributed to the greater relative appeal of funding via debt securities is the decline in their cost compared with bank loans[34] ***(see Box 2.3)***. This cost differential reached its most recent peak in 2012, against a backdrop of tension on the financial markets associated with the sovereign debt crisis. Since then the differential has narrowed, stepping up the relative appeal of market funding. Factors that have played a part in this change include the fall in market interest rates to very low levels, which has

33 Comparison of this ratio with the euro area ratio must be made with caution, as issues by non-resident subsidiaries are not considered in any of the other countries, only in Spain, owing to the lack of information. These issues are particularly high in the case of Germany.
34 The cost of loans is proxied as the interest rate on loans over €1 million, which are those extended to large companies which are, in turn, those that have most recourse to market funding.

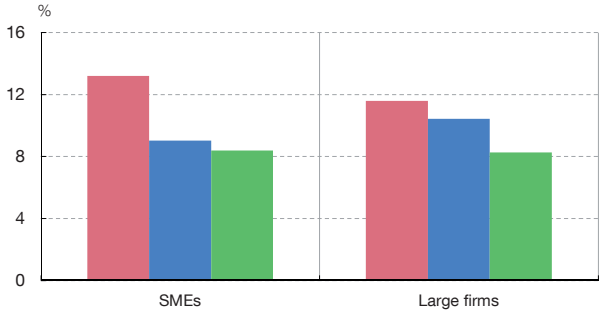
1 TRADE CREDIT RECEIVED, AS PROPORTION OF TOTAL ASSETS. INTERNATIONAL COMPARISON



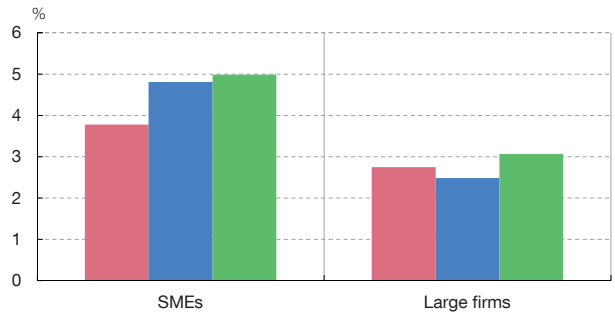
2 NET TRADE CREDIT AS PROPORTION OF TOTAL ASSETS. INTERNATIONAL COMPARISON (a)



3 TRADE CREDIT RECEIVED, AS PROPORTION OF TOTAL ASSETS. SPAIN



4 NET TRADE CREDIT AS PROPORTION OF TOTAL ASSETS. SPAIN (a)



SOURCE: BACH.

a Net trade credit (Assets–Liabilities).
b Euro area includes Austria, Belgium, France, Germany, Italy, Portugal and Spain.

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eliminated the advantages of credit institutions' funding costs over the markets,[35] and more recently the expansion of the Eurosystem's asset purchase programme to include corporate bonds.[36]

The greater diversification of Spanish firms' liabilities in recent years has made firms less vulnerable to shocks affecting the credit channel. Nevertheless, the disintermediation process is mostly limited to large companies, since access to market funding is not generally a viable option for smaller firms. Accordingly, Spanish SMEs continue to be heavily reliant on bank credit.

Trade credit is, after bank loans, the most important source of borrowing for Spanish non-financial corporations. Compared with the rest of the euro area, in Spain it accounts

35 The cost of funding through deposits, the main source of banks' financing, was traditionally lower than money market interest rates, but since Euribor rates turned negative the opposite is the case, since zero is the lower bound for retail deposits.

36 For an assessment of the impact of this programme on Spanish firms' financing conditions, see Ó. Arce, R. Gimeno and S. Mayordomo, "Making room for the needy: The effects of the Eurosystem's Corporate Sector Purchase Programme", Banco de España Working Paper, forthcoming.

DEBT OF NON-FINANCIAL CORPORATIONS AND TRADE CREDIT. FLOWS

CHART 2.13

SOURCE: Banco de España.

a Excluding holdings and firms with no debt.
b Definition of sizes in line with European Commission Recommendation (2003/361/EC).

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for a slightly smaller proportion of balance sheets (see Panel 1 of Chart 2.12). Since the outbreak of the crisis, the relative weight of trade finance has tended to decline, both in Spain and, to a lesser extent, in the euro area as a whole. The main reason for this is the contraction in firms' activity during the downturn. This decline has been more marked among SMEs than among large firms, owing to the greater impact of the crisis on the SME segment (see Panel 3 of Chart 2.12). The regulations limiting payment periods in commercial transactions also assisted in this respect, both in Spain and in the rest of the euro area,[37] as did the supplier payment plans approved in Spain in 2012.[38]

Firms also offer financing to their customers (other firms and the public sector) through commercial loans. Indeed, as shown in Panel 2 of Chart 2.12, both Spanish

37 In order to reduce supplier payment periods, a European Directive (2000/35/EC) was promulgated in 2000 proposing measures on combating late payment in commercial transactions. This regulation was transposed into Spanish legislation through Law 15/2010 (amending Law 3/2004) which set, for 1 January 2013 at the latest, maximum payment periods of 60 days for commercial transactions between firms and of 30 days for commercial transactions with the public sector. For more details, see V. García-Vaquero and M. Mulino-Ríos (2015), "Recent behaviour of the trade credit of non-financial firms in Spain", *Economic Bulletin*, January 2015, pp. 3-12, Banco de España.

38 The supplier payment plans established an extraordinary financing mechanism for payment and settlement of trade debt arranged with suppliers of regional and local governments where there were significant payment delays. For more details, see M. Delgado Téllez, P. Hernández de Cos, S. Hurtado and J. J. Pérez (2015), "Extraordinary mechanisms for payment of general government suppliers in Spain", Occasional Paper 1501, Banco de España.

firms and firms in the rest of the euro area provide net financing through commercial loans. By size, SMEs are the chief net lenders (see Panel 4 of Chart 2.12 for Spain), most likely as a result of their relatively lower bargaining power with customers and suppliers.

Trade credit has allowed Spanish firms to redistribute funds within the sector, thus mitigating the effect of bank funding constraints. As Chart 2.13 shows, Spanish firms, which in recent years have built up their outstanding balance of bank credit and which should, therefore, have better access to such funds, have increased their net funding provided to other firms through trade credit.[39] Accordingly, this may have helped ease the impact of the credit constraints on firms' real decisions.

39 This is consistent with the evidence of the literature analysing the role played by trade credit. For example, see: M. A. Petersen and R. G. Rajan (1997), "Trade Credit: Theories and Evidence", *Review of Financial Studies*, 10, pp. 661-691; P. Hernández de Cos and I. Hernando (1999), "Crédito comercial a las empresas", *Moneda y Crédito*, num. 209; and S. Carbó-Valverde, F. Rodríguez-Fernández and G. F. Udell (2016), "Trade Credit, the Financial Crisis, and SME Access to Finance", *Journal of Money, Credit and Banking*, 48, pp. 113-143.

Credit constraints may have a negative impact on corporate investment decisions, working capital (current assets less current liabilities) and, lastly, on growth. To study these effects, the Survey on the Access to Finance of Enterprises (SAFE) conducted by the ECB in cooperation with the European Commission is used in this box. Specifically, the sub-sample of panel data[1] of this survey for the period 2014-2016[2] is used, for which information is available on all variables of interest, with a total of 16,000 enterprises and 37,000 observations.

In the exercises conducted, it is considered that an enterprise has restricted access to bank financing if, in accordance with the broad indicator,[3] it has restricted access to bank loans and/or credit facilities.[4] According to this indicator, on average, 17% of Spanish firms faced restrictions of this kind during the period 2014-2016, compared with 15% of European firms.

The other variables of interest can also be defined on the basis of the SAFE. Specifically, the survey inquires whether investment in fixed assets (property, plant and equipment), inventories, working capital, turnover and number of employees have changed in the six months prior to the survey being conducted. Based on this information, ordinal variables were generated that take on a value of 1 if the indicator decreases, 2 if it does not change and 3 if it increases.

In order to identify the impact of credit constraints on investment, working capital and business growth, random-effects ordered probit models have been estimated[5] where the dependent variables are the aforementioned indicators. In addition to the bank financing constraints indicator, the explanatory variables considered also include others to control for business features that affect demand for investment and current assets and companies' capacity for growth. Specifically, binary variables of size (based on number of employees[6] and turnover), of sector (industry, construction, trade, other services), of age (under two years, between two and five years, between five and ten years, over ten years), of legal status (independent firm or subsidiary/ branch of another firm), of ownership structure (single-member

1 To obtain more accurate estimates semester-by-semester, the SAFE includes a rotating panel of firms.
2 Waves 11 to 15 of the SAFE.
3 For a definition of restriction on access to finance in a broad sense, see Section 2.2 of the main text of this chapter.
4 Therefore, it is implicitly assumed that loans and credit facilities are imperfect substitutes.
5 Random effects are included in ordered probit models because the scant time variability of the credit constraint variable in such a short panel (two years) makes it impossible to identify its effect through fixed effects in a linear probability model.
6 One to nine employees, 10 to 49, 50 to 249, and 250 or more.

Table 1
MARGINAL IMPACT OF CREDIT CONSTRAINTS ON FIRMS' INVESTMENT, WORKING CAPITAL, TURNOVER AND EMPLOYMENT (a)

Independent variable (b)	Probability that investment will decrease	Probability that investment will increase
Credit constraint Spain	0.044**	-0.074**
Credit constraint. Euro area	0.041***	-0.054***
Independent variable (b)	Probability that working capital will decrease	Probability that working capital will increase
Credit constraint. Spain	0.041*	-0.058*
Credit constraint. Euro area	0.046***	-0.051***
Independent variable (b)	Probability that turnover will decrease	Probability that turnover will increase
Credit constraint. Spain	0.031	-0.043
Credit constraint. Euro area	0.051***	-0.065***
Independent variable (b)	Probability that employment will decrease	Probability that employment will increase
Credit constraint. Spain	0.050***	-0.089***
Credit constraint. Euro area	0.047***	-0.064***

SOURCE: Banco de España.

a The first row shows the marginal effect in parts per unit of the main regressor for the sample of Spanish firms, the second row does the same for the sample of euro area firms. Controls: country-time, sector, size, age, legal status, and ownership and exporter structure dummies and dummies for changes in the debt-to-asset ratio and interest payment expense (lagged one period). Estimator: random-effects ordered probit. Robust standard errors to heteroskedasticity are used for the Spanish sample and are grouped by country for the euro area sample. *, ** and *** indicate significance for confidence levels of 90%, 95% and 99% respectively.
b These variables are lagged one period.

company, family business, joint-stock company, etc.) and of exporter status (exporter or non-exporter) are included. Also, a series of binary variables are added which indicate whether interest expense and the debt-to-assets ratio have increased or remained unchanged in the last six months.[7]

Table 1 summarises the main results of the estimates for each of the four dependent variables (investment, working capital, turnover and number of employees), both for the sample of Spanish firms and for the euro area as a whole. Specifically, the marginal effects of indicators of bank lending restrictions on the probability that the respective dependent variable will decrease (column 1) or increase (column 2) are shown. In general, there is evidence that bank funding constraints have a negative impact on firms' activity and growth.[8] The magnitude of these effects is similar in Spain and in the euro area, except in the case of turnover, where the effects are smaller (and statistically non-significant) in Spain.

A more detailed analysis of the results for Spain shows that the existence of bank credit constraints raises by approximately 4 pp the probability that investment and working capital will decrease and reduces by 7pp and 6 pp, respectively, the probability that these two variables will increase. Also, restrictions on access to bank credit also have a substantial negative impact on business growth. Specifically, Spanish firms that face constraints in their access to bank financing are 5 pp more likely to reduce their workforce and almost 9 pp less likely to increase it. The effects on sales are somewhat smaller (3 pp and 4 pp, respectively), but their estimation is not very precise and they are statistically non-significant at conventional levels. Finally, it should be noted that these impacts can be seen across all business segments when disaggregated by features such as size, age and sector.

7 Lastly, country-time fixed effects are considered for the purpose of incorporating the effect of macroeconomic shocks idiosyncratic to each country of the sample. All the explanatory variables that change over time have been lagged one period so as to reduce possible endogeneity problems. Also, the use of random effects permits controlling for heterogeneity at firm level. Other potentially significant variables, such as firms' profitability, have not been added because they were not available in the database used.

8 It should be borne in mind that by using the firms in the survey's sub-sample of panel data, the total effects of credit constraints could be underestimated because firms which have had to close business owing to credit constraint-related problems are not taken into account.

This box analyses the factors determining the access of firms to bank financing, distinguishing between those related to the characteristics of firms applying for loans (non-financial corporations) and those related to the characteristics of suppliers (banks). It also analyses the extent to which sensitivity to these determinants has changed over the last cycle.

Three different sources of information have been combined for this analysis. First, use is made of the Central Credit Register (CCR) of the Banco de España, which contains individualised data on all the loans granted by credit institutions for amounts in excess of €6,000, and on requests for information submitted by banks to the CCR on firms with which they have not had prior credit relationships.[1] It is thus possible to identify the subgroup of companies requesting bank financing from at least one bank with which until then they had no outstanding loans or credit facilities, and on the basis of the changes in credit balances it is possible to determine whether the companies finally obtained the funds.[2] Second, these data are matched with those of the Central Balance Sheet Data Office to obtain information on the firm's economic and financial situation. Finally, use is made of the information on credit institutions drawn from supervisory returns. All of this serves to obtain a database of approximately 1.25 million observations for the period from January 2004 to June 2016.

This database was used to estimate several linear models to model, first, the probability of obtaining credit on the basis of a series of characteristics of the firm applying for funds and, second, the probability of a firm obtaining a loan from a particular bank, where, in addition to the firm's variables, bank characteristics are also included.[3] Also, estimated coefficients were allowed to differ by sub-periods in order to analyse the possible existence of structural changes.[4] The three sub-periods considered, which were established on the basis of the observed growth of the economy, are: the expansionary phase prior to the crisis (2005 Q1 to 2008 Q1); the crisis period (2008 Q2 to 2013 Q3); and the recovery stage (2013 Q4 to 2016 Q2).

Table 1 shows the results when considering the probability of a firm obtaining credit from any bank regardless of whether it had prior loans from that institution. In line with expectations, the results show that age and size have a positive impact when significant, whereas the variables relating to the firm's financial position, i.e. the debt burden, indebtedness and the existence of previous doubtful loans, are inversely related to the probability of obtaining a loan. Also, the more credit relationships a firm applying for credit has with banks, the more likely it is to obtain funding.[5] As regards changes throughout the cycle, in general, the results suggest that the sensitivity of the estimated probability to the explanatory variables increased during the crisis and, in the case of financial variables, increased further during the recovery stage.

1 If a firm has already received credit from an institution, the latter receives a report on the firm's credit status by default.

2 Specifically, it is considered that a firm has obtained funding if its outstanding credit balance (including drawn down and undrawn amounts) increases within three months from the date it applied for a loan.

3 For earlier work using a similar approach, see G. Jimenéz, S. Ongena, J. Peydró and J. Saurina, *Credit Supply vs Demand: Bank and Firm Balance-Sheet Channels in Good and Crisis Times*, Discussion Paper from Tilburg University, No. 2012-005, Center for Economic Research.

4 Fixed effects of time, firm, bank or a combination of firm by time, depending on the specification, are included. All the estimates were made using clusters at firm and bank level.

5 The specification also includes other variables, such as firm profitability and productivity, but the estimated coefficients for these variables were not statistically significant.

Table 1
PROBABILITY OF A COMPANY OBTAINING CREDIT FROM ANY BANK (a)

	Coefficients for 2005 Q1-2008 Q1	Coefficients for 2008 Q2-2013 Q3	Coefficients for 2013 Q4-2016 Q2
Previous doubtful loans	-0.021	0.003	-0.042***
Indebtedness	-0.036***	-0.078***	-0.102***
Debt burden	0.000	-0.002***	-0.003***
Number of previous relationships with banks	0.006***	0.014***	0.015***
Total assets	-0.001	0.009***	0.005**
Age	0.004	0.018***	0.003

SOURCE: Banco de España.

a *, ** and *** indicate significance for confidence levels of 90%, 95% and 99%, respectively.

Since the existence of prior loans may condition loan supply from a particular institution, the same specification considered in the previous case has been used to estimate the probability of a generic company obtaining credit from at least one bank with which it had no previous credit relationship (see Table 2). In this case, both age and size are negative, which could be related to a possible bias in the sample of firms used.[6] Regarding the other variables, as in the previous case, the weaker a firm's financial position, the less likely it is to obtain a loan, and the impact of this variable has tended to increase through the cycle. Notably, the coefficients estimated are higher (in absolute terms) than in the foregoing specification, evidencing that in the event of an application for credit, if the bank has no prior credit link with the firm, its supply policy will tend to be more sensitive to the firm's characteristics.

Finally, in estimating the likelihood of a company obtaining credit from a bank in particular,[7] the size of the bank has a positive impact, as does the capital ratio (since the crisis) and the degree of liquidity (in the years preceding the crisis, see Table 3).[8] The

6 Specifically, this result could mean that the sub-sample of large and older firms is more likely to include companies applying for a loan to a new bank after having been rejected, owing to poor credit quality, by institutions where they had already taken out loans.

7 These estimates include the same firm variables as the foregoing specifications to control for firm characteristics.

8 The result relating to capital, in particular, confirms the importance of an appropriate macroprudential policy that aims to create additional buffers during cyclical upturns in order to mitigate the contraction of bank credit supply during downturns.

Table 2
PROBABILITY OF A COMPANY OBTAINING CREDIT FROM ANY BANK WITH WHICH IT HAS NO DEBTS OUTSTANDING (a)

	Coefficients for 2005 Q1-2008 Q1	Coefficients for 2008 Q2-2013 Q3	Coefficients for 2013 Q4-2016 Q2
Previous doubtful loans	-0.108***	-0.109***	-0.136***
Indebtedness	-0.039***	-0.108***	-0.118***
Debt burden	-0.001*	-0.005***	-0.005***
Number of previous relationships with banks	-0.052***	-0.057***	-0.052***
Total assets	-0.016***	0.004*	0.003
Age	-0.017**	-0.005	-0.028***

SOURCE: Banco de España

a *, ** and *** indicate significance for confidence levels of 90%, 95% and 99%, respectively.

Table 3
PROBABILITY OF A COMPANY OBTAINING A LOAN BASED ON THE BANK'S CHARACTERISTICS (a)

	Coefficients for 2005 Q1-2008 Q1	Coefficients for 2008 Q2-2013 Q3	Coefficients for 2013 Q4-2016 Q2
Total assets	0.140***	0.141***	0.140***
Capital ratio	0.323	0.644**	0.642**
Liquidity ratio	0.184***	0.065	-0.052
Percentage of doubtful loans	0.968	-0.250	-0.520***

SOURCE: Banco de España.

a Only the results obtained for the variables relating to banks' characteristics are shown, although the estimate also controls for firms' characteristics. *, ** and *** indicate significance for confidence levels of 90%, 95% and 99%, respectively.

percentage of doubtful loans in the institution's portfolio has a significant negative coefficient only during the period of economic recovery. These results indicate that the heterogeneity of banks' lending policies increased during the crisis according to the credit quality of their portfolio and their solvency, and did so further during the current phase of recovery. However, the differences in the degree of liquidity ceased to affect credit supply, possibly owing to the implementation of the extraordinary measures adopted by the ECB aiming to facilitate the availability of liquidity.

In short, based on the results described in this box, the likelihood of credit being granted depends both on the characteristics of potential borrowers (especially, their financial position) and on those of suppliers of funds (especially, the soundness of the institution's balance sheet). Additionally, the evidence provided shows that the sensitivity of probability to the characteristics of firms has tended to increase following the crisis, which would suggest that banks have since then attempted to discriminate more between firms on the basis of their characteristics, thereby promoting the reassignment of credit to companies with higher credit quality.

This box provides empirical evidence on the factors determining the use of debt securities by non-financial corporations and their relative weight compared with bank loans. This analysis is important to understand why Spanish firms have traditionally sought market funding less frequently than their European counterparts. The European Records of IFRS Consolidated Accounts (ERICA) database is used, which contains information on the consolidated financial statements of approximately one thousand listed non-financial groups from eight European countries: Austria, Belgium, France, Germany, Greece, Italy, Portugal and Spain.[1] This information reveals that, on average, bonds account for no more than 33% of total aggregate loans and bonds in any of those countries, with the highest figures being recorded in some of the smaller countries (Austria, Belgium and Portugal).

Factors that can explain firms' different external funding structures include firm-specific and country-specific (legal, institutional, historical, etc.) factors. To analyse the effect of all of these factors, a panel regression is made for the period 2009-2015 using two alternative specifications. In the first one, the dependent variable takes on a value of one if there are debt securities on the group's balance sheet and of zero otherwise. The dependent variable used in the second specification is the ratio between the balance of debt securities to the sum of said balance and the balance of bank loans. The explanatory variables referring to firms' characteristics and countries are shown in Table 1. All of them are lagged one year.

The results show that group size has a positive effect on the use of debt securities to obtain funds, which could be explained by the existence of economies of scale which reduce the cost of issuance as the size of the operation increases.[2] Indeed, the explanatory power of variables indicating corporate size is much greater (specifically, ten times greater) than that of the next most relevant variable.

The results also show that higher-risk groups use debt securities more frequently,[3] which could be related to the fact that higher-risk firms face less favourable conditions for accessing bank loans owing to the prudential requirements credit institutions have to comply with.

Additionally, in accordance with these estimates, the prevalence of debt securities in the liabilities of firms is greater at those with a higher volume of collateral. This could possibly respond to the fact that companies holding assets of this kind face better external

1 ERICA data are compiled by the ERICA Working Group of the European Committee of Central Balance Sheet Data Offices (ECCBSO). The data used are fully harmonised and subject to quality controls to ensure the reliability of the information. Most debt securities issuers are part of the sample. Although there is also information available on Greek firms, these are excluded from the analysis. As regards the Spanish groups, which are the focus of this box, the database covers all listed companies since 2011. In order to extend the sample period for Spanish companies, the data available at the Banco de España are used, which enables total coverage of listed non-financial groups since 2008 to be achieved.

2 See E. F. Fama (1985), "What's different about banks?" *Journal of Monetary Economics*, 15, pp. 29-39.

3 Group risk is measured on the basis of Altman's Z-score. Specifically, a discreet variable is used that takes on a value of one for firms whose Z-score is lower than 1.81 and which, therefore, are in danger of bankruptcy. For further details, see E. I. Altman (1968), "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", *The Journal of Finance*, Vol. 23, No. 4. pp. 589-609.

Table 1
EXPLANATORY FACTORS FOR THE USE OF DEBT SECURITIES BY EUROPEAN NON-FINANCIAL LISTED GROUPS (a)

	Debt securities (1 = Yes / 0 = No)	Debt securities / Debt securities + Loans)
Large group (1 = Yes / 0 = No)	0.547***	0.358***
Medium group (1 = Yes / 0 = No)	0.152***	0.061***
High risk group (1 = Yes / 0 = No)	0.177***	0.092***
Financial leverage / Assets	0.003*	0.000
Net cash flow / Assets	-0.280***	-0.154**
Tangible assets / Assets	0.083*	-0.047*
Opacity (1 = Yes / 0 = No)	-0.023	-0.020**
Banking penetration (No. offices / 10,000 inhabs. logarithm)	-0.049***	-0.049***
Capitalisation of listed shares / GDP	0.159***	0.084***
Bond yield - loan interest rate (three-year moving average)	-4.561***	-3.912***
Sectoral fixed effects	Yes	Yes
Observations	6,444	6,111
Adjusted R-squared	0.285	0.292

SOURCE: Banco de España.

a The regression is based on ERICA data for the period 2009-2015. The coefficients are obtained on the basis of an ordinary least squares model that includes sectoral fixed effects, and standard errors are clustered at firm level.*, ** and *** indicate significancefor confidence levels of 90%, 95% and 99%, respectively.

funding conditions.[4] However, the availability of these assets seems to favour bank financing more markedly, since this variable is inversely related to the relative weight of debt securities in interest-bearing borrowing as a whole. Lastly, firms that are more opaque (proxied as those for which the absolute value of extraordinary income accounts for a greater proportion of their cash flows[5]) tend to finance themselves more with bank loans than with bonds.

The coefficients obtained for the country-specific variables are similar for the two specifications. As documented in the literature, firms resident in countries with high banking penetration, proxied by number of branch offices per inhabitant, tend to finance themselves with bonds less frequently and the relative weight of loans is higher. In line with this result, groups resident in countries where financial markets are more important, measured on the basis of the capitalisation of listed companies relative to the country's GDP, are more dependent on debt securities financing.

Lastly, the difference in the cost of financing through bonds as compared with bank loans has a significant effect on the composition of liabilities. Thus, an increase of one percentage point (1 pp) in bond yields relative to the interest rate on loans reduces the likelihood of issuance of securities by 4.6 pp. In this sense, the decrease seen since 2012 in the cost of financing of bonds in comparison with that of bank loans would have increased the appeal for this source of financing vis-à-vis with bank financing, a factor which could help explain the recent increase in the degree of disintermediation of firms' financing.

In order to analyse changes in the funding structure of Spanish firms relative to European firms, and the latest position, an estimate is made of the difference between the average probability that Spanish firms will issue bonds and the average probability that similar corporate groups from the other European countries will do so.[6] Chart 1 indicates that in the period prior to and during the sovereign debt crisis, Spanish listed groups used bonds to finance themselves less frequently than their European counterparts with similar characteristics. However, in 2015 these differences were no longer statistically significant. As regards the weight of these bonds in the total balance of loans and debt securities, the difference has also shrunk, although in this case there has been no convergence, and so for Spanish groups this proportion continues to be somewhat smaller than for European groups with similar characteristics. Finally, similar conclusions can be drawn by comparing Spain with each country on an individual basis in 2015 (see Chart 2), and it is found that the greatest convergence in terms of the weight of non-intermediated financing is seen in connection with the large euro area economies (Italy, Germany and France).[7]

4 See T. Hoshi, A. Kashyap and D. Scharfstein (1993), *The choice between public and private debt: an analysis of post-deregulation corporate financing in Japan*, NBER Working Paper series.

5 In line with G. López-Espinosa, M. Mayordomo and A. Moreno (2016), "When does relationship lending start to pay?", Journal of Financial Intermediation, forthcoming, and C. Leuz, D. Nanda and P. Wysocki (2003), "Earnings management and investor protection: an international comparison", *Journal of Financial Economics*. 69, pp. 505–527.

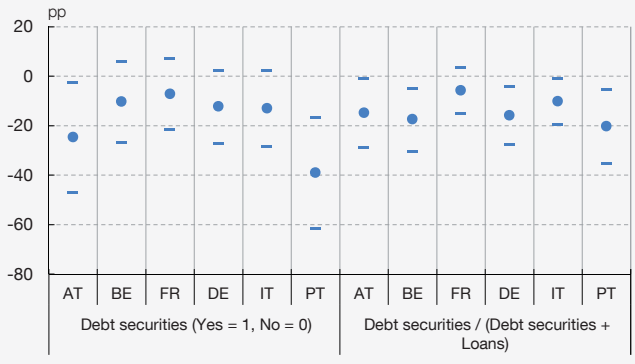
6 Specifically, an analysis was made using an estimation technique called "nearest neighbour matching". In accordance with this technique, in order to identify similar firms an exact equivalence is used regarding size (large, medium or small group), risk, opacity, sector and year. Additionally, the firms are matched in respect of their leverage, net cash flow and tangible assets. For more details, see A. Abadie and G. W. Imbens (2006), "Large sample properties of matching estimators for average treatment effects", *Econometrica,* 74, pp. 235-267, and A. Abadie and G. W. Imbens (2011), "Bias-corrected matching estimators for average treatment effects", *Journal of Business and Economic Statistics*, 29, pp. 1-11.

7 Prior to 2015 the presence and weight of debt securities were significantly lower for Spanish groups, except when compared with Italian groups.

DIFFERENCE IN NON-FINANCIAL CORPORATIONS' USE OF DEBT SECURITIES. SPAIN VIS-À-VIS THE EURO AREA

Chart 1
DIFFERENCE BY PERIOD (a)

Chart 2
DIFFERENCE BETWEEN COUNTRIES. 2015 (a)



SOURCE: Banco de España.

a The circles show the difference in the average probability of Spanish firms having issued bonds (or their weight) with respect to the average probability of firms with similar characteristics in other European countries having done so (or their weight). A confidence level of 95% is represented by dashes.

3 CURRENT ACCOUNT ADJUSTMENT

Summary

The current account balance of the Spanish economy has improved by 11.6 pp since the onset of the crisis, from a deficit of 9.6% of GDP at the end of 2007 to a surplus of 2% in 2016. While all the headings have contributed positively to this adjustment, the correction of the net non-energy goods balance (5.7 pp) and of the investment income balance (2.5 pp) is most notable. The energy balance and the other services balance each contributed an adjustment of 1.3 pp of GDP. Finally, the tourism services surplus rose by 0.6 pp.

The analysis in this chapter shows that approximately half of the current account adjustment can be explained by cyclical economic developments and the fall in oil prices. Other factors contributing to the correction of the external balance include most notably the adjustment in public finances, population ageing, lower growth expectations and the gains in competitiveness of recent years.

The fiscal consolidation, population ageing and lower growth expectations make for a persistent weakness in domestic demand, which, in conjunction with the improvement in competitiveness, has contributed to raising the structural growth rate of exports, against a background in which Spanish firms are seeking new markets outside Spain. These same factors (especially the gains in competitiveness) have also contributed to the lower dynamism of imports in structural terms, partly offset by the vigour of exports in firms and sectors with a high import content.

The external vulnerability of the Spanish economy can be expected to decrease gradually over the coming years. Nevertheless, the risks associated with the high external indebtedness, which manifest themselves as a negative net IIP of 85.7% of GDP, highlight the need to run current account surpluses on a sustained basis in the future. Achieving this will require contributions from the structural consolidation of public finances and from the reform of factor and product markets to encourage productivity growth and to put the gains in external competitiveness on a firmer footing.

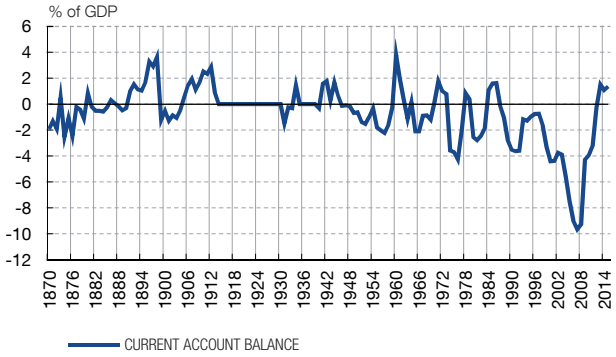
1 Introduction

Since the onset of the crisis, the Spanish current account balance has undergone a sharp adjustment. In the years preceding the global financial crisis, the Spanish economy recorded current-account deficits of a size unprecedented in the historical time series (see Chart 3.1). The financing of these deficits raised Spain's external debt to a very high level. Thus the negative net international investment position (IIP) increased by 45 pp of GDP between 2000 and 2007. Subsequently, the current account balance improved notably. Specifically, after worsening by 6 pp between 2000 and 2007, there was a correction of some 12 pp of GDP between 2008 and 2016.

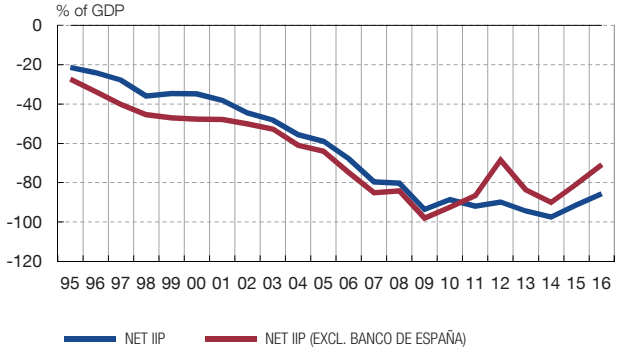
Sluggish domestic demand, improved competitiveness, the ongoing lax financial conditions, cheaper oil and fiscal consolidation are some of the factors explaining the improvement in the external balance. During the upturn before the crisis broke, the overly optimistic growth outlook, the build-up of losses in competitiveness and the availability of abundant financing under accommodative conditions were instrumental, among other things, in the deterioration of the current account balance of the Spanish economy.[1] The abrupt correction of the growth outlook and unit labour costs from 2009

1 See J. M. Campa and Á. Gavilán (2011), «Current accounts in the euro area: An intertemporal approach», Journal of International Money and Finance, 30, pp. 205-228, and K. Adam, P. Kuang and A. Marcet, (2012), «House Price Booms and the Current Account», in NBER Macroeconomics Annual, University of Chicago Press, vol. 26, pp. 77-122.

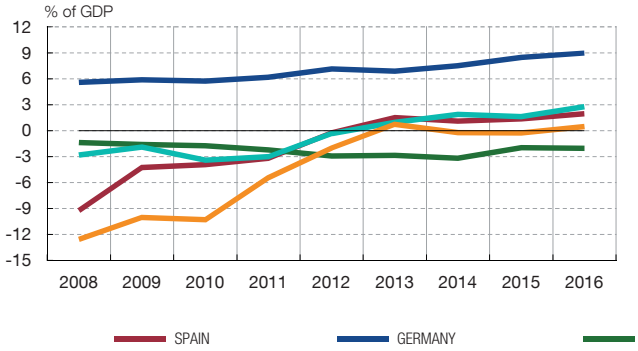
1 CURRENT ACCOUNT BALANCE (a)



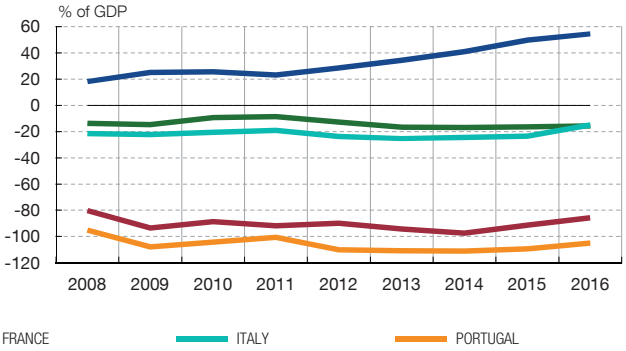
2 NET INTERNATIONAL INVESTMENT POSITION (IIP)



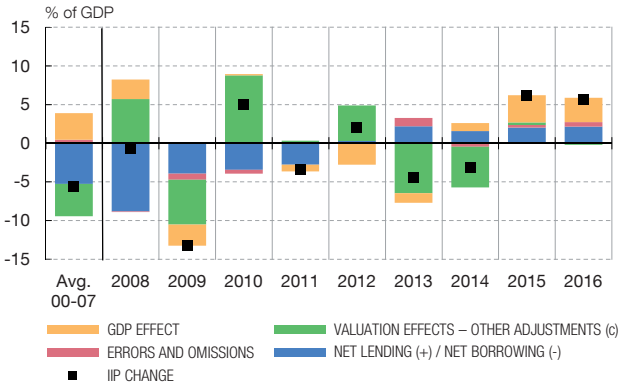
3 CURRENT ACCOUNT BALANCE. INTERNATIONAL COMPARISON



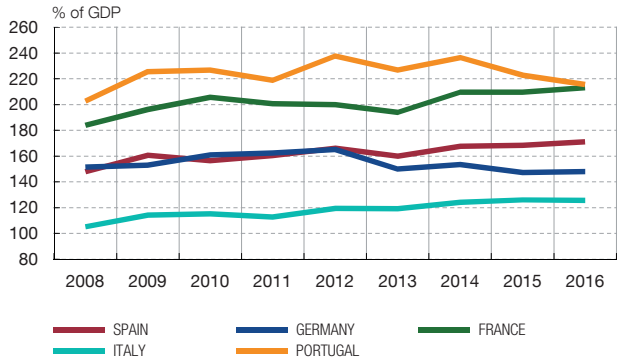
4 NET IIP. INTERNATIONAL COMPARISON



5 BREAKDOWN OF CHANGE IN NET IIP (b)



6 GROSS EXTERNAL DEBT. INTERNATIONAL COMPARISON



SOURCES: Banco de España, INE, national sources and Datastream.

a Current account balance data for the period 1870-1995 drawn from the database: Òscar Jordà, Moritz Schularick and Alan M. Taylor (2017), "Macrofinancial History and the New Business Cycle Facts", in *NBER Macroeconomics Annual 2016,* vol. 31, edited by Martin Eichenbaum and Jonathan A. Parker, Chicago, University of Chicago Press.

b A positive (negative) sign denotes an increase (decrease) in net IIP.

c Valuation effects are gains/losses relating to the exchange rate and/or financial instrument prices, while other adjustments are other changes in volume, including most notably write-offs owing to recognition of the impossibility of recovering funds, asset and/or liability reclassifications, and changes in residence of holders or issuers of financial assets and liabilities.

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was conducive to the improvement of the external balance. Subsequently, from 2013, the narrowing of the spread on interest rates applied to resident agents relative to with those of the euro area core countries allowed the Spanish economy to gain competitiveness (see Chapter 2 of the 2015 Annual Report of the Banco de España) and reduce net payments of interest to the rest of the world, since Spain is a net debtor economy. Also, following the sharp deterioration of the public deficit between 2007 and 2009, the process of fiscal consolidation under way made for a more positive trend in national saving. Finally, the process of adjustment of the external deficit was driven by factors of a more temporary nature, such as the collapse of economic activity in the more deeply recessionary phases of the crisis and the fall in oil prices, which dropped from €86 to €24 per barrel between January 2012 and January 2016, notably reducing the energy bill.

Despite the recent improvements in the external balance, the still-high external debt represents one of the main vulnerabilities of the Spanish economy. At the end of 2016, the negative net IIP stood at 85.7% of GDP, among the highest of the advanced economies (see Chart 3.1). Meanwhile, the gross external debt, which encompasses callable liabilities, amounted to 167.5% of GDP. Against this background, a worsening in the conditions of access to financing from the rest of the world may affect macrofinancial stability despite the recent shift in the composition of callable liabilities towards longer maturities. Mitigating this element of risk will require current-account surpluses to be run for a long period of time.

This chapter analyses the recent correction of the external deficit and its determining factors, with the aim of gauging how persistent it will be. The ability to quantify the various factors behind the current account adjustment allows us to determine to what extent we can expect the recent correction of the external balance to be lasting, and to thus roughly estimate the future vulnerability of the Spanish economy under alternative scenarios for the behaviour of its external net borrowing.

2 Characterisation of the correction of the external balance

The net borrowing or lending of a nation is determined as the sum of the current account balance and the capital account balance. The current account is divided into four basic sub-balances:[2] goods (exports and imports), services (including payments and receipts derived from tourism and non-tourism services), primary income (including, inter alia, interest payments and receipts on liabilities and assets, respectively, vis-à-vis the rest of the world) and secondary income (including, among other items, payments and receipts of migrants' remittances). The capital balance, which in relative terms is smaller, is basically determined by capital transfers to and from the EU. Described below are the changes in the aforementioned headings from 2000, paying special attention to the period after 2008. Since all transactions recorded in the balance of payments have a financial counterpart, Sub-section 2.2 analyses the financial account.

2.1 CURRENT ACCOUNT AND CAPITAL ACCOUNT BALANCES

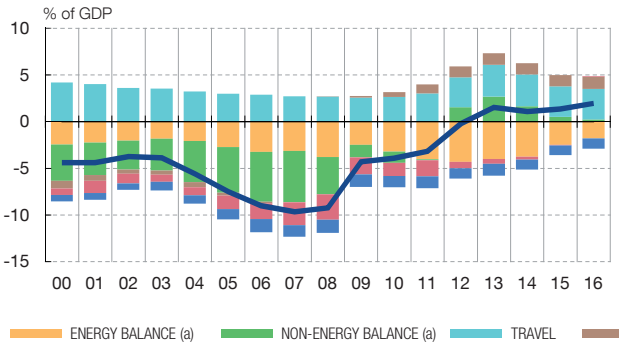
The current account balance of the Spanish economy deteriorated by 6 pp of GDP between 2000 and 2008 due to the worsening of all its headings, particularly net purchases of non-energy goods. During the upturn before the crisis, the Spanish economy built up an external imbalance which reached nearly 10% of GDP in 2007 (see panel 1 of Chart 3.2). Except for a surplus on services (2.7% of GDP in 2007), all headings had negative net balances throughout the period 2000-2007, the most notable being the deficit on non-energy goods at 5.5% of GDP in 2007. The negative contribution to the current account by

2 See the "Balanza de Pagos y Posición de Inversión Internacional de España, 2014", published by the Banco de España.

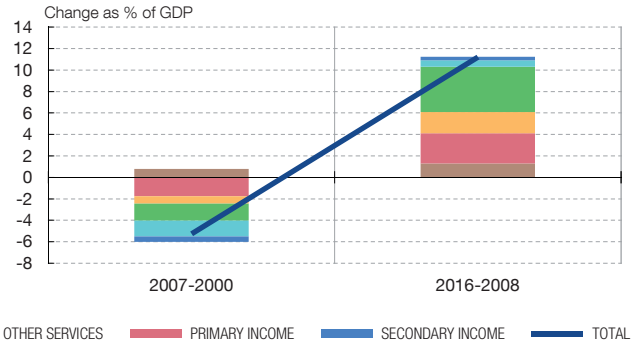
CURRENT AND CAPITAL ACCOUNT BALANCES

CHART 3.2

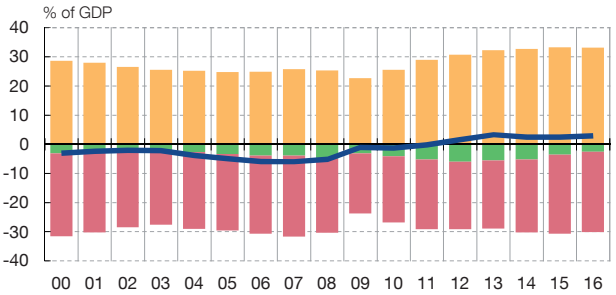
1 CURRENT ACCOUNT. BALANCES



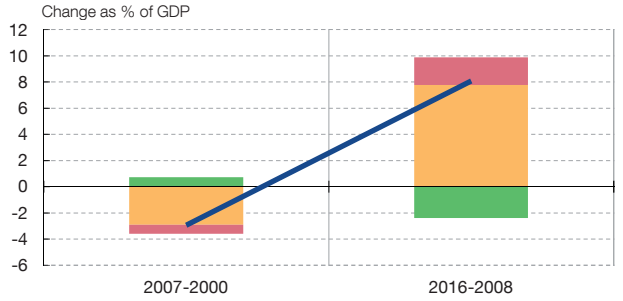
2 CHANGE IN CURRENT ACCOUNT BALANCE



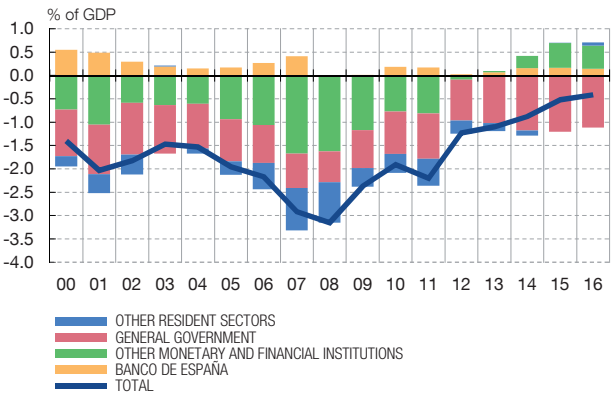
3 GOODS AND SERVICES. BALANCES



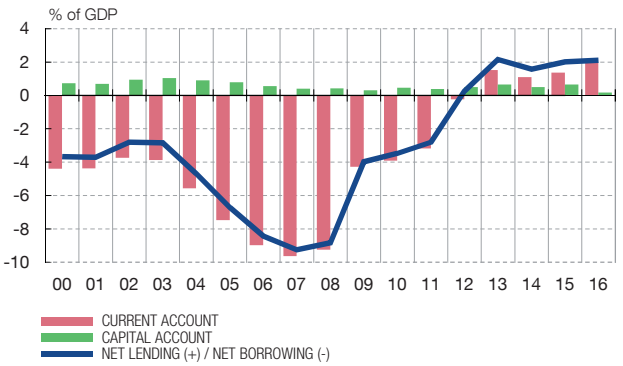
4 CHANGE IN GOODS AND SERVICES BALANCE



5 INVESTMENT INCOME. BALANCES



6 NET LENDING / NET BORROWING



SOURCES: Banco de España and INE.

a Energy and non-energy balances are estimates by the Banco de España using Customs data.

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deficit items increased in this period, particularly that by net imports of both energy and non-energy goods, which rose by 0.7 pp of GDP and 1.6 pp of GDP, respectively.

Since 2008 the current account balance has improved by around 12 pp of GDP, again due to the behaviour of all its headings, particularly purchases of non-energy goods and the income balance. In this period, the Spanish economy abruptly corrected its external imbalance and reached a current account surplus of 2% in 2016. This is particularly notable because since 2014 external surpluses have coexisted with significant positive GDP growth, although traditionally recoveries of the Spanish economy have been associated with a worsening of the external balance. Since 2008 all headings have contributed to the correction of the current account deficit, although they have done so unevenly, with the non-energy goods and primary income balances being the main contributors (see panel 2 of Chart 3.2).

At first the adjustment was mainly through the reduction of non-energy goods imports, which was subsequently reinforced by an improvement in exports as a whole. The improvement in the trade balance reflected the adjustment of the net balance of non-energy goods, which went from a deficit of 5.5% of GDP in 2007 to a surplus of 0.2% in 2016 (see panels 3 and 4 of Chart 3.2). Initially, between 2008 and 2010 the correction was due to a sharp contraction of imports, to which was subsequently added a recovery of exports, whose weight relative to GDP reached percentages exceeding those before the crisis. Despite the substantial oil price rises from $30 per barrel in 2000 to $146 in 2008, the energy goods balance showed very limited changes in the pre-crisis period, as a result of the Spanish economy's notably lower dependence on oil in this period (see Box 3.1). The continued improvement in energy efficiency and the recent fall in oil prices meant that in the last two years this component has contributed significantly to improving the current account balance, as the energy bill fell by 2 pp of GDP, to a deficit of 1.8% in 2016. Meanwhile, the improvement in the services balance was due to the buoyancy of tourism exports, partly as a result of geopolitical tensions in various competitor destinations,[3] and to the growth of exports of other services. However, as a whole, the widening of the services balance surplus (1.9 pp of GDP between 2008 and 2016) contributed less than the correction of the goods balance (5.7 pp of GDP between 2008 and 2016) to the adjustment of the current account.

The investment income balance also improved significantly in the period 2008-2016. Specifically, the investment income deficit decreased in this period by 2.7 pp of GDP to 0.4% in 2016 (see panel 5 of Chart 3.2). This improvement reflected the decrease in interest rates in the period considered and the changes in composition of external liabilities by institutional sector. Specifically, the relative weight of government debt held by non-residents, the financing cost of which is generally lower than that of private-sector debt securities, increased. Also, the process of deleveraging undertaken by the private sector gave rise to an appreciable decrease in the associated net interest payments, to the point that surpluses of around 0.6% of GDP were recorded in 2016, contrasting with the deficit of 2.5% of GDP in 2008.

The role of the capital account in the adjustments seen in recent years has been secondary. The surplus on the capital account, which is basically determined by capital transfers to and from the EU, was relatively steady from 2000, so its contribution to the correction of the external balance was marginal (see panel 6 of Chart 3.2).

3 See Box 7 "Dynamism of non-resident tourism in 2016 and its determinants", in "Quarterly report on the Spanish economy", *Economic Bulletin,* 1/2017, Banco de España.

2.2 FINANCIAL ACCOUNT

In the years preceding the crisis, the balances of financial transactions with the rest of the world became progressively more negative. This was the result of net investment in Spain by non-resident agents (net change in liabilities or NCL) which increasingly outstripped residents' investment in the rest of the world (net change in assets or NCA) (see panels 1 and 2 of Chart 3.3). In the expansionary period prior to the crisis, the NCL was due mainly to the receipt of funds by monetary financial institutions (MFIs) and by securitisation special purpose vehicles to meet the financing needs of the private sector[4] (see panels 3 and 4 of Chart 3.3). Moreover, direct outward investment by Spanish firms exceeded the inward investment by foreign firms in Spain, this being a key component of the NCA during those years (see panels 5 and 6 of Chart 3.3).

From the onset of the crisis, the flows of investment and borrowings abroad decreased considerably. Both the flows of borrowings and the flows of investment decreased from the onset of the crisis. However, the NCL decreased more sharply than the NCA. This resulted in the NCA being larger than the NCL from 2012 (see panel 2 of Chart 3.3), giving rise to a positive balance in the financial account which has persisted in the last four years. Although the inflows and outflows recovered in 2014 and subsequent years, their composition differs from that before the crisis. Thus, regarding institutional sectors, other resident sectors (ORSs), which were net recipients of funds in the pre-crisis years, became net investors abroad after the crisis. For its part, general government, as a result of the ongoing high government deficits, had to raise funds which were partly financed by international investors through portfolio investments.

From 2010, financial flows to and from the rest of the world were strongly influenced initially by the financial tensions in the euro area and subsequently by the extraordinary measures of the ECB. The financial tensions in the euro area between 2010 and 2012 generated net outflows of funds abroad in the sectors other than the Banco de España, amounting to 15% of GDP in 2012, and a considerable increase in the central bank's net liabilities as a result of the growing need of Spanish financial institutions to supplement the funding from the financial markets with funds from the Eurosystem.

From 2013, the resident sectors' improved conditions of access to external financing allowed the outflow of foreign funds to be reversed. The progressive normalisation of the euro area capital markets from late 2012 significantly mitigated the need for Spanish banks to resort to central bank funding. Subsequently, the abundant liquidity resulting from the unconventional quantitative easing measures by the ECB in recent years has again prompted net outflows of funds in the Spanish economy, albeit of a very different nature from those produced by the 2012 balance of payments crisis. In fact, the recent outflows of funds do not reflect a worsening of economic sentiment towards the Spanish economy, as in 2011-2012, but rather result from a redistribution among institutions and countries of the abundant liquidity injected by the Eurosystem.[5]

3 Analysis of the persistence of the recent current account adjustment

In analysing the determinants of the external imbalance, it is useful to distinguish the contribution of temporary factors from that of longer-term factors. Various international organisations, such as the International Monetary Fund and the European Union, have adopted a methodology which enables them to decompose the adjustment of the external sector according to the effect of various explanatory factors on agents'

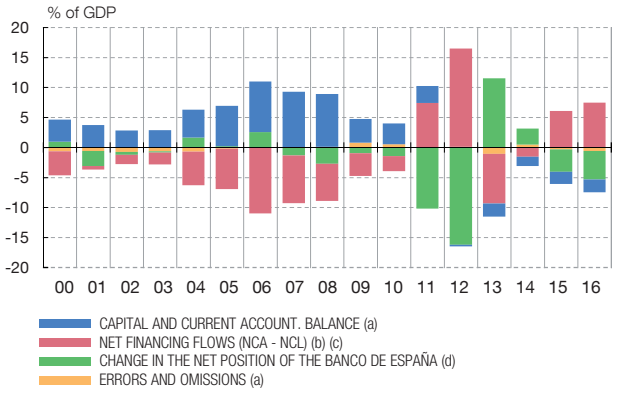
4 Classified in other resident sectors (ORSs).

5 For more details, see J. Martínez Pagés (2016), «The Eurosystem quantitative easing measures and the financial account», *Economic Bulletin,* April, Banco de España.

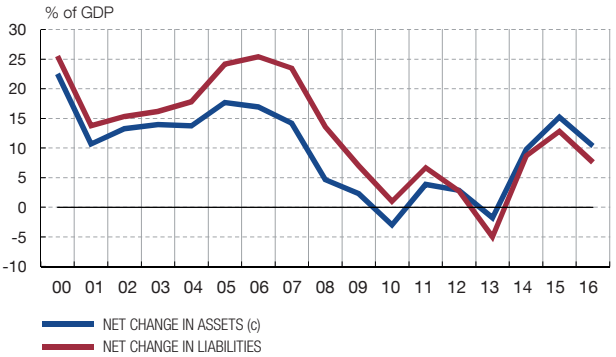
FINANCIAL TRANSACTIONS WITH THE REST OF THE WORLD

CHART 3.3

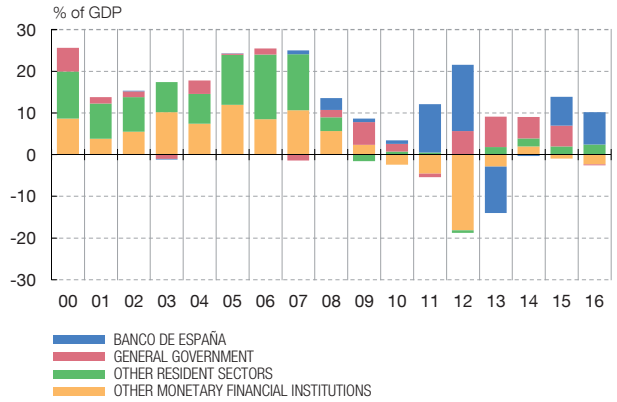
1 CAPITAL AND CURRENT ACCOUNT BALANCE AND CROSS-BORDER FINANCIAL TRANSACTIONS



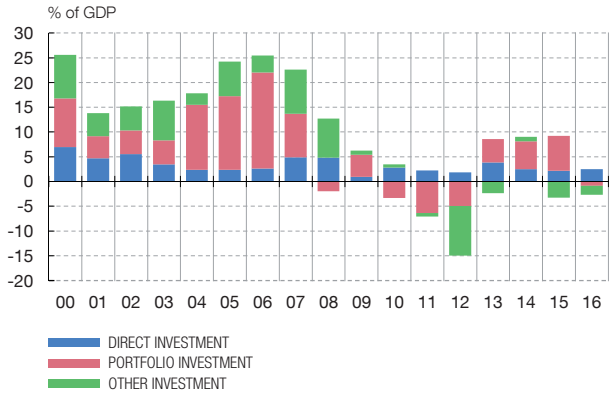
2 NET CHANGE IN ASSETS ANDNET CHANGE IN LIABILITIES



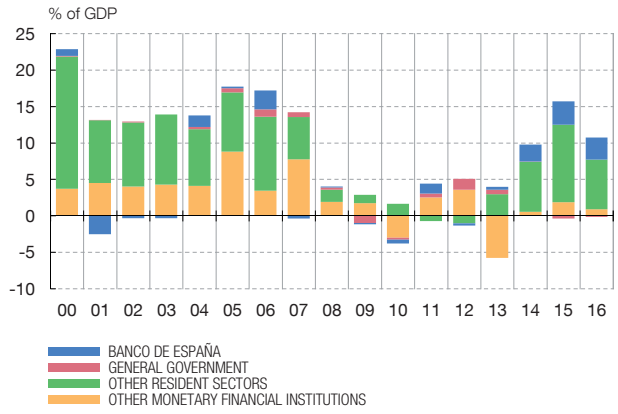
3 NET CHANGE IN LIABILITIES. SECTORIAL BREAKDOWN



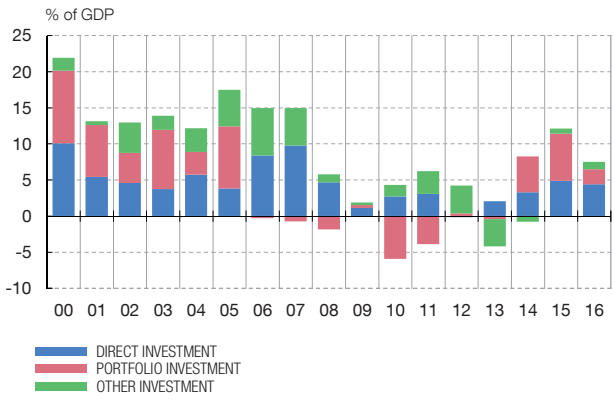
4 NET CHANGE IN LIABILITIES (EXCLUDING BANCO DE ESPAÑA). BREAKDOWN BY FUNCTIONAL CATEGORY



5 NET CHANGE IN ASSETS. SECTORAL BREAKDOWN



6 NET CHANGE IN ASSETS (EXCLUDING BANCO DE ESPAÑA). BREAKDOWN BY FUNCTIONAL CATEGORY



SOURCE: Banco de España.

a Sign changed.
b Excluding Banco de España.
c Financial derivatives are accounted for in net terms (NCA – NCL) and, by convention, are assigned to the net change in assets
d Change in assets minus change in liabilities. A positive (negative) sign denotes a decrease (increase) in the net external assets of the Banco de España.

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savings and investment decisions and on the behaviour of net exports.[6] This focus enables the determinants of a cyclical, and therefore temporary, nature to be distinguished from other factors. This section considers a variant of this methodology which includes a broader set of determinants of the external balance in order to approximate the specific features of the euro area and particularly of the Spanish economy.[7]

Notable among the temporary factors is the role of the business cycle. The sluggish domestic demand during a recession means that imports fall and exports rise, which helps to improve the trade balance and, therefore the current account balance. However, this effect can be expected to reverse as the cyclical upturn gets underway and the output gap becomes positive.

Oil prices may play a significant role in the behaviour of the external balance. Cheaper oil prices helped to reduce the energy balance in countries which are net importers, such as Spain, where the energy component represents a significant part of the current account balance. The degree of temporariness of oil price changes is difficult to identify a priori, although the high volatility of this variable in certain periods would advise against considering it to be an explanatory factor of the current account balance of a structural nature.

Other longer-term factors, such as fiscal consolidation, gains in competitiveness, population ageing and lower growth expectations, may also help to correct the external balance. Lower borrowing by general government contributes to correcting the external deficit through its negative effect on domestic demand. Population ageing may foster agents' saving insofar as people perceive, for example, the need to top up their pensions under the government system. Also, weak potential growth expectations may entail low investment rates and, therefore, less borrowing. Finally, gains in competitiveness from, for example, the adjustment of labour and financial costs allow firms to compete internationally on better terms and increase their exports.

It is estimated that around one-third of the adjustment in the external balance between 2008 and 2015 was due to cyclical economic developments (see panels 1 and 2 of Chart 3.4). Thus the cyclically adjusted current account balance, i.e. after stripping out the effect of the contraction in activity, amounted to a deficit of 0.2% of GDP in 2015, compared with the deficit of 6.9% in 2008 (see panel 2 of Chart 3.4).

The fall in oil prices in recent years also contributed significantly to the correction of the external balance. Euro-denominated oil prices decreased by 73% between 2012 and 2015, which explains around one-fifth of the correction in the current account balance in that period (see panel 4 of Chart 3.4). In this case, although the oil price recovery is uncertain, it does not seem likely that there will be additional falls contributing to further decreases in the energy bill of the size of those seen in the period 2014-2015.

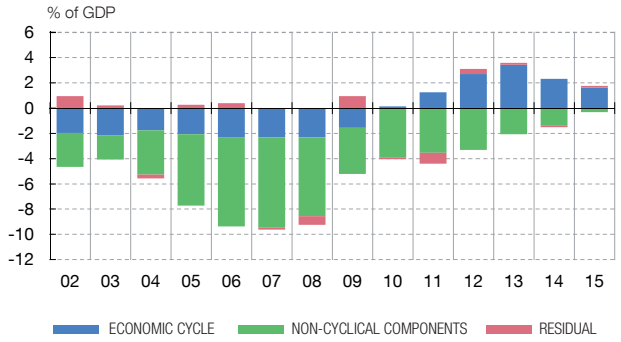
Fiscal consolidation stands out among the other factors which have contributed to the external balance adjustment. The structural component of the budget deficit decreased by 5.3 pp from 2010 to 2015. The contribution of this improvement in the public

6 See IMF (2013), "The External Balance Assessment (EBA) Methodology", Working Paper 13/272.

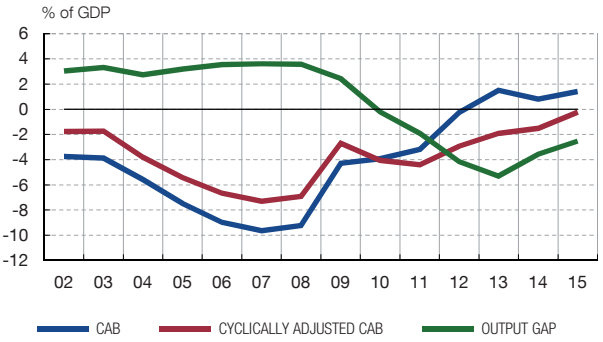
7 E. Moral-Benito and F. Viani (2017), "An anatomy of the Spanish current account adjustment: the role of permanent and transitory factors", Working Paper, Banco de España, forthcoming.

CYCLICAL AND NON-CYCLICAL FACTORS IN THE ADJUSTMENT OF THE CURRENT ACCOUNT BALANCE CHART 3.4

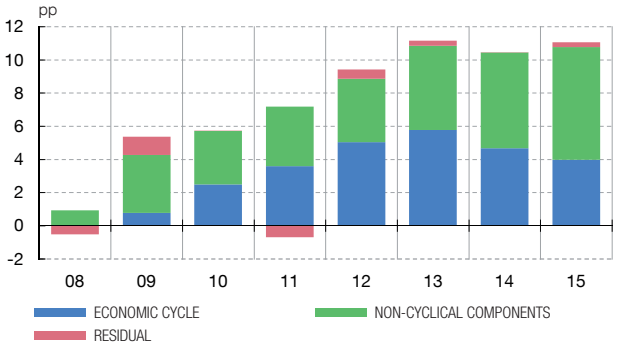
1 BREAKDOWN OF CURRENT ACCOUNT BALANCE (a)



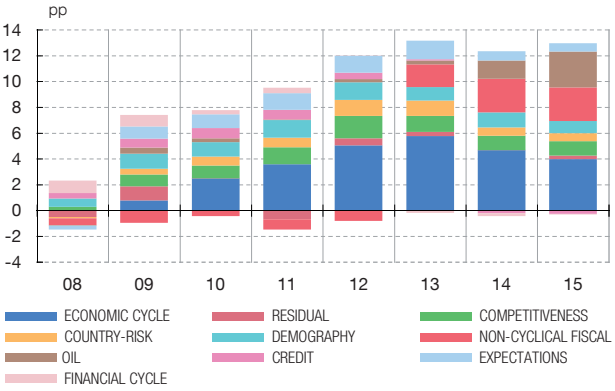
2 CYCLICALLY ADJUSTED CURRENT ACCOUNT BALANCE



3 CUMULATIVE ADJUSTMENT OF THE CURRENT ACCOUNT BALANCE 2008-2015 (b)



4 DECOMPOSITION OF CUMULATIVE ADJUSTMENT IN CURRENT ACCOUNT BALANCE 2008-2015 (b)



SOURCE: E. Moral-Benito and F. Viani (2017) *An anatomy of the Spanish current account adjustment: the role of permanent and transitory factors,* Working Paper, Banco de España, forthcoming.

a The decomposition is based on a regression of the current account balance on a number of cyclical and non-cyclical factors. Specifically, cyclical factors include output gap (economic cycle) and financial market volatility proxied by the VIX index (financial cycle). Non-cyclical factors include unit labour costs and financing costs proxied by long-term interest rates (competitiveness), institutional quality proxied by the *International Country Risk Guide* survey (country risk), population ageing (demographics), the cyclically-adjusted fiscal balance, oil prices and energy dependence (oil), private credit growth (credit) and medium-term GDP growth forecasts (expectations).

b The regression used is the same as in panel 1, but considering the cumulative changes in each factor rather than their levels.

finances to the external balance adjustment would, according to these estimates, be around 20% (see panel 4 of Chart 3.4).[8] The budget deficit in structural terms is still far from the targets set by the European Commission within the framework of the Stability and Growth Pact, which indicates that there is leeway for the positive contribution of this factor to continue to improve the current account balance.[9]

The gains in competitiveness posted by the Spanish economy also played a significant role. Spain's unit labour costs relative to the rest of the euro area decreased by 11% between 2008 and 2015. This improvement, together with that in financial conditions, proxied by the behaviour of long-term interest rates, would, in accordance with these estimates, explain around 9% of the cumulative adjustment in the current account between 2008 and 2015. Admittedly, the effect on the current account of lower financing costs may

8 The cyclical effect of changes in the structural component of the budget deficit upon inclusion of the output gap have been stripped out of this estimated contribution.

9 Note that the important factor for the current account is the structural fiscal balance relative to the other countries. Thus, on IMF data, in 2015 Spain's structural balance relative to the other countries improved despite worsening in absolute terms.

be ambiguous a priori due to its expansionary effect on final demand; yet according to the results obtained, this decrease contributed to the current account adjustment insofar as the effect of the improvements in the competitiveness of Spanish firms in the international markets has prevailed over its expansionary effect on the economy.

Population ageing and lower future growth expectations also played a part in the correction of the external deficit. Economic theory predicts that both population ageing and lower future growth expectations give rise to lower levels of investment and consumption which, in turn, would be reflected in less dynamic domestic demand. The dependency ratio, measured as the ratio of the population aged over 65 to the population aged between 16 and 65, has increased in Spain by 4.2 pp from 2008, and is expected to increase by 19.6 pp in the next 20 years, according to INE projections. Also, as described in Chapter 1 of this report, the potential growth of the Spanish economy has been revised downward to around 1.5%, from rates exceeding 3% before the crisis. These two factors explain a non-negligible percentage of the correction of the current account balance. Specifically, according to the results of the analysis (see panel 4 of Chart 3.4), the behaviour of these two factors would explain around 7% and 5% of the adjustment between 2008 and 2015, respectively.

4 Goods and services exports and imports

The aggregate evidence points to a better performance of exports than in the pre-crisis period which has not so far been accompanied by a change of similar proportions in the dynamism of imports. The behaviour of goods and services exports and imports as a percentage of GDP has differed in the last few years from that in the pre-crisis period. While exports have stood clearly above their pre-crisis levels, imports have been slightly below (see panel 1 of Chart 3.5). Once the cyclical component of trade transactions with the rest of the world has been stripped out, the results suggest the presence of an increase in the structural growth rate of exports since the sharp contraction of world trade in 2009.[10] Meanwhile, although the change in the structural component of imports is of a smaller size, its growth rates are slightly below the pre-2009 levels, once the effect of domestic demand and import prices is removed (see panel 2 of Chart 3.5). The following sub-sections explore in more detail these two components of aggregate demand to identify the factors determining their behaviour.

4.1 GOODS AND SERVICES EXPORTS

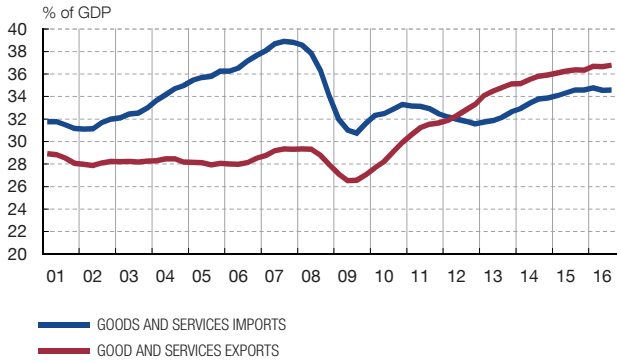
Demand from external markets is the main determinant of Spanish exports, against a background in which their geographical diversification has increased considerably. Following the sharp contraction of world trade in 2009, the recovery of external demand has brought positive contributions to the growth of Spanish exports, which are, however, lower than in the pre-crisis period given the weakness of world trade (see panel 3 of Chart 3.5).[11] The positive performance of exports is due to a refocusing towards non-EU markets, and, in particular, towards the emerging economies, where demand was generally more buoyant during the past recession (see panel 1 of Chart 3.6).

The improved competitiveness of the Spanish economy also favoured the strong performance of exports, thus contributing to the gains in market share seen in recent years. Compared with the negative contributions of export prices in the pre-crisis years, the Spanish economy's recent gains in competitiveness have helped Spanish export

10 This structural growth is based on the estimation of an unobserved components model in which the cyclical component of exports depends on export prices and world demand, while that of imports depends on import prices and domestic demand. See, for example, R. Gordon (1997), «The Time-Varying NAIRU and its Implications for Economic Policy», Journal of Economic Perspectives, 11, pp. 11-32.

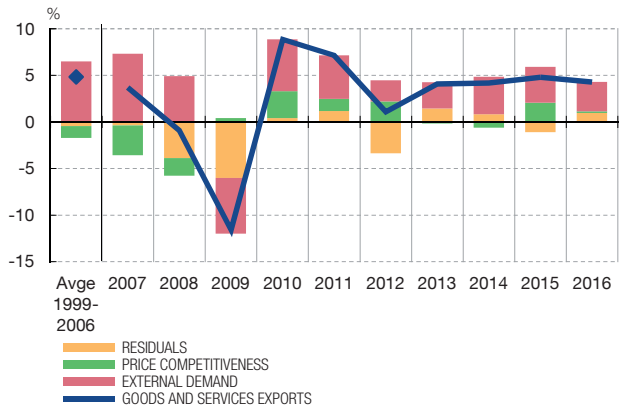
11 For more details on the estimation of these contributions, see E. Prades and C. García (2015), "Actualización de la función de las exportaciones de bienes", *Boletín Económico,* April, Banco de España.

1 RATIO OF EXPORTS AND IMPORTS TO GDP (in real terms)

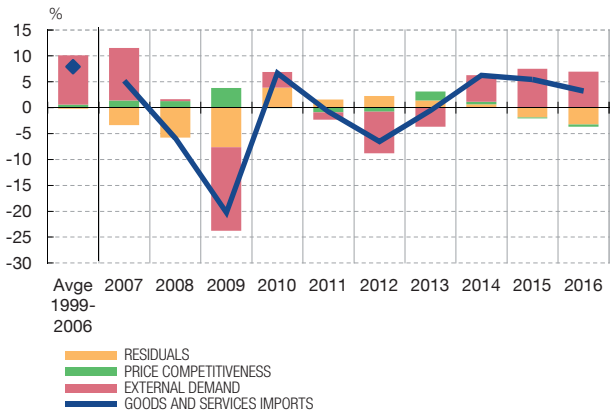


2 STRUCTURAL GROWTH OF GOODS AND SERVICES EXPORTS AND IMPORTS AS A PERCENTAGE OF GDP (a)

3 REAL GOODS AND SERVICES EXPORTS AND THEIR MAIN DETERMINANTS (b)



4 REAL GOODS AND SERVICES IMPORTS AND THEIR MAIN DETERMINANTS



SOURCE: INE and Banco de España.

a Structural growth rates are obtained from the estimation of an unobservable components model in which a cyclical component is subtracted from observed growth. The cyclical component depends on export prices and world demand in the case of exports and on import prices and domestic demand in the case of imports.
b For more details on the estimation of these contributions, see E. Prades and C. García (2015), "Actualización de la función de las exportaciones españolas de bienes", *Boletín Económico,* April, Banco de España.

growth to outstrip world import growth, enabling widespread gains in international market share and greater geographical diversification towards markets with higher growth potential (see panel 2 of Chart 3.6).

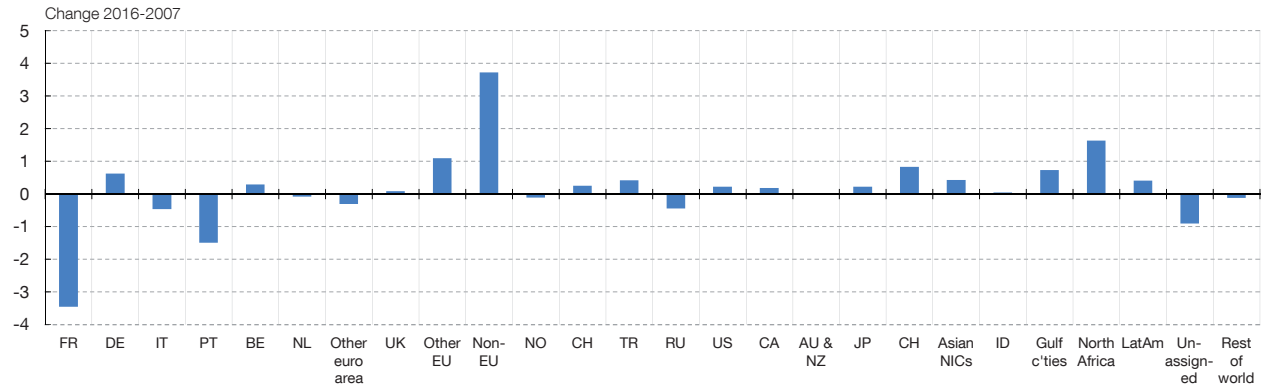
The weak domestic demand seems to have prompted Spanish firms to focus more on exports. Domestic demand went from representing 76% of GDP in 2009 to 67% in 2015 (see panel 3 of Chart 3.6). This decrease coincides with a phase of strong growth of goods exports, up from 15% of GDP in real terms in 2009 to approximately 22% in 2015. Against a background of persistently weak domestic demand, the empirical evidence suggests that Spanish firms have been seeking new markets outside Spain.[12] Indeed, firm-level information from the International Transaction Reporting System in force until end-2013[13] and from the Banco de España's Central Balance Sheet Data Office showed that the firms whose domestic sales fell most sharply were the ones whose goods and

12 See, for example, P. Soares and E. Prades (2016), On domestic demand and export performance in the euro area countries: does export concentration matter? ECB Working Paper 1909.
13 For a description of this source, see Section 2.4.1 of the Banco de España publication "Balance of Payments and International Investment Position of Spain, 2013".

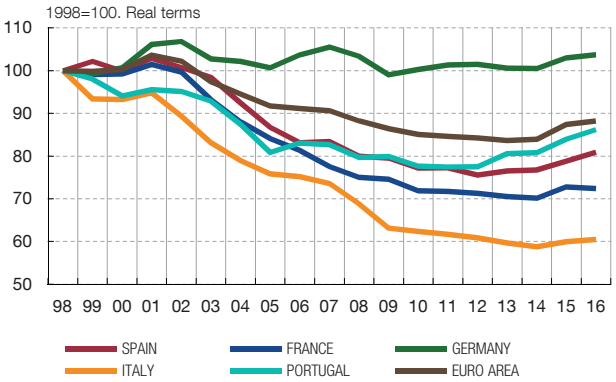
DETERMINANTS OF EXPORTS

CHART 3.6

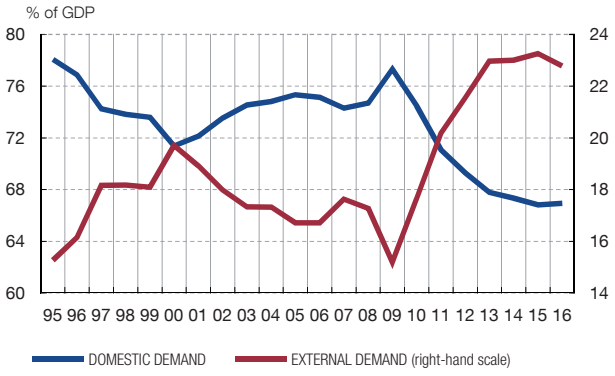
1 CHANGE IN THE DISTRIBUTION OF EXPORTS, BY COUNTRY



2 GOODS AND SERVICES EXPORT SHARES

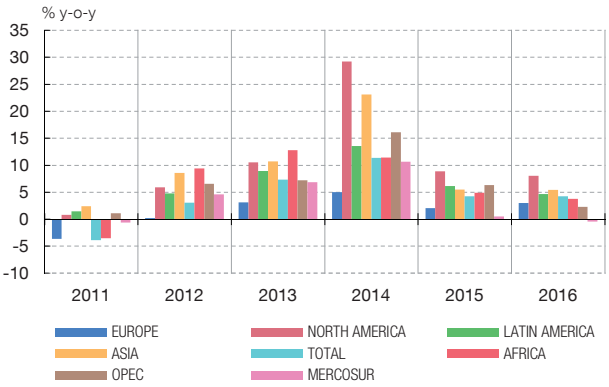


3 DOMESTIC DEMAND COMPARED WITH EXTERNAL DEMAND (a)



4 PERCENTAGE OF EXPORTING FIRMS

5 GROWTH OF NUMBER OF REGULAR EXPORTING FIRMS, BY DESTINATION (b)



SOURCES: Banco de España, Departamento de Aduanas e Impuestos Especiales de la Agencia Estatal de la Administración Tributaria, ICEX and INE.

a External demand refers to goods exports.
b A regular exporter is one that exports uninterrumptedly for four years running.

EFFECT OF GROWTH IN DOMESTIC DEMAND ON EXPORTS. MICROECONOMIC EVIDENCE (a) TABLE 3.1

Period 2004-2013	-0.025***
	(0.001)
Period 2004-2007	-0.028***
	(0.001)
Period 2009-2013	-0.037***
	(0.002)

SOURCE: Banco de España.

a The table sets out the coefficients of ordinary least squares estimates of a regression of the annual growth rate of firm-level exports on the growth of firms' domestic sales. Also included in the regression are fixed firm effects and fixed sector-year effects, along with the following control variables: firm size, import growth, inputs, productivity and debt ratio.
The number of firms analysed is 1,077,862. Standard error in brackets with firm-level cluster.
*, **, *** denote statistical significance at 10%, 5% and 1%, respectively.

services exports underwent the strongest relative growth. This association is apparent even in comparison of firms belonging to the same sector (and thus exposed to the same sectoral shocks) and having the same size, productivity, indebtedness and import dependency (see Table 3.1).

As a result of the aforementioned factors, there were significant long-term increases in the export base of the Spanish economy. The total percentage of exporting firms grew sharply from 2009 (see panel 4 of Chart 3.6), with small firms (fewer than 50 employees) being those which most stepped up their entry into foreign markets,[14] although their contribution to total exports continues to be low.[15] At the same time, the number of regular exporting firms has increased in the last four years by 31%, most notably in destinations with high potential growth such as Asia and the United States (see panel 5 of Chart 3.6). The fixed costs associated with the decision to export indicate that some of the broader exporting firm base is of a structural nature and, therefore, this development should prevail even in a scenario of persistent recovery in domestic demand.[16]

4.2 GOODS AND SERVICES IMPORTS

Domestic demand has been the main factor shaping imports in Spain, while the contribution of import prices has been limited. The fall in domestic demand triggered a sharp contraction of imports in the first stage of the crisis, while, in the recent recovery, its resurgence has not yet been sufficient to recoup the pre-2007 growth rates (see panel 4 of Chart 3.5). This lower contribution from domestic demand to import growth may reflect, at least partly, the behaviour of certain factors which, although weakening the dynamism of domestic demand, contribute to the correction of the external balance (fiscal adjustment, population ageing, lower growth expectations and others). Given the traditionally low price elasticity of imports, the process of internal devaluation played a more limited role in the aggregate behaviour of goods and services imports over the last few years.

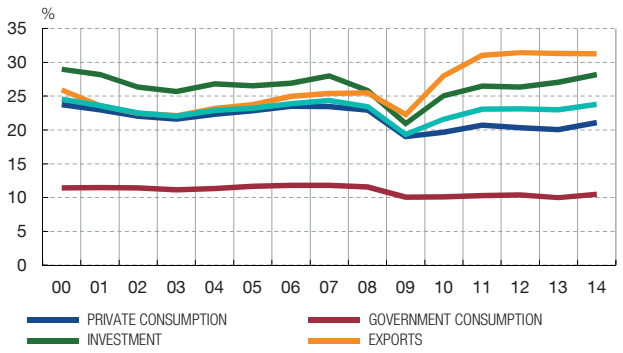
The strong performance of exports has also caused imports to increase to the extent that the former generally require the use of imported products. This is particularly clear in a setting of geographical fragmentation of production through the global value chains, which increase the international trade transactions per unit of product. The information

14 On balance of payments information, the percentage of exporting firms with fewer than 50 employees rose from 2.4% in 2009 to 3.4% in 2013.

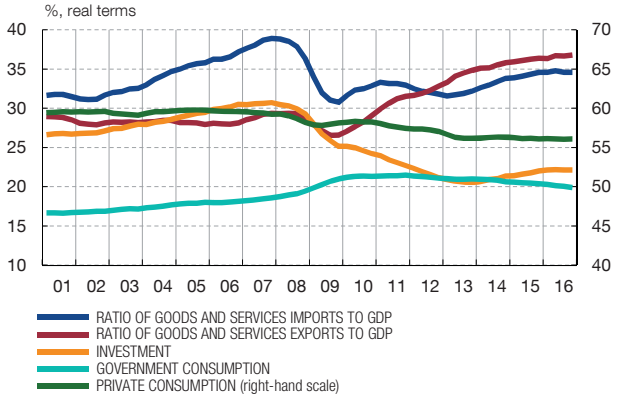
15 See M. J. González and C. Martín (2015), "The internationalisation of Spanish SMEs: main developments and their determinants", *Economic Bulletin,* December, Banco de España.

16 See, for example, R. Baldwin and P. Krugman (1989), "Persistent Trade Effects of Large Exchange Rate Shocks", Quarterly Journal of Economics, 104, pp. 635-654.

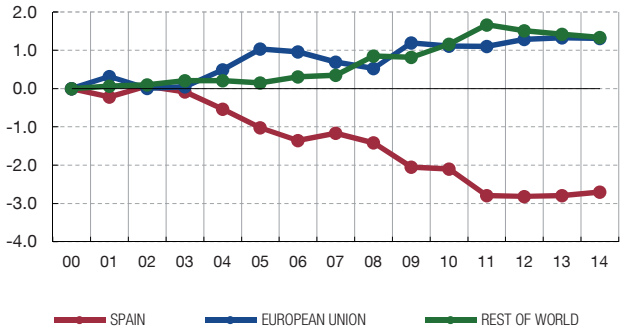
1 IMPORT CONTENT OF GDP COMPONENTS (a)



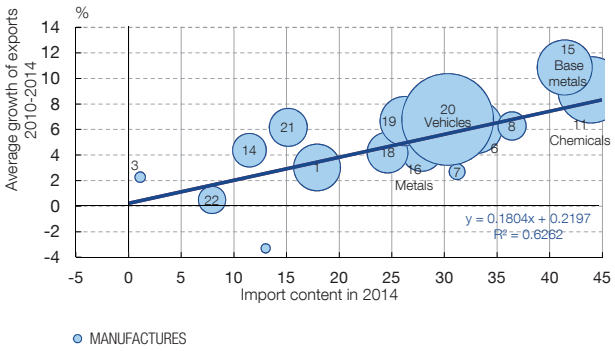
2 RATIO OF DEMAND COMPONENTS TO GDP



3 DISTRIBUTION OF INPUTS USED BY SPANISH FIRMS, BY GEOGRAPHICAL ORIGIN (b)



4 IMPORT CONTENT AND CHANGE IN EXPORTS, BY SECTOR (c)



SOURCES: QNA, INE, Departamento de Aduanas e Impuestos Especiales de la Agencia Estatal de la Administración Tributaria and WIOD 2016.

a The import content is calculated according to Bussière et al.(2013), *Estimating trade elasticities: Demand composition and the trade collapse of 2008-2009,* using WIOD data. Import content is defined as the directly or indirectly imported portion (as percent) of each GDP demand component.
b Change in weight of inputs by origin in the total with respect to that in 2000. The sample used is a panel of firms active in all years of the period 2000-2014.
c Import content is calculated from the standpoint of GDP supply. Circle size represents the weight of each sector in total exports.

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provided by the world input-output database (WIOD) allows us to quantify the high and growing import content of Spanish exports, which rose from 25% in 2008 to 31% in 2014 (see panel 1 of Chart 3.7).[17]

The higher export growth in the sectors with greater import dependency may be behind the widespread increase in the import content of exports in recent years. According to the information in the world input-output tables, the recent gain in weight of the import content of exports is due more to increased exports in the sectors characterised by a higher import content than to an increase in imported products in each sector (see panel 4 of Chart 3.7). For example, sectors such as automobiles or chemicals have a high import dependency and, in turn, their exports have increased more.

17 For a description of how to calculate the import content of the GDP components using the input-output tables, see M. Bussière, G. Callegari, F. Ghironi, G. Sestieri and N. Yamano (2013), "Estimating trade elasticities: Demand composition and the trade collapse of 2008-2009", 5, pp. 118-151.

The import content of other GDP components which lost weight during the crisis has decreased. The import intensity of private and public consumption has fallen since 2009, perhaps due to the decrease in household income and to the fiscal consolidation of public finances (see panel 1 of Chart 3.7). Specifically, the decrease in disposable income may have induced some households to replace the consumption of imported products and services, generally more expensive, with increased consumption of national goods and services.[18] This phenomenon of substitution may have also contributed to reducing the import intensity of government consumption. Meanwhile, the weight of imports in investment recovered to pre-crisis levels following the fall in the period 2008-2010. All things considered, the information drawn from WIODs up to 2014 shows that the recovery of the pre-crisis levels of Spanish imports at the aggregate level conceals highly uneven behaviour by the various components of GDP.

The purchases abroad of Spanish firms suggest a certain replacement of imports by domestic production in the recent period. The firm-level information from the Banco de España's Central Balance Sheet Data Office allows the substitution of national goods made by Spanish firms for imports to be analysed. Specifically, following an ongoing decrease in the weight of national inputs, a change of trend is apparent from 2012 (see panel 3 of Chart 3.7). Once the effect of relative prices is stripped out, a fall in imports from the EU can be appreciated.[19] Also, it is found that, upon an unexpected injection of liquidity into the firm, the increase in imported inputs exceeded that of national firms in the years prior to the crisis, while this response changed sign in the years following the crisis, when the increase in imported factors was smaller than that in national factors[20] (see Table 3.3).

However, the process of reallocation of resources to larger, more productive firms meant that firms with a higher import content gained market share, concealing the process of import substitution in aggregate terms. The aforementioned results suggest that Spanish firms may be shifting the composition of their inputs towards national goods. However, this process of substitution is not reflected in the overall aggregates because the firms with a greater import dependency gained market share (see Table 3.2).[21] These firms tend to be larger, more productive and, above all, more export-oriented than the rest, which confirms the key role of exports as generators of imports (Box 3.2 characterises in more detail the features of Spanish importing firms).

5 Investment income and its determinants

The behaviour of the investment income balance of the Spanish economy played a major role in the observed adjustment in the current account. Compared with the trade balance analysed in the preceding section, the Spanish economy's investment income balance usually represents a lower percentage of the current account. However, this component played a major role in the adjustment seen in recent years, going from a deficit of 3.2% of GDP in 2008 to just 0.5% of GDP in 2015, against a background of sharp declines in interest rates (for more details, see Section 2).

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18 See R. Bems and J. di Giovanni (2016), "Income-induced expenditure switching", American Economic Review, 106, pp. 3898-3931.

19 The number of firms in the sample which meet the time requirements is very small, so the conclusions must be regarded due caution. E. Prades and C. Villegas-Sánchez (2017), "Input trade and importers in Spain", Working Paper, Banco de España, forthcoming.

20 The provision of liquidity considered is identified using information from the Banco de España's Central Balance Sheet Data Office on banks lending money to sample firms. For more details, see L. Alfaro, M. García-Santana and E. Moral-Benito (2017), "Credit supply shocks, network effects, and the real economy", Working Paper, Banco de España, forthcoming.

21 Note that this phenomenon is documented only until 2013 because no firm-level information on exports and imports after that year is available.

IMPORT CONTENT OF INTERMEDIATE CONSUMPTION USED BY SPANISH CORPORATIONS (a) TABLE 3.2

	Import content	Average	Covariance
2003	0.11	0.03	0.08
2004	0.11	0.02	0.09
2005	0.03	0.03	0.00
2006	0.12	0.03	0.09
2007	0.09	0.04	0.04
2008	0.05	0.02	0.04
2009	0.00	0.01	-0.01
2010	0.11	0.02	0.10
2011	0.13	0.02	0.11
2012	0.14	0.02	0.12
2013	0.15	0.03	0.12
2003-2007	100.0	100.0	100.0
2008-2013	107.4	61.4	130.4

SOURCE: Banco de España (Central Balance Sheet Data Office and balance of payments).

a Import content is defined as the ratio of total imports in each year to the total inputs used by firms. This aggregate import content can be expressed as the sum of two terms: first, the simple average of the import content of all firms (average); and second, a covariance term which increases when firms with greater import content increase in size (covariance). For more details, see G. S. Olley and A. Pakes (1996), "The Dynamics of Productivity in the Telecommunications Equipment Industry", Econometrica, vol. 64, No. 646, pp. 1263-1298.

EFFECT OF AN INCREASE IN FIRMS' RESOURCES ON IMPORTS (a) TABLE 3.3

Dependent variable	Import content growth (EU)	Import growth (EU)
Period 2004-2007	0.33***	0.09***
	(0.03)	(0.01)
Period 2008-2013	-0.50***	0.04***
	-0.03	(0.01)

SOURCE: Banco de España.

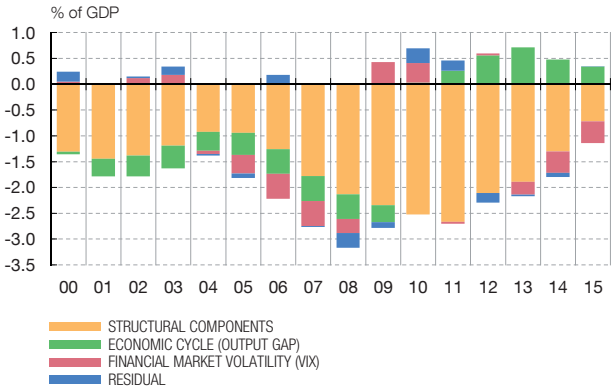
a The table sets out the coefficients of ordinary least squares estimates of import content growth on an increase in the exogenous liquidity of firms [for more details, see L. Alfaro, M. García-Santana and E. Moral-Benito (2017), "Credit supply shocks, network effects, and the real economy"]. Included in the regression are the following control variables: size, export growth, sales, productivity, debt and sector-year dummy variables.
The number of firms analysed is 1,078,193. Standard error in brackets with firm-level cluster.
*, **, *** denote statistical significance at 10%, 5% and 1%, respectively.

Both the economic cycle and the normalisation of financial conditions over the crisis period contributed significantly to the adjustment in the investment income balance in recent years.[22] Generally the income balance tends to improve in recessions of the Spanish economy (see panel 1 of Chart 3.8). Thus in the years before the crisis, the positive output gap and the abundant financing under favourable conditions in the international financial markets contributed to a deterioration in the income balance. These same determinants explain a significant part of the correction accumulated since the onset of the crisis.

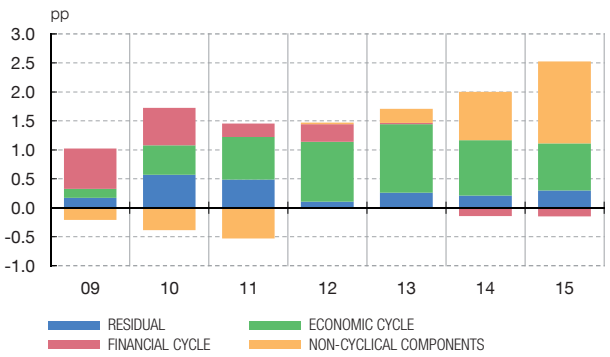
However, a significant part of the cumulative correction of the income balance is due to other potentially more structural factors, including most notably the increase in the weight of government debt holdings at the expense of private-sector liabilities held by non-

22 The analysis of this section is based on the same methodology used in Section 3 of this chapter, which consists of regression of investment income in Spain (as a percentage of GDP) on its fundamental determinants, which include both factors traditionally used in the literature and variables of particular importance for the Spanish case. E. Moral-Benito and F. Viani (2017), “An anatomy of the Spanish current account adjustment: the role of permanent and transitory factors”, Working Paper, Banco de España, forthcoming.

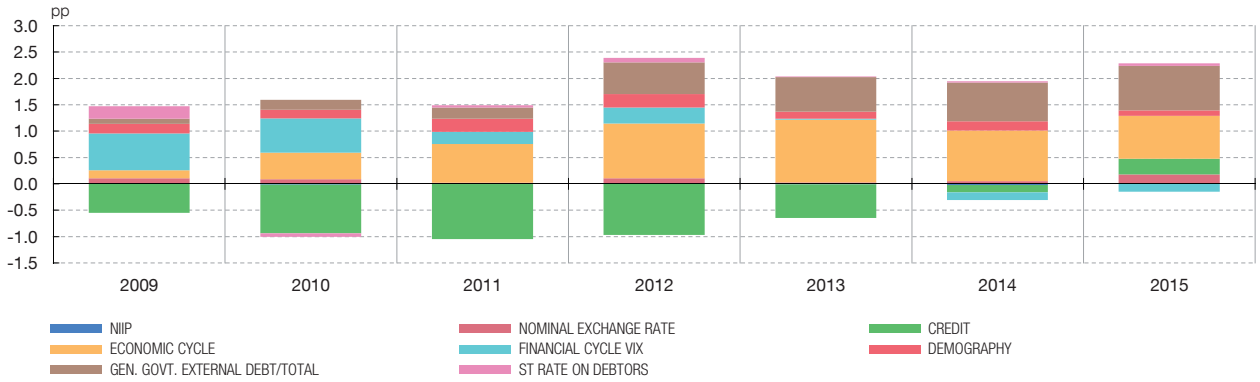
1 BREAKDOWN OF THE INVESTMENT INCOME BALANCE (a)



2 CUMULATIVE ADJUSTMENT IN THE INVESTMENT INCOME BALANCE (b)



3 BREAKDOWN OF THE ADJUSTMENT IN THE INVESTMENT INCOME BALANCE 2009-2015 (b)



SOURCE: E. Moral-Benito and F. Viani (2017), *An anatomy of the Spanish current account adjustment: the role of permanent and transitory factors,* WorkingPaper, Banco de España, forthcoming.

a The breakdown is based on a regression of the investment income balance on a number of cyclical and non-cyclical factors. Specifically, cyclical factors include the output gap (economic cycle) and financial market volatility proxied by the VIX index (VIX financial cycle). Non-cyclical factors include the net international investment position (NIIP), the nominal exchange rate, private credit growth (credit), population ageing (demography), government external debt as a percentage of external debt (general govt. external debt/total) and the short-term interest rate on debtors.
b The regression used is the same as in panel 1, but considering the cumulative changes in each factor rather than their levels.

residents. From 2014 other factors gained in importance and finally accounted for a considerable part (nearly 60%) of the total cumulative correction up to 2015 (see panel 2 of Chart 3.8). Notable among these factors were, firstly, the increase in the proportion of general government external debt, which tends to reduce the implicit return on fixed-income external liabilities (see panel 3 of Chart 3.8). Secondly, the gradual contraction of private credit was decisive in reducing Spain's stock of external debt, which, in turn, gave rise to a substantial improvement in the income balance. Finally, other factors with a more limited impact were the depreciation of the euro against the dollar, which boosted income from Spain's foreign-currency-denominated assets, and the decrease in short-term interest rates, which lessened fixed-income debt payments.

6 International investment position

Despite the correction of the external imbalance in recent years, the negative net international investment position (IIP) is still high. Although the current account surpluses since 2012 have generated net lending equal to 8% of GDP, the correction of the high external indebtedness built up in the previous expansionary phase[23] was somewhat

23 The enlargement of the negative net IIP in this period mainly reflected a deterioration of the portfolio investment balances, particularly in private-sector debt securities, followed by other investment. The contribution from direct investment net liabilities was small.

more modest, such that at end-2016 the negative net international investment position was still 85.7% of GDP, around 4.6 pp less than in 2012.

The degree of vulnerability represented by a given level of negative net IIP depends on a number of factors. The implications of a given level of external liabilities depend on their composition by instrument, sector, maturity and currency. Thus, given a certain level of external liabilities, the refinancing risks will increase with increasing proportion of claimable instruments, which, like fixed income, entail future payments of capital, interest or both. Also, it should be taken into account that a more negative external balance cannot always be extrapolated mechanically as higher vulnerability, since its course over time depends not only on the behaviour of the current account but also on so-called "valuation effects", as explained below.[24] Finally, the degree of vulnerability may also depend on whether the external liabilities are high in net or gross terms.[25]

The negative valuation effects derived from the normalisation of euro area financial conditions and the improvement in the outlook of the Spanish economy, prevented a sharp improvement in the net IIP. The negative valuation effects contributed significantly to the enlargement of the IIP in the past (around 36% of the total between 1999 and 2009) and also offset the improvement derived from the current account surpluses recorded from 2012 and a positive contribution of GDP growth during the current recovery (see panel 2 of Chart 3.9). These negative valuation effects, amounting to 10 pp of GDP throughout this latest period, do not, however, mean that external vulnerability deteriorated, because they are largely the result of normalisation of euro area financial conditions and the improved outlook of the Spanish economy, reflected in a revaluation of financial instruments issued by residents in Spain which exceeded that of foreign-issued instruments.[26]

The composition of external liabilities may also attenuate the external vulnerability of the Spanish economy. In the case of Spain, the composition of external liabilities by instrument, sector, maturity and currency may mitigate to some extent the external vulnerability resulting from such a high level of external debt. First, it should be taken into account that the Banco de España has net external liabilities of nearly 15% of GDP, which in gross terms amount to 35% of GDP, and which are not subject to refinancing risk. Excluding these, the increase in external liabilities built up since 2012 (12 pp of GDP, to 210% of GDP) was mainly in the form of debt liabilities.[27] The increase in fixed-income external liabilities relates to government debt, while those of the private sector decreased,

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24 The change in the IIP between two points in time is determined not only by the nation's net borrowing or lending, but also by valuation effects, which reflect the changes in value undergone by the financial instruments composing the stock of financial assets and liabilities, resulting from variations in their price due to fluctuations in the exchange rate of the currency in which they are denominated. Disregarding possible valuation effects, the IIP as a percentage of GDP can be approximated by the following expression: $iip_t - iip_{t-1} \approx iip_{t-1} (i_t - g_t) + ca_t$, where i is the nominal interest rate, g is the nominal GDP growth rate and ca is the current account balance in terms of GDP.

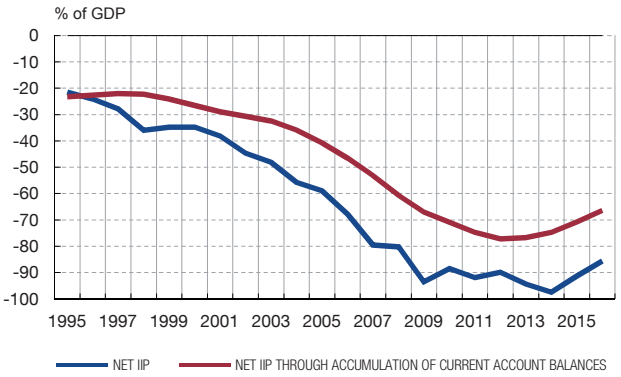
25 Some authors argue that the relevant indicator is gross external liabilities [Shin (2012)], since it is a better indicator of the degree of financial integration with the rest of the world and refinancing needs are derived from them. However, L. A. V. Catão and G. M. Milesi-Ferretti (2014), "External liabilities and crises", Journal of International Economics, 94, pp. 18-32, consider that net external liabilities are also a robust predictor of external tensions.

26 Thus, for example, once the tensions in the euro area sovereign market in mid-2012 had passed, the risk premia with respect to the euro area core countries decreased and, as a result, the price of Spanish government debt held by non-residents increased more sharply than that of foreign debt held by residents. Given that Spain has a net debtor position in instruments of this type, this price movement contributed to enlarging that debtor balance. Much the same occurred in the net position in shares and investment funds.

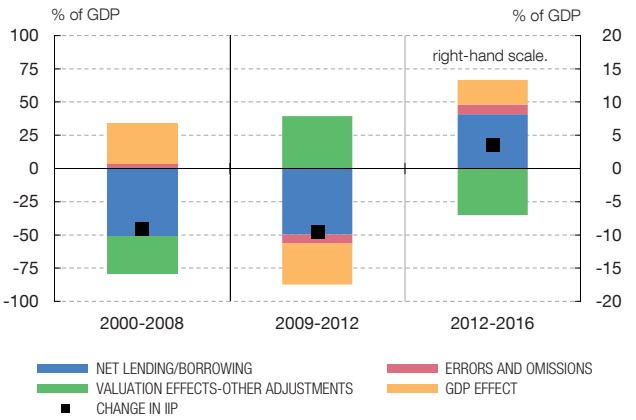
27 Non-debt liabilities, which do not necessarily carry payment obligations, consist of equity (as either direct investment or portfolio investment) and financial derivatives.

EXTERNAL DEBT POSITION OF THE SPANISH ECONOMY CHART 3.9

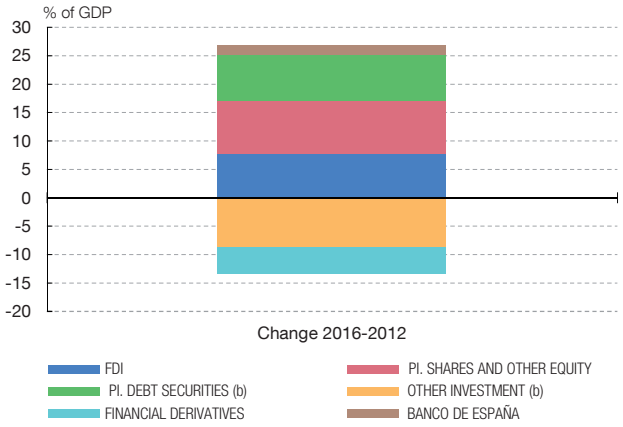
1 NET INTERNATIONAL INVESTMENT POSITION AND VALUATION EFFECTS



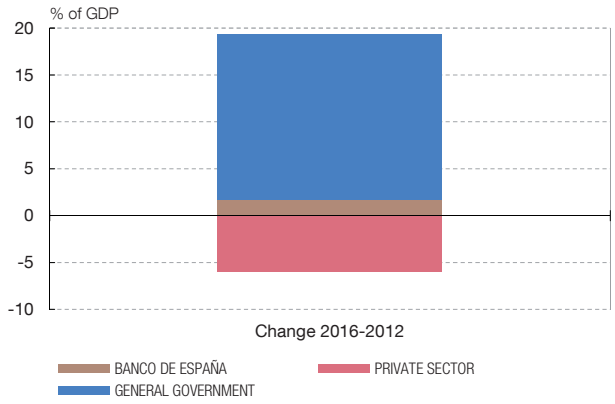
2 DETERMINANTS OF CHANGES IN THE NET INTERNATIONAL INVESTMENT POSITION



3 CHANGE IN EXTERNAL LIABILITIES BY FUNCTIONAL CATEGORY



4 CHANGE IN EXTERNAL LIABILITIES, BY SECTOR



SOURCE: Banco de España.

a Valuation effects are gains/losses relating to the exchange rate and/or financial instrument prices, while other adjustments are other changes in volume, including most notably write-offs owing to recognition of the impossibility of recovering funds, asset and/or liability reclassifications, and changes in residence of holders or issuers of financial assets and liabilities.

b Excluding Banco de España.

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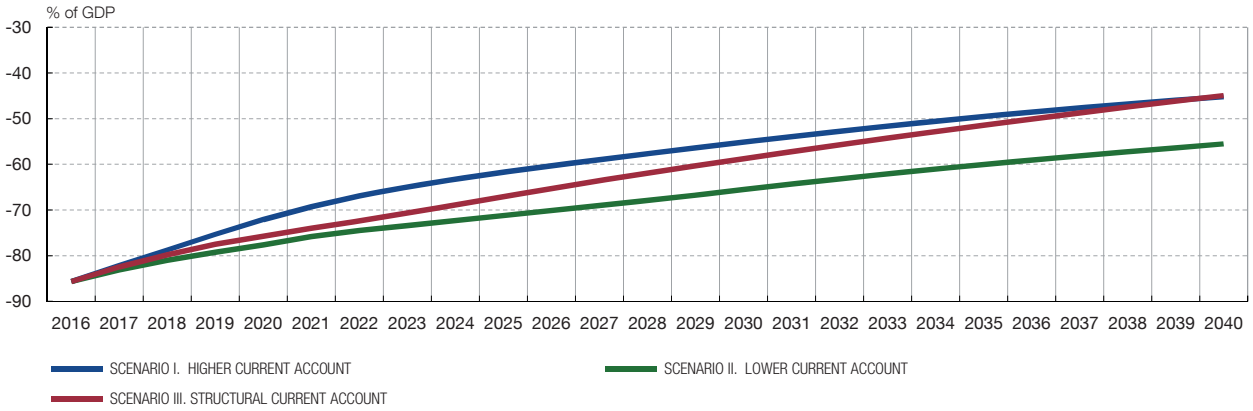
in line with the process of deleveraging of the resident sectors (see panels 3 and 4 of Chart 3.9). The increase in non-resident holdings of government debt from 2012 relate to the recovery of confidence of institutional investors in the Spanish economy. Additionally, the structure of liabilities by original maturity and currency contributes to moderating refinancing risk because the bulk of them are long term and denominated in euro (around 60% and 90% of the total, respectively).[28]

In any event, the current level of external indebtedness represents a risk which must not be underestimated. The estimates of an early warning indicator of external tensions for a broad group of countries, including Spain, based mainly on the levels of liabilities to

28 External assets (159 % of GDP, or, if the Banco de España is excluded, 139% of GDP) are another channel which may reduce external vulnerability in adverse situations, since residents can obtain one-off funds by reducing the balance of their investments abroad.

LONG-TERM NET IIP PATHS (a) CHART 3.10



SOURCE: Banco de España.

a The scenarios in the chart depict IIP sensitivity to changes in the long-run current account balance. In the three cases the medium-term assumptions are the same for real GDP growth, the deflator and nominal interest rates (1.3%, 1.8% and 3.1%, respectively), but differ for the current account balance used in each of them. In no scenario are there valuation effects. Scenario I is compatible with a convergence to a long-run current account balance of 0.7% of GDP. Scenario II the implicit current account balance in the long run is –0.4% of GDP; and Scenario III considers a long-term current account balance equal to the estimated structural balance in 2015 (–0.2% of GDP).

the rest of the world, corroborate this element of vulnerability, as they also do in the case of other euro area countries (see Box 3.3).

Reducing the IIP to less vulnerable levels will require running current account surpluses over a long period of time. The behaviour of the IIP depends on the current and capital accounts, on nominal GDP growth and on interest rates. To illustrate the possible future course of Spanish IIP, we construct some paths of this variable based on assumptions about the aforementioned factors.[29] The results of an exercise of these characteristics show that, assuming that the current account balance gradually converges to the cyclically-adjusted level estimated for 2015 (-0.2% of GDP), the negative net IIP would stand at 70% for around the next five years (see Chart 3.10), and would reach 60% of GDP around 2030. These paths are sensitive to a deterioration in the long-term macroeconomic outlook. For example, if potential real GDP growth decreases by 0.3 pp with respect to the baseline scenario and interest rates are 50 basis points (bp) higher along the entire path, the convergence on those levels would be delayed for roughly another five years.

Achieving external surpluses on a sustained basis will require healthy public finances and sounder ongoing gains in the competitiveness of the economy. Reducing the degree of vulnerability derived from external indebtedness in a shorter time period would require an additional improvement in the current account balance. This would require both structurally sounder public finances and factor and product market reforms so that the gains in external competitiveness in recent years can be maintained and put on a firmer basis.

29 Long-term real GDP and GDP deflator rates of 1.3% and 1.8%, respectively, are assumed for this year. The long-term nominal interest rate used in the simulation is 3.1%. The variables converge gradually from their current levels towards their long-term levels.

Since 2012 the non-energy trade balance has contributed positively to improving the trade balance, although this contribution has not been sufficient to offset the negative energy balance of Spain, which has thus continued to post a deficit (see Chart 1). In any event, the energy balance improved by 2.5 pp of GDP in this period to stand at -1.8% in 2016. The energy bill reflects the international market prices for goods of this type and the external energy dependence of the country. This second factor is determined by the relative importance of the various energy sources and the ability of firms and households to adopt technological improvements enabling them to use energy more efficiently. This ability will thus affect the improvement in the structural trade balance and the robustness of the economy to energy price movements.

Since it does not have significant sources of non-renewable primary energy, Spain has a high degree of energy dependence on the rest of the world and has to import most of its primary energy.[1] Chart 2 shows that currently around 75% of all primary energy used is imported, a figure which is very similar to that of 2000. However, this variable exhibits high cyclicity as a result of conjunctural changes in consumption and high supply rigidity. Thus, in the economic expansion before the last crisis, the degree of primary energy self-supply progressively declined and in 2007 national production only met 21% of resident agents' needs. Subsequently, the coverage of primary energy needs improved during the crisis to 29% in 2014 as a result of the lower economic activity, decreasing again in 2015 as activity recovered. Therefore, the coverage of primary needs largely reflects the observed behaviour in energy consumption (growth of 23% between 2007 and 1999, of -19% between 2014 and 2007 and a 4.6% in 2015). However, also contributing to the improvement in the degree of energy dependence on the rest of the world, although to a limited extent, was the production of primary energy, which increased by around 8% between 1999 and 2015 due to the increase in the stock of renewable energy generators.

As a means of separating the effect of the economic cycle from that of technological improvements and increases in local energy sources, we consider below two alternative measures of energy dependence for Spain and the euro area: first, energy intensity defined as the domestic consumption of energy per unit of GDP and, second, the ratio of net energy imports per unit of GDP (see Chart 3). No significant differences in energy intensity are appreciated between Spain and the euro area. However, Spain makes more purchases abroad than EU countries on average, due to its lesser endowment of primary energy sources, although this scarcity has been partially remedied in recent years. Focusing the analysis on Spain, it is seen that since 2005 the degree of energy intensity has trended downward. Sectorally, this improvement has been most marked in industry, followed by transport. A similar trend is apparent in the ratio of energy imports per unit of GDP, although here the decrease has been less marked, indicating that a portion of the energy consumed ceased to be imported and was replaced by local energy. Thus, as noted above, the fall in the Spanish economy's energy dependence may have a certain structural component.

To understand what factors may be behind this improvement, we analyse below the composition of the energy sources. Chart 4 shows that oil is the main source of primary energy consumed in Spain (42% of the total), followed by natural gas (somewhat less than 20%) and renewable energies (14%). Both natural gas and the renewable energies currently have much higher shares than in 1999 (11% and 1.9%, respectively), since they have gained relative weight at the expense of other sources, except for nuclear power, which has remained at similar levels (around 12%). The highest loss in share was that of oil, which dropped from 53% into 1999 to 42% in 2015. This lower dependence on oil makes the Spanish economy less sensitive to oil price fluctuations on the international markets[2] and, consequently, the trade balance is less exposed to oil prices. This chart also shows how all this has resulted in a gain in the degree of primary energy diversification[3] over these years.

The biggest demand for oil products comes from transport, a sector in which, for the time being, the use of other energies, although growing, is very low (see Chart 5). The use of gas increased in all sectors up to the crisis, but the slowdown in activity reduced its use, particularly in industry. At present, the consumption of this energy source exceeds that of 1999 in all sectors, except for industry and agriculture and fishing, its headway being most notable in the residential and services sectors. The expansion of the gas network, which has doubled since 2000, allowed a larger number of households to access this energy source, although it still has ample growth potential;[4] and, additionally, the environmental advantages of gas over other fuels have favoured its increasing use in other activities, such as heating and air conditioning in commerce. Renewable energies have enjoyed subsidies which have helped their expansion, particularly in electricity generation (see Chart 6). Although electricity is not a primary energy, it does represent a significant and increasing percentage of the final energy consumed, so it is particularly important to consider which primary energy sources it uses as raw material. Specifically, in the electricity sector, in recent years renewable energies (particularly wind) have ousted combined cycles which use imported gas as the primary energy to produce electricity.[5]

1 Primary energy is defined as those energy sources in which the energy is obtained directly from the natural resource (oil, gas and solid, nuclear and renewable fuels).

2 Given that Spain's oil production is insignificant. For example, in 2015 the level of self-supply of oil was 0.42%.

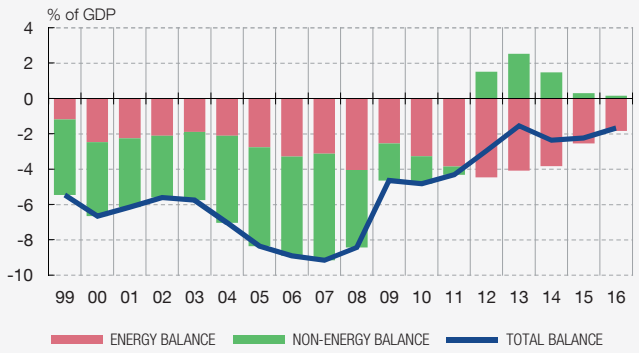
3 Measured as one minus the Herfindahl index, which is an index of the concentration of business activity which takes values between zero and one, higher values of the index denoting a higher concentration.

4 This is shown by the fact that in 2015, although 79% of the population lived in municipalities with natural gas supply, only 30% of houses were serviced [Annual Report, 2015, of the Asociación Española del Gas (Spanish Gas Association)].

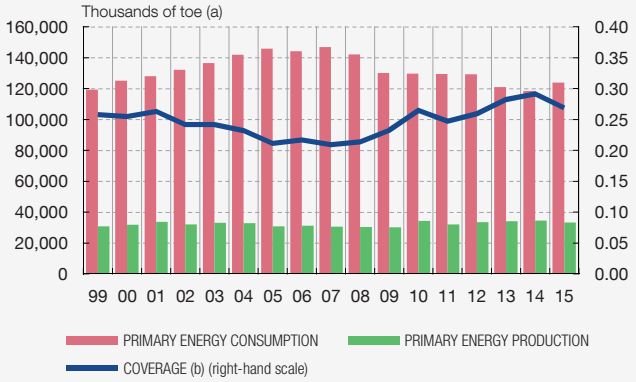
5 Currently combined cycle and coal-fired power stations are used as backup plants, i.e. they come into operation when there is little renewable generation due to scarcity of water, wind and sun.

SPAIN'S ENERGY DEPENDENCE

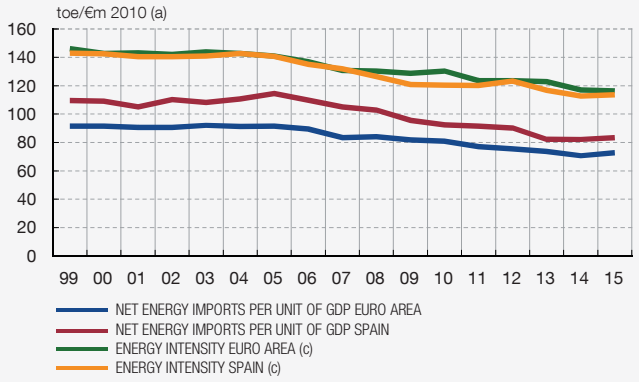
Panel 1
TRADE BALANCE



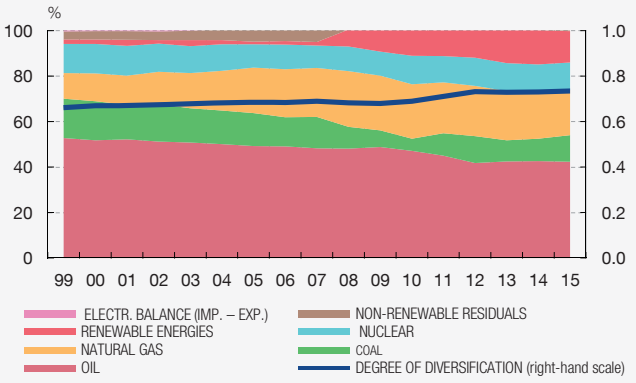
Panel 2
DEGREE OF PRIMARY ENERGY COVERAGE IN SPAIN



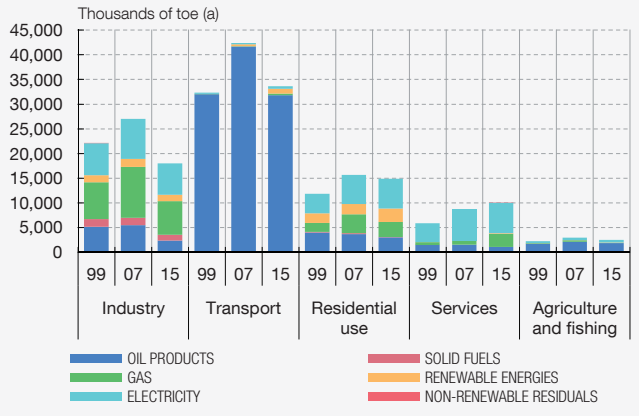
Panel 3
NET ENERGY IMPORTS PER UNIT OF GDP AND DEGREE OF ENERGY INTENSITY



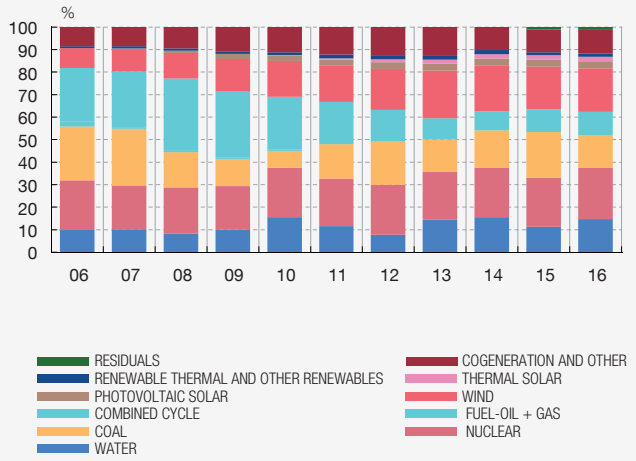
Panel 4
DEGREE OF PRIMARY ENERGY DIVERSIFICATION IN SPAIN



Panel 5
FINAL ENERGY CONSUMPTION



Panel 6
STRUCTURE OF MAINLAND ELECTRICITY GENERATION



SOURCES: Customs, Dirección General de Política Energética y Minas, Eurostat, INE, Red Eléctrica Española.

a toe = tonne of oil equivalent.
b Degree of coverage of primary energy = Primary energy production / Primary energy consumption.
c Degree of energy intensity = Domestic consumption of energy / GDP.

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To characterise the profile of Spanish importing firms,[1] this Box uses a database which combines firm-level information from various statistical sources and covers practically the total volume imported according to the National Accounts in the period 2000-2013. Specifically, information on the characteristics of non-financial corporations is taken from the Banco de España's Central Balance Sheet Data Office, which in turn draws on the financial statements submitted by those firms to the mercantile registers. The information on firms' cross-border transactions and the volume imported is taken from the Banco de España's international transaction reporting system.[2]

The weight of goods and services importers progressively decreased over the analysis period. Chart 1 illustrates how before the crisis the percentage of importing firms was substantially higher than the percentage of exporting firms. For example, in 2004 5.5% of Spanish firms were importers, while 3.5% were exporters.[3] Note that, in the expansionary period before the crisis, the percentage of both exporters and importers decreased. This was due to the significant inflow of firms characterised by low productivity and non-internationalisation. However, in the years following the crisis there was an increase in the percentage of exporting firms and a decrease in the percentage of importers which left these two types of firm at a similar level slightly above 4% in 2013. However, an increase in the average value imported (see Chart 2) maintained the dynamism of aggregate imports until 2013.[4]

There is scant information on the characteristics of importers because the literature has traditionally focused on analysing and characterising exporters.[5] However, the scant evidence available shows that importing firms have some characteristics similar to those of exporting firms when they are compared with non-internationalised firms. For example, Bernard *et al.* (2007) showed that importing firms are larger and more productive than non-importing firms in the United States, and Fernández *et al.* (2012)[6] report similar results for euro area firms as a whole. In Spain, importing firms are also larger and more productive than non-importers (see Table 1). Also, jobs with them are of a less temporary nature and they are more highly capitalised. Specifically, throughout the period 2000-2013, importing firms were four times larger than non-importers in terms of number of employees and 10 times larger in terms of net turnover. However, these differences increase significantly in the years following the global financial crisis, when importing firms are on average seven times larger than non-importers in terms of employees. And the trend is very similar in net turnover, where the sales of importing firms, which on average were seven times higher during the expansion, became 16 times higher on average in the crisis years.

The above evidence is in line with the hypothesis discussed in Section 4.2 of this chapter, on the effects of firm-level composition, which may have masked the process of import substitution at aggregate level insofar as importing firms have grown more in

1 The term refers to direct importing firms, since firms can also import indirectly by acquiring imported products through distributors.

2 For a description of this source, see Section 2.4.1 of the Balance of Payments and International Investment Position, 2013, published by the Banco de España.

3 Note that this is percentage is calculated with respect to the total firms in the sample used, which differs slightly from the total firms according to the DIRCE (Central Companies Directory).

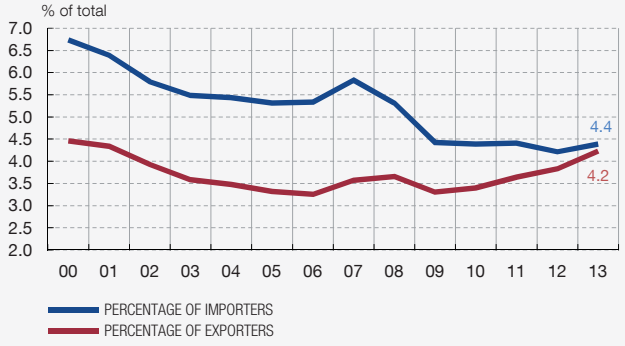
4 As in the case of exporters, it should be noted that total imports are highly concentrated in a small number of firms. Thus in 2013, 1% of the big importers accounted for around 55% of total imports, while 10% accounted for 70% of imports.

5 See A. B. Bernard, J. B. Jensen, S. J. Redding and P. K. Schott (2007), "Firms in International Trade", Journal of Economic Perspectives, vol. 21, No. 3, pp. 105-130; C. Martín-Machuca and A. Rodríguez Caloca (2009), "Una aproximación a las características de las empresas exportadoras españolas", Boletín Económico, May, Banco de España, and Chapter 2 of the Annual Report, 2015, of the Banco de España.

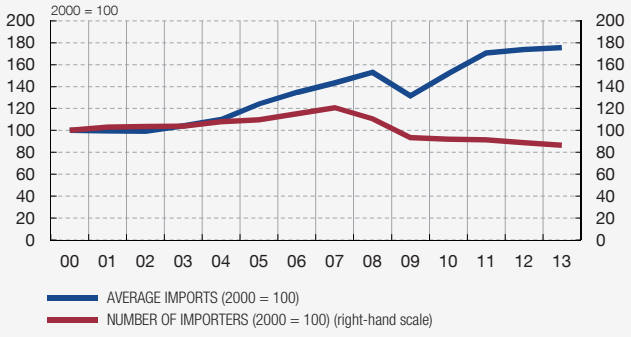
6 See C. Fernández, C. García, A. Rodríguez and P. Tello (2012), "Analysis of the import activity of European Firms", Economic Bulletin, October, Banco de España.

CHARACTERISTICS OF IMPORTING FIRMS IN SPAIN (a)

Panel 1
PERCENTAGE OF EXPORTERS/IMPORTERS OF GOODS AND/OR SERVICES



Panel 2
NUMBER OF IMPORTERS AND VOLUME IMPORTED



SOURCE: Banco de España, using SABI-CBI-BP information.

a Including only those firms with at least one transaction of more than €50,000. The total firms in this sample comprise those on which there is employment information.

relative terms. This effect is also observed in apparent labour productivity, although the productivity of importers was around 60% higher than that of non-importers during the expansion. This difference has increased to 100% in more recent years. Finally, the differences in temporary employment and capitalisation varied less over time, the temporary employment ratio of importers being 40% lower and their capitalisation being around 80% higher.

To quantify the relative importance of these factors and so explain the probability of a Spanish firm being an importer, we estimate below a linear probability model which takes into account the sector of activity in which the firm operates. Table 2 shows the results of the estimate, where each coefficient represents, within a given sector, how the probability of being an importer is affected by an isolated increase of 1 pp in each variable. For example, an increase of 1 pp in the number of employees raises the probability of being an importer by 5 pp. The results show that the characteristics which significantly increase the likelihood that a firm will become an importer are, in decreasing order of probability, being an exporter, size (proxied by number of employees) and apparent labour productivity. Specifically, being an exporter increases the probability of a firm also being an importer by approximately 25 pp. Also, an increase of 1 pp in the number of employees or an increase of 1 pp in productivity are associated with increases of 5 pp and 3 pp, respectively, in the probability of being an importer. This probability decreases with temporary employment ratio and increases with ratio of capital per employee, although the magnitude of these effects is significantly lower than, for example, the size effect. Distinguishing between the pre-crisis and post-crisis sub-periods, no significant changes are seen in the effects of size, productivity and exporter status.

Table 1
CHARACTERISTICS OF SPANISH IMPORTING FIRMS

Median	Firm size (a)	Temporary nature of employment (b)	Ratio of physical capital per employee	Net turnover (d)	Labour productivity (e)
2000-2013					
Total firms					
Importing	11.0	19.9	16.6	7.8	39.1
Non-importing	2.6	33.3	8.9	5.5	23.6
Manufacturing					
Importing	24.9	16.7	25.1	8.2	39.3
Non-importing	4.5	25.0	11.5	5.8	25.1
Services					
Importing	7.0	20.5	12.6	7.5	39.0
Non-importing	2.8	30.0	9.8	5.6	22.8
2000-2007					
Total firms					
Importing	10.0	22.2	15.0	7.6	35.8
Non-importing	3.0	38.5	7.4	5.6	22.4
2008-2013					
Total firms					
Importing	15.0	13.3	23.1	8.3	49.9
Non-importing	2.2	26.7	10.6	5.5	24.9

SOURCE: Banco de España, based on Mercantil Register, Central Balance Sheet Data Office and balance of payments information.

a Firm size is based on the number of employees.
b Job temporariness is defined as non-permanent jobs expressed as a percentage of the total.
c Calculated as tangible fixed assets divided by number of employees.
d Net turnover, expressed as logarithm.
e Calculated as value added divided by number of employees.

Table 2
DETERMINANTS OF THE PROBABILITY OF IMPORTING

	All			Firms in the manufacturing sector	Firms in the services sector
	2000-2013	2000-2007	2008-2013	2000-2013	2000-2013
Size (a)	0.043***	0.051***	0.041***	0.086***	0.038***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Job temporariness (b)	-0.002***	-0.005***	-0.002***	-0.001**	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fixed capital per worker (c)	0.008***	0.009***	0.006***	0.020***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Productivity (d)	0.028***	0.036***	0.024***	0.046***	0.029***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)
Export dummy (e)	0.224***	0.255***	0.236***	0.210***	0.202***
	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)
Constant	-0.127***	-0.183***	-0.138***	-0.319***	-0.117***
	(0.002)	(0.003)	(0.003)	(0.005)	(0.003)
Number of observations	1,254,098	613,950	640,148	301,156	661,803
Number of firms	376,654	244,689	257,932	85,113	208,273
Sector dummy variables	Yes	Yes	Yes	Yes	Yes
Year dummy variables	Yes	Yes	Yes	Yes	Yes

SOURCES: CBA-CBB-BP and Banco de España.
NOTES: *,**,*** denote statistical significance at 10%, 5% and 1%, respectively.
This table sets out the coefficients of the estimates of a linear probability model, where the endogenous variable takes a value of 1 if the firm is an importer and 0 if it is not. Coke and refined petroleum products are excluded from the manufacturing sector in the firm sample. Financial and insurance services are excluded from the services sector. Exogenous variables are expressed as logarithm, except for export status. All regressions include a constant and sector and time dummy variables. The coefficients represent the influence of each variable on the probability of importing, i.e. the marginal effects evaluated at the average.

a Firm size is based on the number of employees.
b Job temporariness is defined as non-permanent jobs expressed as a percentage of the total.
c Calculated as tangible fixed assets divided by number of employees.
d Productivity is calculated as value added divided by number of employees.
e Export status is determined on the basis of the firm's exports of goods and/or services.

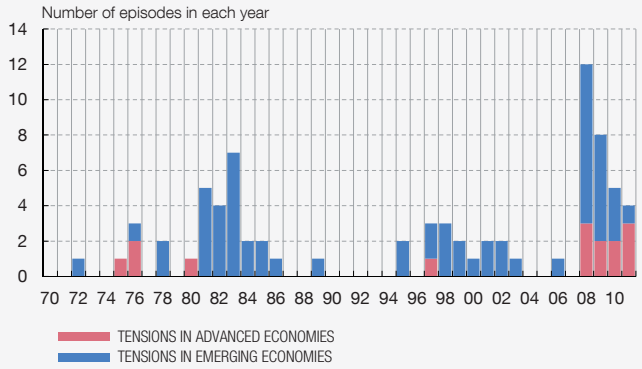
The level of external indebtedness of some euro area economies, including Spain, is a source of vulnerability, given that changes in the economic sentiment of the international financial markets could generate tensions in the refinancing of liabilities. In any event, external vulnerability depends not only on the level of an economy's external debt, but also on a wide range of factors such as an economy's cyclical position or financing conditions. Given their importance, the economic literature has attempted to construct so-called "early warning systems" to signal external tensions. These systems allow the identification of risk thresholds for external liabilities which, if exceeded, would indicate an appreciable increase in an economy's vulnerability to international market turmoil.

This box describes the construction of an indicator which broadly follows the methodology used by Hernández de Cos *et al.* 2014.[1] The early warning system is constructed in three main stages. First, what is meant by an episode of external turmoil must be defined. The definition used comprises not only default on external debt or bailouts by international organisations, but also seeks to include other bouts of external turmoil associated with foreign exchange crises and a very sharp prior build-up of external imbalances, a mechanism which, for example, raised the external fragility of some euro area countries during the past expansionary phase.[2] With this definition 76 episodes of external tension were generated for the period 1970-2011 in 15 advanced economies (see accompanying charts). Then variables were selected which significantly affected the probability of occurrence of these

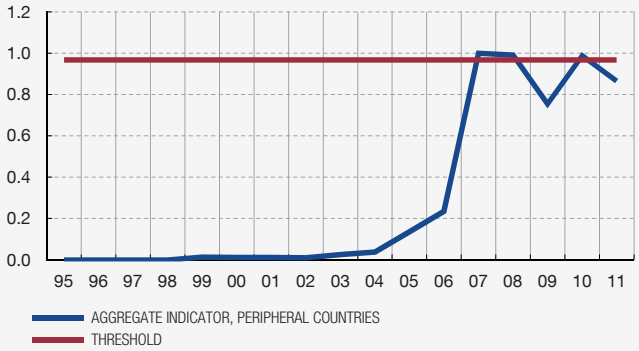
1 See P. Hernández de Cos, G. Koester, E. Moral-Benito and C. Nickel (2014), "Signalling fiscal stress in the euro area: a country-specific early warning system", Working Paper 1418, Banco de España.

2 Specifically, the literature [see L. A. V. Catão and G. M. Milesi-Ferretti (2014), «External liabilities and crises», Journal of International Economics, 94, pp. 18-32] considers that there is an episode of external turmoil when at least one of the following conditions is met: i) debt rescheduling or external debt default, or recourse to IMF or European Commission bailout programmes; ii) real effective exchange rate depreciation of more than 20% in a single year, against a background of falling real GDP (proxy of exchange-rate crisis), and iii) cumulative current-account deficit in the preceding three years exceeding at least 25% of GDP, provided the negative net IIP in t – 3 exceeds 50% of GDP.

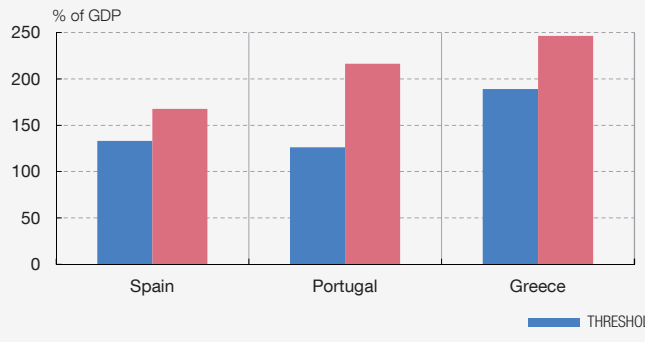
Panel 1
EPISODES OF EXTERNAL TENSION



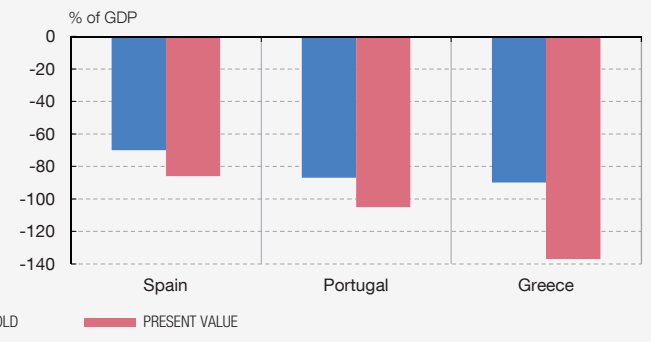
Panel 2
LEADING AGGREGATE INDICATOR OF RISK IN PERIPHERAL COUNTRIES



Panel 3
INTERNATIONAL COMPARISON OF GROSS EXTERNAL DEBT THRESHOLDS



Panel 4
INTERNATIONAL COMPARISON OF NET IIP THRESHOLDS



SOURCES: Lane and Milesi-Ferretti (2007), national sources and Banco de España.

episodes. Finally, an aggregate early warning indicator and so-called risk thresholds for each variable were estimated.

The possible determining factors of episodes of external turmoil are chosen through a regression analysis in which the explained variable takes the value of one in each episode of external turmoil and zero in other cases. The results indicate that the total external liabilities to the rest of the world, both in gross terms and, particularly, in net terms, is an advance indicator of the probability that external tensions will occur (see Table 1). The composition of this indebtedness is significant, because the probability of turmoil increases when it is in the form of debt liabilities, while debtor positions in foreign direct investment (FDI) would not raise external vulnerability. Another key factor raising the probability of external turmoil is the size of the current account deficit, which generally gives rise to higher external indebtedness. Finally, the level of external liabilities being equal, more highly developed economies usually have fewer episodes of financial turmoil.[3]

In view of these results, the variables chosen to construct the early warning mechanism are the IIP, total external liabilities, net and gross external debt and the current account balance.[4] Also constructed is an aggregate early warning indicator in which each

3 These results are robust to changes in the definition of an episode of turmoil.

4 These variables are available for the largest possible number of countries and have fewer quality problems than more disaggregated data.

Table 1
***PROBIT ESTIMATES.* PROBABILITY OF CRISIS (a)**
(Variables expressed as a percentage of GDP, with a one-year lag. Coefficients show average marginal impact)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Net external assets	-0.09***	-0.04***	-0.06***					
	(0.01)	(0.01)	(0.02)					
Total external liabilities					0.01**		0.01**	
					(0.003)		(0.006)	
Net external debt				-0,07***				-0.06**
				(0.02)				(0.03)
Gross external debt						0.01*		
						(0.007)		
Net assets in foreign direct investment				0,09***				0.07**
				(0,03)				(0.04)
Liabilities in foreign direct investment						-0.09**		
						(0.04)		
Current account balance (two-year moving average)		-0.64***	-0.9***	-0.71***		-0.85***		-0.94***
		(0.11)	(0.17)	(0.11)		(0.12)		(0.17)
GDP per capita relative to the United States	-0.07***	-0.07***	-0.06**	-0.1***	-0.11***	-0.09***	-0.14***	-0.13***
	(0.02)	(0.02)	(0.03)	(0.02)	(0.04)	(0.02)	(0.04)	(0.05)
Budget balance			-0.37*					0.3
			(0.21)					(0.26)
Deposit interest rates							0.03***	0.03***
							(0.01)	(0.01)
Number of observations	1,547	1,508	762	1,498	1,548	1,507	1,102	619
Wald chi2	130	148	73.7	142	98.2	131.3	98.3	80
Pseudo R2	0.19	0.24	0.34	0.26	0.13	0.24	0.18	0.35

SOURCE: Banco de España.

a The table shows the coefficients of the estimates of a normal probability model (Probit) in which the dependent variable is a dichotomic indicator of external tensions. The sample covers 15 advanced economies during the period 1970-2011. Standard error in brackets. *, **, *** denote statistical significance at 10%, 5% and 1%, respectively.
Regressions include yearly dummies.

variable is weighted by its predictive power and which signals in advance the appearance of turmoil.[5] The risk thresholds are specific to each country so as to maximise their predictive power [Hernández de Cos *et al.* (2014)].

Under this methodology, the aggregate early risk indicator for the euro area peripheral countries in the sample[6] (weighted by the weight of each GDP) rose in the years immediately preceding the latest crisis as external imbalances built up in the euro area, and reached a peak coinciding with the turmoil in the euro area sovereign debt markets in 2010. Regarding the estimated thresholds, the current external indebtedness of these economies stands above these risk thresholds, although the gaps vary greatly in size, ranging from 20% to 40% of both net GDP and gross external debt. Thus, according to these estimates, the financially most vulnerable economies of the euro area, which include Spain because of its high external financial dependents, continue to exhibit significant vulnerability to a hypothetical deterioration in the international capital markets.

The foregoing results must be viewed with due caution, given the methodological difficulties in constructing these indicators. In particular, it should be taken into account that the thresholds are estimated using a small number of episodes of crisis, which reduces their robustness and their predictive power outside the sample used for estimating them. Also, this predictive power decreases as the signalling window becomes longer in time.

In any event, the convergence of the net IIP towards less vulnerable levels will require firmer and sustained external surpluses. These will be achieved more readily as progress is made in the adoption of structural reforms to improve the structural soundness of the public finances – made particularly urgent by population ageing – and boost the competitiveness of the Spanish economy by genuine gains in productivity, moderation of costs and reallocation of factors to the sectors and firms with highest growth potential.

5 The criterion for building an early warning system is to minimise the forecasting error by assigning a higher relative weight to false negatives, since turmoil is an infrequent event.

6 Greece, Portugal and Spain.

4 FISCAL POLICY IN THE EURO AREA

Summary

The fragility of the economic recovery in the euro area and its dependency on the stimulus provided by the ECB's monetary policy measures have prompted a debate on the advisability of designing a more active euro area-wide fiscal policy. This debate takes place in a setting in which there are no signs of a sustained adjustment by inflation towards its medium-term objective, meaning that a reaction by the monetary authority to a fiscal expansion is not foreseen, and the costs of financing any budgetary stimulus with public debt are low. However, the high levels of public debt in many countries mean that the fiscal room for implementing expansionary fiscal policies is limited.

In a setting of limited fiscal space, the appropriate composition of fiscal policy measures is essential, in terms both of the instruments used and their distribution across the member countries. According to the estimates available, only a set of core euro area countries would have significant budgetary room for manoeuvre. In this respect, the evidence presented in this chapter on the relevance of these fiscal policy spillover effects suggests that increases in public investment in these countries might have a far-from-negligible effect on the economic growth of the remaining partners. For their part, the countries that should pursue consolidation efforts also have scope to design measures more conducive to growth, geared to raising the efficiency of the level of public spending and the synergies with the private sector, and to re-balancing the tax burden towards tax arrangements that distort private activity less.

From the aggregate euro area standpoint, the difficulties involved in implementing common fiscal policy actions, in a highly decentralised decision-making framework, suggest it would be advisable to design supranational instruments capable of withstanding adverse shocks. In particular, progress in creating some type of common cyclical insurance mechanism would be desirable. Ideally, this instrument would contribute to offsetting the absence of a centralised fiscal capacity, and complement the scant stabilising power of the risk-sharing public and private mechanisms currently in place. The evidence presented in this chapter suggests that a mechanism could be designed which, without committing major resources (below the current European budget), and without this entailing permanent cross-member country transfers, would enable a stabilising fiscal capacity similar to that attained with the US federal transfers system.

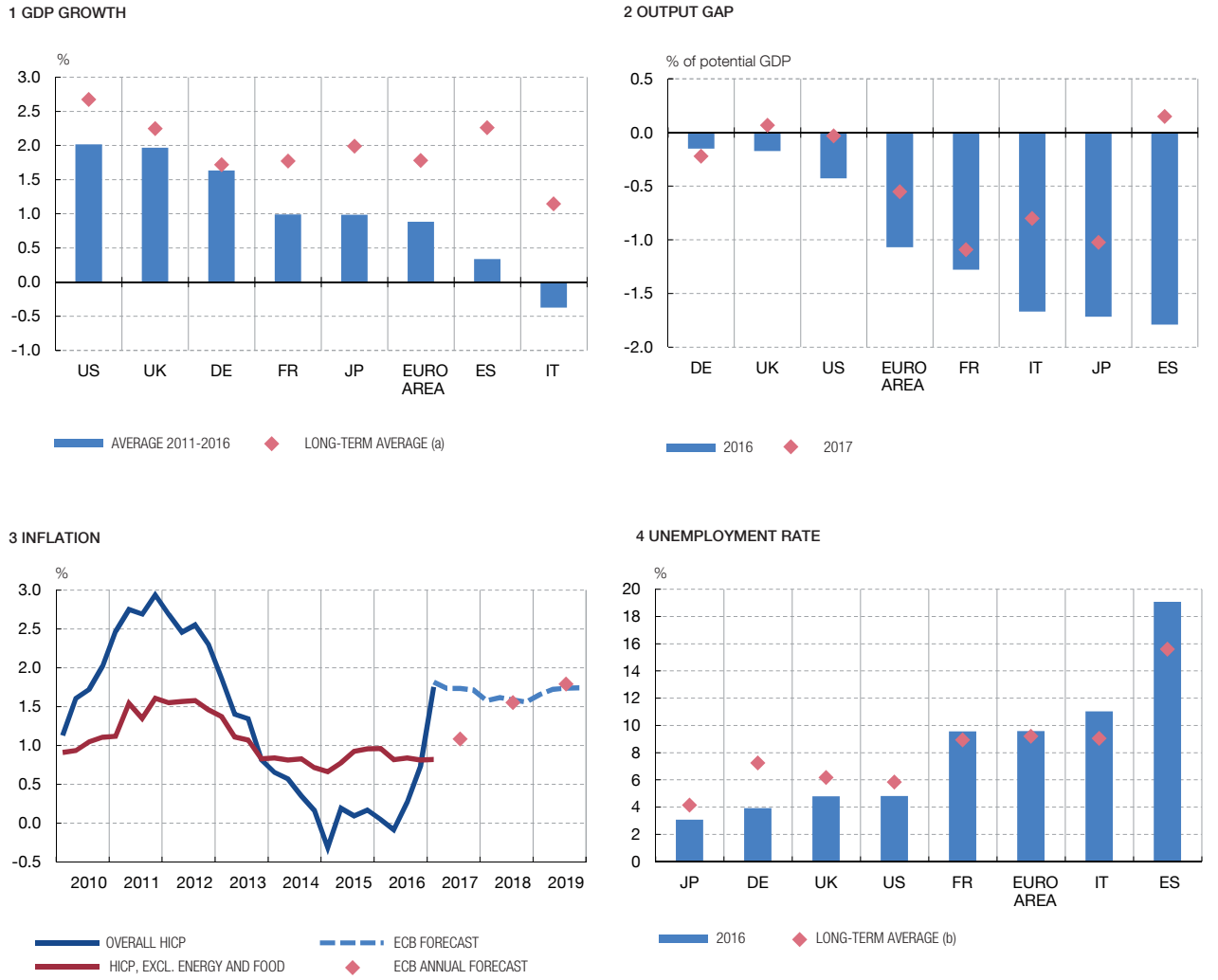
The current budgetary governance framework should encourage countries to generate room for manoeuvre during expansionary phases, so that the stabilising capacity of fiscal policy may increase in the euro area as a whole at times of crisis. In this respect, the European budgetary framework is complex and relatively opaque, which illustrates the need to simplify it. Recent proposals, which seek to give greater weight to public debt as a medium-term anchor and to the expenditure rule as an operational tool, are appropriate in this respect. In any event, reinforcing the oversight and control of fiscal rules is key to ensuring their fulfilment.

1 Introduction

The macroeconomic situation in the euro area continues to be one of a gradual and fragile recovery. Despite the recent improvements in the euro area economy (see Chapter 1 of this Report), the uncertainty surrounding US economic policies, and that arising from Brexit and from the elections in various European countries, in a setting in which high

GROWTH, UNEMPLOYMENT RATE AND INFLATION IN THE EURO AREA

CHART 4.1



SOURCES: European Commission, Eurostat, ECB and IMF.

a Average growth: 1980 to 2016.
b Average unemployment rate: 1995 to 2016.

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unemployment, low economic growth and weaknesses in certain financial institutions persist, poses significant risks (see Chart 4.1). Moreover, the expected rate of inflation in the euro area in the medium term is still some distance off the medium-term reference of 2%, despite the recent price rebound, associated with the temporary effects linked above all to energy prices.

Monetary policy measures in recent years have contributed decisively to normalising financial conditions in the euro area and, more broadly, to alleviating the macroeconomic risks. In addition to holding the deposit facility rate at slightly negative levels, the ECB increased the monetary impulse through the provision of long-term financing to the banking system and, in 2014, it took the step of introducing a large-scale asset purchase programme (APP)[1], which remains active at present. Meantime, during

1 For an analysis of the monetary policy measures adopted by the Eurosystem during the crisis and of their macroeconomic implications, see Banco de España (2016), "The effects of the ECB's monetary policies in the recent period", Chapter 3 of the *Annual Report, 2015*.

these years, the fiscal policy stance in the euro area as a whole was contractionary, given the needs of the fiscal consolidation processes in a large majority of countries, meaning that monetary policy has taken a central role in the stabilisation of the euro area economy during this period.

Against this background, there has recently been a debate on the role fiscal policy should play in strengthening the economic recovery in the euro area.[2] Arguments have been made from various quarters in favour of an expansionary fiscal policy stance in the euro area as a whole. On one hand, the financing costs of public debt are low in the current situation of low interest rates, which increases the budgetary room for manoeuvre. At the same time, the markedly expansionary monetary policy stance would be conducive to any future fiscal stimulus proving effective, in that it is less likely, in a moderate inflation scenario, that such a stimulus would be countered by a tightening of monetary policy.[3] Within a monetary union, this latter circumstance tends, in turn, to amplify the expansionary effects of fiscal policy not only in the country in which it is applied, but also in the other economies sharing the same monetary policy. These positive fiscal spillover effects into different euro area countries may pave the way for possible euro area-wide fiscal policy coordination strategies.

However, the euro area's current institutional architecture is not conducive to coordinated budgetary action by its member countries. While the single monetary policy is the ECB's responsibility, fiscal policies are within the remit of the national authorities, thereby marking a substantial difference with other major economies (such as the United States and Japan, where both policies are managed at the national level). In the euro area, the fiscal policy stance is the result of aggregating the member countries' fiscal policies which are designed, nevertheless, under the constraint of having to fulfil the EU's common budgetary rules framework, defined in the Stability and Growth Pact (SGP). In this respect, at present the budgetary space for a good number of countries is limited, given the still-high levels of public debt and the uncertainties surrounding the medium-term dynamics of this variable, together with the budgetary pressures stemming from the adverse demographic trends associated with progressive population ageing.

At the same time, the lack of centralised fiscal policy instruments restricts the possibilities of undertaking discretionary measures across the euro area as a whole. The institutional framework of fiscal policy in the euro area lacks a centralised fiscal capacity enabling an automatic response to economic shocks. Thus, joint fiscal policy responses have been based on ad hoc initiatives coordinated by the European Commission (EC). This is the case, for instance, of the November 2008 "European Economic Recovery Plan" (EERP); the European Investment Plan (the so-called "Juncker Plan"), which was approved in late 2014; and, more recently, the EC Communication on the need for a more expansionary fiscal policy stance in the euro area, formulated in November 2016.

Against this backdrop, this chapter first reviews the arguments raised recently regarding the role of fiscal policy in the euro area as a factor of support for the economic recovery in the current situation. Subsequently, from a medium-term perspective, the challenges to

2 See, for example, OECD (2016), "Using the fiscal levers to escape the low-growth trap", *Economic Outlook*, chapter 2, vol. 2016, 2, Paris.

3 On the interaction of monetary and fiscal policies, see European Central Bank (2012), "Monetary and fiscal policy interactions in a monetary union", *Monthly Bulletin,* July, and E. Gerba (2017), *Monetary-fiscal policy interactions in the euro area*, mimeo, Banco de España.

the euro area's institutional framework in relation to budgetary policy coordination are analysed. In this connection, the main alternatives available for strengthening the stabilising capacity of fiscal policy through genuinely European instruments are discussed, and potential avenues for progress in respect of fiscal rules are assessed, in particular concerning their capacity to generate ex ante budgetary space that enables euro area economies to absorb adverse idiosyncratic and aggregate macroeconomic shocks alike.

2 The role of fiscal policy in the current economic situation

2.1 FACTORS CONDITIONING THE EFFECTS OF FISCAL POLICY IN THE EURO AREA

Under normal conditions, fiscal policy can act as an appropriate macroeconomic stabilisation tool, in particular through the automatic stabilisers.[4] Fiscal policy has two mechanisms for stabilising the economy. First, a substantial portion of public revenue and expenditure acts automatically as a stabiliser over the course of the business cycle. Faced, for example, with an economic slowdown, tax revenue – which depends on macroeconomic developments – falls, while certain expenditure items – such as unemployment spending – increase, acting as a stabilising mechanism for agents' income and, therefore, for aggregate demand. The operation of this mechanism is, moreover, granular, insofar as tax and transfer systems reflect the individual heterogeneity of the households that receive them, which enables the potentially adverse distributive effects derived from economic shocks to be cushioned.[5] Further, the automatic stabilisers operate symmetrically throughout the cycle, lessening overheating in periods of expansion and supporting economic activity during slowdowns, which limits their effects on the sustainability of public finances. For these reasons, the economic literature has traditionally been in favour of this channel of fiscal policy action.

The authorities also have the capacity to take discretionary decisions to alter public revenue and expenditure, with the aim of stabilising the economy. In this case the economic literature stresses that discretionary stimuli, when implemented, should be timely, temporary and targeted, in order to minimise the problems arising from potential delays in their implementation relative to the time at which the economy undergoes an adverse macroeconomic shock, to maximise the force of their impact and to reduce their negative effects on the sustainability of public finances.[6]

Various macroeconomic factors may influence the effectiveness of discretionary fiscal policy. The empirical literature has identified various factors that affect the size of the fiscal multipliers in the short term.[7] Fiscal stimuli tend to exert a greater effect the higher the proportion of households with financial constraints and which, therefore, base their consumption decisions on current income, when the measure is temporary and its reversal is credible, in the presence of greater nominal and real rigidities, when the automatic stabilisers of the budget are smaller, and in more closed economies. Further, the macroeconomic effects of fiscal policy tend to be asymmetrical, proving more powerful in

4 See European Commission (2016), "Towards a positive euro area fiscal stance", *EPSC Strategic Notes*.

5 See A. Mackay and R. Reis (2016), "The role of automatic stabilizers in the U.S. business cycle", *Econometrica*, 84, pp. 141-194.

6 See C. Bouthevillain, J. Caruana, C. Checherita, J. Cunha, E. Gordo, S. Haroutunian, G. Langenus, A. Hubic, B. Manzke, J.J. Pérez and P. Tommasino (2009), "Pros and cons of various fiscal measures to stimulate the economy", *Economic Bulletin,* July, Banco de España.

7 The fiscal multiplier measures the pass-through of a change in a budgetary policy instrument to economic activity, normally measured by GDP, over different time horizons. See the general conceptual discussion in European Commission (2012), "Report on public finances in EMU 2012", *European Economy*, no.4. For an analysis of the different channels discussed in the paragraph see, inter alia, T. Warmedinger, C. Checherita and P. Hernández de Cos (2015), *Fiscal multipliers and beyond,* Occasional Documents, ECB, no. 162; J. Galí, D. López Salido and J. Vallés (2007), "Understanding the Effects of Government Spending on Consumption", Journal of the European Economic Association, 5, pp. 227-270; and G. Corsetti, A. Meier and G. Müller (2012), "What Determines Government Spending Multipliers?", *Economic Policy*, 27, pp. 521-565.

situations of low growth than in upturns, and at times of low fiscal stress (i.e. in situations in which public debt is dynamically sustainable), as opposed to times at which public finances are highly vulnerable.[8] In particular, a fiscal policy stimulus, if occurring in a situation marked by uncertainty over the sustainability of public finances, associated, for example, with a high level of public debt, might entail significant increases in the financing costs of sovereign debt and, potentially, the attendant costs for all agents in the economy; as a result, its expansionary impact might be more limited.

The impact on activity also depends on the fiscal policy instrument used. The multipliers associated with discretionary increases in government consumption and in public investment are usually greater than tax multipliers, given the direct effect of the former on aggregate demand in the economy. As regards the different components of expenditure, the empirical evidence shows that the increase in public investment involves a higher multiplier than that of current expenditure (see Table 4.1). Moreover, it is to be expected that the greater effects of the increase in public investment last over time, insofar as spending is concentrated on the development of infrastructures in those areas where shortcomings are identified, in light of their impact on the accumulation of productive capital and on the economy's potential growth. However, the degree of efficiency of the projects and the delays in their implementation may have a bearing on the scope and effectiveness of these types of policies.[9] On the revenue side, there is generally estimated to be a greater impact associated with reductions in income tax, owing to the effects on labour supply, than with the case for changes in indirect tax. However, the heterogeneity of the estimates available in the literature on these effects is high.

In the current circumstances of the euro area, marked by very low public debt financing costs, the budgetary margin for manoeuvre is greater.[10] In circumstances such as the present, with low interest rates and, generally, strong investment demand for government fixed-income securities, the costs of financing a budgetary stimulus with public debt are low. Moreover, monetary policy has significantly reduced the interest burden for general government sectors in the euro area, affording greater space for fiscal policy. Indeed, the most immediate impact of the expansionary monetary measures on public finances is that which arises through the reduction in the cost of financing of public debt, which, in the case of the euro area as a whole, has fallen significantly since mid-2012, when the sovereign debt crisis was at its peak (see Table 4.2). One way of quantifying this impact would involve comparing the observed path of the interest burden with that which would have risen under a hypothetical scenario in which the interest rates on debt issues had held at the levels foreseen at the time prior to the announcement by the ECB of its asset purchase programme and the budgetary position had not changed with respect to the position then projected. The results of an exercise of these characteristics show that, from 2014 to 2016, the Spanish and Italian general government sectors would have saved around 1 pp of GDP, in cumulative terms, in interest payments on debt, as a result of the implementation of non-standard

8 For an analysis of the interactions between fiscal consolidation and private deleveraging processes, see J. Andrés, Ó. Arce and C. Thomas (2016), *When Fiscal Consolidation Meets Private Deleveraging,* Working Papers, no. 1622, Banco de España.

9 See J. De Jong, M. Ferdinandusse, J. Funda and I. Vetlov (2017), *The effect of public investment in Europe: a model-based assessment,* Working Paper 2021, ECB.

10 For a recent analysis of the presence of positive synergies between countercyclical fiscal policies and non-standard monetary policy measures in a context of very low interest rates, see Ó. Arce, S. Hurtado and C. Thomas, "Policy Spillovers and Synergies in a Monetary Union", *International Journal of Central Banking*, vol. 12, no. 3, pp. 219-277.

PUBLIC SPENDING MULTIPLIERS IN THE EURO AREA (a) TABLE 4.1

1 TOTAL MULTIPIER

	Empirical literature (b)			1985-2010 (c)						1980-2015 (c)					
	1985-2010			Blanchard-Perotti (d)			Local projection (e)			Blanchard-Perotti (d)			Local projection (e)		
	1 quarter	1 year	2 years	1 quarter	1 year	2 years	1 quarter	1 year	2 years	1 quarter	1 year	2 years	1 quarter	1 year	2 years
Germany	0.4	1.2	1.8	1.0	1.3	2.1	1.0	0.9	1.9	1.0	0.9	1.3	1.0	0.9	1.4
France	1.6	1.5	1.2	0.4	0.8	1.5	0.5	0.8	1.1	0.3	0.6	1.2	0.4	0.5	1.1
Italy	0.1	0.3	0.8	0.0	0.6	1.1	0.0	0.6	1.3	-0.1	0.6	1.1	-0.1	0.6	1.1
Spain	0.3	1.2	1.8	0.5	1.5	1.7	0.5	1.3	1.3	0.5	1.0	1.4	0.5	1.1	1.4
Euro area	0.6	1.4	1.7	0.4	1.3	1.7	0.5	1.5	2.3	0.3	1.0	1.3	0.3	1.0	1.1

2 MULTIPLIERS BY PUBLIC SPENDING COMPONENT

	Government consumption			Public investment		
	1 quarter	1 year	2 years	1 quarter	1 year	2 years
Germany	1.2	1.0	1.8	1.2	2.9	4.9
France	0.1	0.1	1.2	1.2	1.5	1.9
Italy	-0.1	0.9	1.4	0.0	0.7	1.8
Spain	0.6	0.8	0.0	0.3	1.1	2.3
Euro area	0.8	1.7	1.0	0.4	1.9	3.2

SOURCE: Banco de España.

a Impact on GDP derived from a €1 increase in public spending or in one of its components.
b See European Commission (2012), "Report on public finances in EMU 2012", European Economy, no. 4, and G. Cleaud, M. Lemoine and P.A. Pionnier (2014), *Which size and evolution of the government expenditure multiplier in France (1980-2010)?,* Working Paper, Banque de France (G2013/15).
c M. Alloza, P. Burriel and J.J. Pérez (2017), *Coordinated Fiscal Policies in the Euro Area: Revisiting the Size of Spillovers,* Working Paper, Banco de España, forthcoming.
d Following the methodology proposed by O. Blanchard and R. Perotti (2002), "An empirical characterization of the dynamic effects of changes in government spending and taxes on output", Quarterly Journal of Economics, 117, pp. 1329-1368.
e Following the methodology proposed by Ò. Jordà (2005), "Estimation and inference of impulse responses by local projections", American Economic Review, 95, pp. 161-182.

monetary policies (see Table 4.2).[11] In addition, the favourable impact of monetary policy on macroeconomic conditions[12], along with the subsequent improvement in public finances, should be added. This additional favourable impact on public finances in the euro area taken as a whole is estimated at around 0.7 pp of GDP over the 2014-2016 period (see Chart 4.2).[13]

However, given that public debt levels remain high in the euro area and in many countries, seeing through fiscal consolidation processes is vital for resuming sustainable public debt dynamics. If current economic growth dynamics are maintained and there is a pick-up in inflation rates to levels consistent with the ECB's objective, and under the assumption that the targets laid down by the SGP are met, public debt for the euro area as a whole should stand over the coming decade at levels below, but close to, 80% of GDP (see the left-hand panel of Chart 4.3).[14] However, debt dynamics and levels

11 In other countries, such as Germany and France, where the impact of these measures on sovereign rates has been less, this saving would have been significantly lower, standing between 0.1 and 0.3 pp of GDP.
12 See Chapter 3, "The effect of the ECB's monetary policies in the recent period", *Annual Report, 2015,* Banco de España.
13 Specifically, use is made of an extension of the model estimated in P. Burriel and A. Galesi (2016), *Uncovering the heterogeneous effects of ECB unconventional monetary policies across euro area countries*, Working Paper 1631, Banco de España.
14 See P. Hernández de Cos, D. López Rodríguez and J.J. Pérez (2017), *Los retos del desapalancamiento público, Documentos Ocasionales,* Banco de España, forthcoming.

PUBLIC DEBT INTEREST SPENDING DYNAMICS (2014-2016) AND ESTIMATED DIRECT IMPACT OF THE ECB PURCHASE PROGRAMME

TABLE 4.2

	Interest spending (% of GDP)		Implicit interest rates (%)		Average life of public debt (years)		Change in interest spending (% of GDP)			Estimated direct effect of the asset purchase programme			
								Due to change in		Change in 5-year rate		Counterfactual exercise (a)	
	2014	2016	2014	2016	2014	2016	Actual 2014-2016	Debt	Rates	Actual (bp)	% due to programme (b) (bp) (%)	Expected change in the 5-year rate in May 2014	Savings on interest spending, % of GDP
Euro area	2.7	2.2	2.9	2.5	7.3	7.9	-0.46	-0.07	-0.39	-117	67		
Germany	1.8	1.4	2.4	2.0	6.2	6.5	-0.39	-0.12	-0.27	-107	18	81	0.1
France	2.2	1.9	2.3	2.0	7.0	8.0	-0.29	0.02	-0.31	-110	51	94	0.3
Italy	4.6	4.0	3.5	3.0	6.8	7.3	-0.62	0.03	-0.65	-110	128	118	1.3
Spain	3.5	2.8	3.5	2.8	6.0	7.0	-0.66	-0.01	-0.65	-147	83	127	0.9
Netherlands	1.4	1.1	2.1	1.7	6.8	7.0	-0.34	-0.08	-0.26	-104	39	80	0.1
Belgium	3.3	2.9	3.1	2.7	7.5	8.5	-0.41	0.00	-0.41	-121	28	92	0.2

SOURCES: Eurostat and Banco de España.

a Differences with respect to a counterfactual exercise in which, in the absence of the programme, interest rates would have trended in line with what was projected in May 2014 (market forward rates).

b Study of events considering the change with a two-day window around 36 dates on which the ECB Governing Council announced measures, on which an account of its meeting was published or on which speeches were given by key members of the Council announcing the possibility of measures shortly being adopted. The TLTRO section includes the ECB Governing Councils of 8 May and of 5 June 2014.

are highly heterogeneous from one country to another. In some cases, convergence to levels below 100% of GDP would be much more gradual (see the blue line in the left-hand panel of Chart 4.3), and under scenarios of non-compliance with SGP objectives, of lower potential growth or of a swifter normalisation of financial conditions than that assumed under this scenario, public debt levels could only stabilise around their current high values (see the right-hand panel of Chart 4.3). With a longer-dated perspective, the estimated probability of euro area debt standing below the reference of 60% of GDP over a 10-year horizon is very low.[15]

The current expansionary euro area monetary policy stance would enhance the effectiveness of an expansionary fiscal policy applied by countries with fiscal space and the extension of its effects to the rest of the area. In the current situation, insofar as a tightening of the monetary stance is not expected in response to budgetary stimuli, provided that the latter do not compromise the medium-term price stability objectives, a fiscal impulse might have more expansionary effects. Chart 4.4 illustrates the role monetary policy plays in the transmission of the stimulus, in the context of a theoretical macroeconomic model of a monetary union with two differentiated regions or groups of countries, which seek to approximate the heterogeneity of the current euro area economies.[16] The first region is characterised by its low levels of private debt and public finances with sufficient fiscal space to undertake a budgetary expansion, like the current situation of core euro area countries, such as Germany and the Netherlands. The second

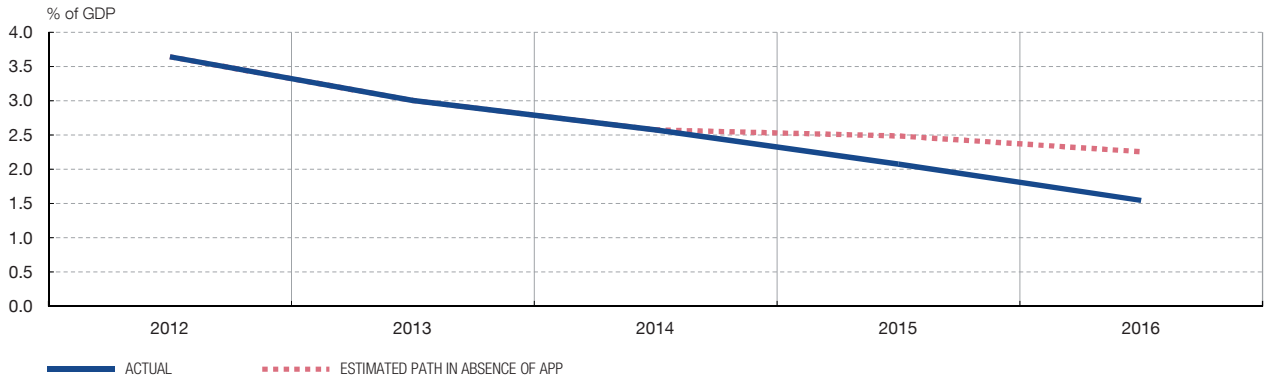
15 According to the simulations made with the model formulated by J. Andrés, J.J. Pérez and J.A. Rojas (2017), *Implicit Public debt thresholds: an empirical exercise for the case of Spain*, Working Paper 1701, Banco de España.

16 See Ó. Arce, S. Hurtado and C. Thomas (2016), "Synergies between monetary policy and national policies in a Monetary Union", *Economic Bulletin*, October, Banco de España.

IMPACT OF THE ECB ASSET PURCHASE PROGRAMME (APP) ON THE EURO AREA PUBLIC DEFICIT (a)

CHART 4.2

PUBLIC DEFICIT IN BOTH SCENARIOS



SOURCES: ECB and Banco de España.

a Estimation made using a global structural vector autoregressive (GSVAR) econometric model estimated with monthly data since 2008, in which the ECB's monetary policy impulses are identified on the basis of the behaviour of the central bank's balance sheet. See P. Burriel and A.Galesi (2016), *Uncovering the heterogeneous effects of ECB unconventional monetary policy,* Working Paper 1631, Banco de España.

b The counterfactual scenario "in absence of the APP" is constructed by subtracting the Programme's regular purchases from the central bank's balance sheet, in keeping with the December 2015 decision (€60 billion per month until March 2017) and the March 2016 decision to increase the volume of purchases to €80 billion from April 2016. The exercise does not therefore include the effects or interactions with other measures, such as the cut to the deposit facility rate, and it does not take into account relevant elements of the Programme such as the class of assets acquired.

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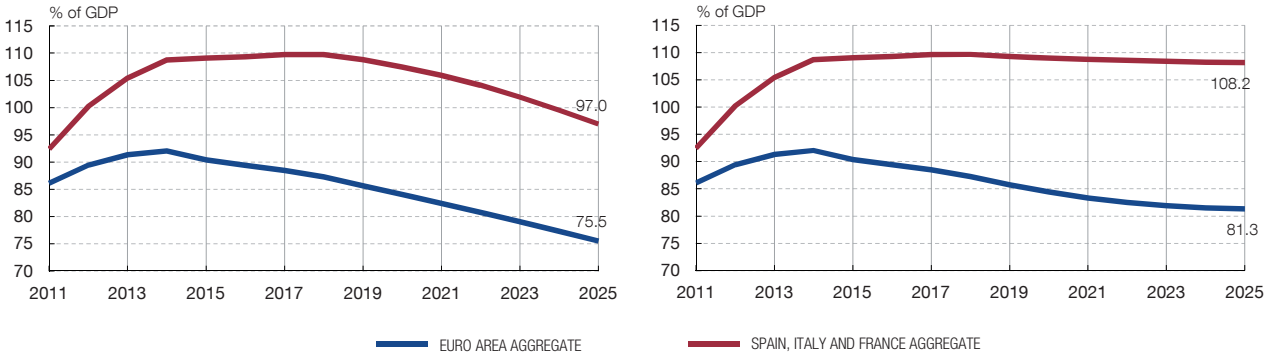
EURO AREA PUBLIC DEBT DEVELOPMENTS UNDER ALTERNATIVE SCENARIOS (a)

CHART 4.3

1 BASELINE SCENARIO

2 SCENARIO WITHOUT FISCAL POLICY CHANGES



SOURCE: Banco de España.

a Alternative simulations are presented of the paths of the public debt/GDP ratio for the euro area and the aggregate for Spain, France and Italy up to 2025, under different fiscal policy assumptions. In the left-hand panel the assumption behind the baseline scenario is that the euro area countries comply over the course of the simulation horizon with their budgetary objectives as set in the European Stability and Growth Pact. In the right-hand panel it is assumed that the fiscal policy stance holds in line with the fiscal policy observed in 2016. The simulations are conducted using data up to 2016, the medium-term macroeconomic projections of the European Commission and the price stability objectives set by the ECB. The details of the simulation tool are described in P. Hernández de Cos, D. López Rodríguez and J. J. Pérez (2017), "Los retos del desapalancamiento público", Documentos Ocasionales, Banco de Espana, forthcoming, and in O. Bouabdallah and C. Checerita (2017), *Debt sustainability analysis for euro area sovereigns: a methodological framework,* ECB Occasional Paper 185.

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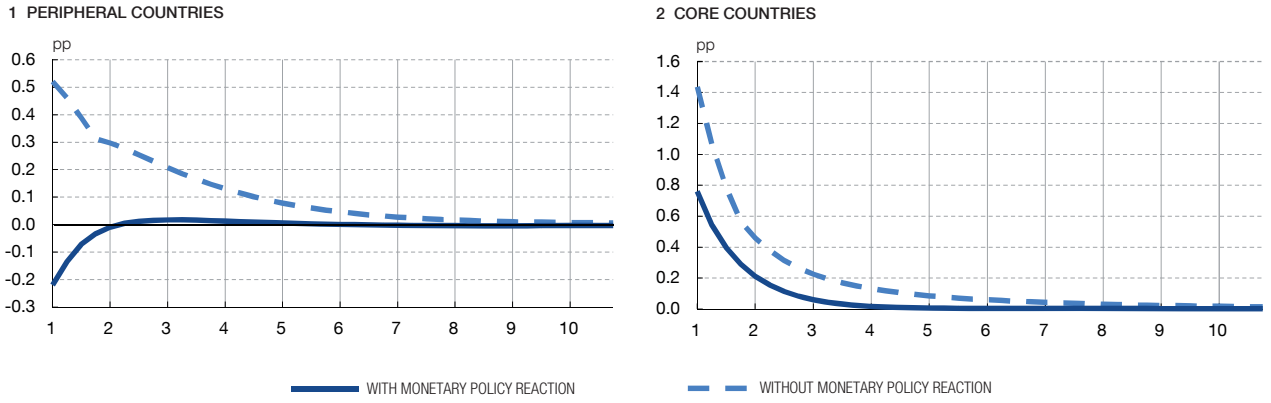
SYNERGIES BETWEEN FISCAL POLICY AND MONETARY POLICY IN THE EURO AREA (a) CHART 4.4

MARGINAL EFFECT OF A FISCAL EXPANSION IN THE CORE EURO AREA COUNTRIES ON GDP



SOURCE: Banco de España.

a Deviations from the baseline scenario. Simulations of a fiscal expansion of 1% of GDP performed with the model devised by Ó. Arce, S. Hurtado and C. Thomas (2016), "Synergies between monetary policy and national policies in a monetary union", Economic Bulletin, October, Banco de España.

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group of countries needs to reduce its high levels of private debt and lacks fiscal space, a situation similar, therefore, to that of the area's peripheral economies. In normal circumstances for monetary policy, in which it responds by adjusting its interest rates symmetrically to increases and declines in inflation, the model suggests that a fiscal expansion by the countries with leeway to do so would have a positive impact on their own economic activity and would exert upward pressure on inflation for the area as a whole. The monetary policy reaction caused by the rise in prices would cushion the impact on these countries' economic activity and would exert a negative impact on the region without fiscal space. Conversely, in a situation such as the present, in which the inflation rate is below its medium-term objective and interest rates are constrained by the existence of an effective lower bound, it does not seem likely that the monetary authority would have to apply restrictive measures in the face of a moderate increase in domestic demand. Consequently, the positive impact of the fiscal expansion would not only be higher in the set of countries undertaking it, but it would also spread to the other partners, thereby giving rise to positive spillover effects.

The estimates made using econometric models suggests that a discretionary expansion in public spending in the major euro area economies prompts, on average, a significant quantitative impact on the GDP of their neighbouring countries (see Box 4.1).[17] Looking at the components of public spending, it can be seen that increases in investment show greater spillover effects than those of current public spending[18], of a similar amount for the euro area as a whole and the countries considered. These results suggest that public investment, duly targeted on projects with the ability to enhance the economy's efficiency and growth capacity, might be the instrument around which to

17 For a broad perspective, see M.G. Attinasi, M. Lalik and I. Vetlov (2017), *Fiscal spillovers in the euro area: a model-based analysis,* Working Paper 2040, European Central Bank.

18 Defined as government consumption.

structure a coordinated budgetary stimulus policy, on the basis of its expansion in those countries with sufficient budgetary room for manoeuvre.

The countries that have no fiscal space should design a consolidation strategy more conducive to economic growth. Given that the combination of instruments on the public revenue and expenditure side influences their macroeconomic impact in the short and medium term, the countries that have to continue addressing a budgetary consolidation in the coming years should design their fiscal policies so that they take on a composition more conducive to economic growth. On the revenue side, there is room to restructure the tax basket in a way more conducive to potential growth, resting on tax arrangements that distort economic agents' behaviour less.[19] On the expenditure side, according to the detailed analyses conducted in certain economies such as Spain, Portugal and Italy[20], there appears to be headroom in these countries to increase the efficiency of public spending and to redirect its composition towards those items having a greater bearing on the accumulation of physical, technological and human capital, and, consequently, on total factor productivity and long-term economic growth.

2.2 THE PROBLEMS BEHIND THE PRACTICAL IMPLEMENTATION OF A COORDINATED FISCAL POLICY IN THE EURO AREA

In the euro area, the fiscal policy stance is the result of the aggregation of national fiscal policies. Beyond the EU budget, which is confined to and focused on agricultural policy and structural convergence measures, there are no instruments providing for a stabilising function at the aggregate level, were the conjunctural situation of the area as a whole to require this. Such stabilisation might be needed either owing to an extreme downturn in economic activity, as occurred in 2008, or to complement monetary policy measures, as would be the case at present. The lack of centralised fiscal policy instruments in the euro area restricts the possibilities of discretionary action in this field; such action must take the form of ad hoc multilateral agreements resting, moreover, on the room for manoeuvre available at the national level.

The preventive arm of the SGP is aimed at generating headroom that can be used in the face of adverse shocks. The preventive arm of the SGP is broadly applied to countries that post a deficit below 3% of GDP and its main purpose is that these countries maintain a structural budgetary balance close to zero or run a surplus in the medium term, this being known as the "medium-term objective". Fulfilment of this objective should enable countries to generate sufficient room for manoeuvre so that, in downturns, the automatic stabilisers may operate fully without compromising the sustainability of public finances in the medium and long term. However, this room for manoeuvre at the national level may not suffice for facing certain shocks. Moreover, as occurred during the last crisis, bouts of mistrust may be triggered that increase the risk premia of some countries, which detracts from the effectiveness of national stabilisation policies.[21]

The European plan for economic recovery (EPER) was an example of a coordinated response by the European countries to the international financial crisis. The EPER channelled a set of measures aimed at stimulating demand, for an estimated amount of 1.5% of EU GDP, in 2009-2010. In the absence of a significant central budget, it was agreed that 85% of this impulse would be funded by national budgets, with the rest

19 See P. Hernández de Cos and D. López Rodríguez (2014), *Tax structure and revenue-raising capacity in Spain: a comparative analysis with the EU,* Occasional Paper 1406, Banco de España.

20 See, inter alia, C. Vandierendonck (2014), *Public Spending Reviews: design, conduct, implementation,* European Economy, Economic Papers, no. 525. For the Spanish case, see OECD (2015), *Spain: from administrative reform to continuous improvement*, OECD Public Governance Reviews, Paris.

21 See P. de Grauwe (2012), "The governance of a fragile Eurozone", *Revista de Economía Institucional,* 13, pp. 33-41.

charged to the Community budget.[22] As a result, euro area governments introduced greatly varied stimulus measures which, overall, amounted to 1.1% and 0.8% of GDP in 2009 and 2010, respectively, according to EC estimates. The simulations available suggest that the EPER had a positive impact on GDP of around 0.5 pp in cumulative terms in 2009-2010.[23] Several international organisations suggested the advisability of launching a bigger fiscal stimulus when it was realised how serious the economic crisis was.[24] But the difficulties in mobilising additional resources soon became apparent, given the adverse public debt dynamics that certain European countries began to experience along with the increase in their sovereign risk premia and the difficulties in gaining access to financial markets, which left little room for manoeuvre for further measures within the framework of SGP budgetary rules.

Another more recent coordinated initiative was the Investment Plan for Europe (known as the "Juncker Plan"), set in train in April 2015 and still under way. This plan is an initiative under which the common European budget is used as collateral to mobilise private investment of the order of €500 billion from 2015 to 2020 (following the extension agreed in 2016). It also contains measures geared to identifying and lifting the regulatory obstacles to investment in the EU. Through private/public partnership collaboration, the plan aimed to mobilise investment projects with high added value potential, projects which, given their level of risk, had not been receiving financing. Despite the complexity of European governance, this plan has been widely accepted by the EU member countries.[25] Nonetheless, following two years' action, not enough information is available to evaluate its effectiveness, in particular regarding its potential capacity to encourage new investment projects, rather than funding projects that would have been undertaken in any event.[26]

More recently, in late 2016, the EC released a communication on the need for a more expansionary fiscal policy stance in the euro area in 2017.[27] According to the Commission, the current economic circumstances in the euro area are appropriate for pursuing a fiscal policy that stimulates aggregate demand, in particular given the persistently low growth and low interest rates prevailing. The reasoning for this EC proposal is that fiscal policy in the euro area has adopted a more neutral stance in recent years than that experienced during the crisis, against a background in which the public debt/GDP ratio of the euro area in its entirety is on a marginally declining trajectory (see Chart 4.5). Indeed, for the euro area as a whole, the Commission estimates that fiscal policy will be slightly expansionary in 2017-2018, showing a slight deterioration in the primary public structural balance, in line with the developments in the preceding two years, and in contrast to the substantial adjustment implemented in response to the sovereign debt crisis. Specifically, the EC considers that there would be

22 See Bouthevillain et al. (2009), op. cit.

23 See G. Coenen, R. Straub and M. Trabandt (2012), *Gauging the effects of fiscal stimulus packages in the euro area,* Board of Governors of the Federal Reserve System, International Finance Discussion Papers 1061, and T. Cwik and V. Wieland (2011), "Keynesian Government Spending Multipliers and Spillovers in the Euro Area", *Economic Policy,* 26, pp. 495-549.

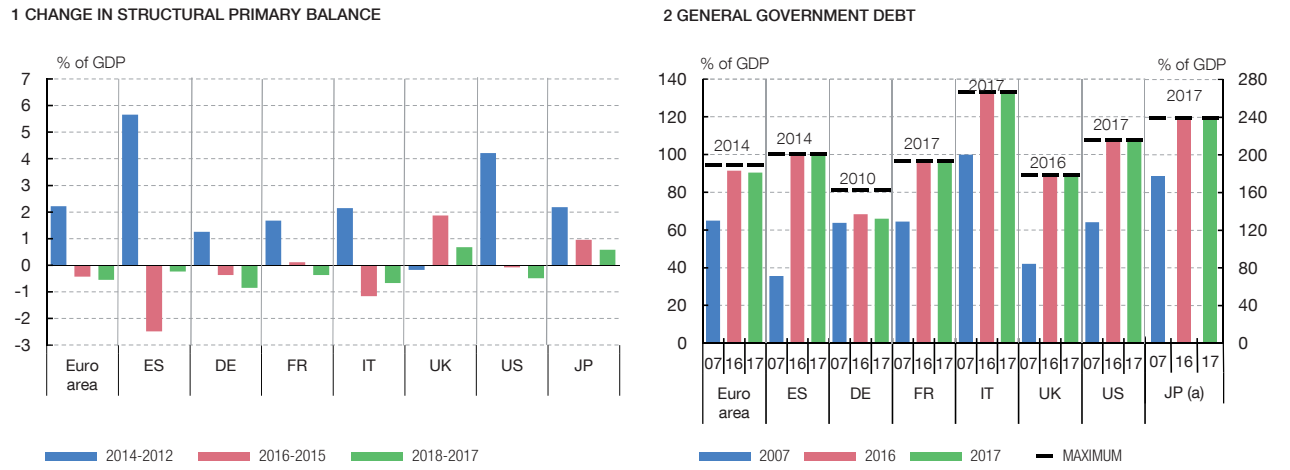
24 See, for example, C. Freedman, M. Kumhof, D. Laxton and J. Lee (2009), *The case for global fiscal stimulus,* IMF Staff Position Note SPN/09/03.

25 See E. Rubio, D. Rinaldi and T. Pellerin-Carlin (2016), "Investment in Europe: making the best of the Juncker Plan (with case studies on digital infrastructure and energy efficiency)", *Notre Europe*, Jacques Delors Institute Studies and Reports 109.

26 See the assessments made by the Bruegel think tank in May and June 2016. Specifically, G. Claeys and A. Leandro (2016), "Assessing the Juncker plan after one year", May 2016, and "The Juncker plan needs to be turned on its head", June 2016.

27 Available at: http://data.consilium.europa.eu/doc/document/ST-14630-2016-INIT/en/pdf.

FISCAL POLICY STANCE AND PUBLIC DEBT IN THE EURO AREA CHART 4.5



SOURCES: European Commission and IMF.

a Right-hand scale.

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room for a limited additional expansion, of approximately 0.5 pp of euro area GDP in 2017, and that this impulse would provide a boost to output leading to a reduction in productive capacity slack (measured by the closing of the output gap), with a likewise positive impact on inflation.[28] The EC also proposes that this impulse be pursued by those countries with fiscal space, i.e. sufficient budgetary room for manoeuvre so as not to jeopardise the sustainability of their public finances and to fulfil the SGP requirements.

The practical implementation of a euro area discretionary fiscal policy measure such as that proposed by the EC faces various institutional difficulties. Firstly, in the absence of a sufficiently strong common EU budget, an action of this type entails the need to allocate the budgetary impulse country by country. Secondly, the budgetary impulse should be compatible with fulfilment of the SGP by the countries implementing such impulse. In other words, under this criterion, only those countries complying with the SGP requirements – identifiable as those posing no risks to the sustainability of their public finances – would have budgetary headroom. In the current economic circumstances, for example, the countries subject to the corrective arm of the SGP – namely France, Spain and Portugal – continued to evidence an "excessive deficit" position which obliges them to maintain a restrictive fiscal policy stance (see Table 4.3). As regards the countries subject to the preventive arm, only Germany, the Netherlands and Luxembourg are expected to have met their medium-term objective, and thus have leeway of between 0.5 pp and 1 pp of GDP relative to that objective. In accordance with these margins, attaining a fiscal impulse such as that intended by the European Commission could only come about through highly significant budgetary easing, of around 2 pp of GDP, in the latter countries, which hampers its political approval. At its meeting in January 2017, the Council of the European Union noted the EC's recommendation, but did not translate it into specific recommendations for the member countries.[29]

28 On the estimates made by the EC using the QUEST model. See http://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/economic-research/macroeconomic-models_en.

29 See http://www.consilium.europa.eu/en/press/press-releases/2017/01/27-conclusions-annual-growth-survey/.

SITUATION OF PUBLIC FINANCES AND COMMITMENTS ACQUIRED UNDER THE STABILITY AND GROWTH PACT IN THE EURO AREA COUNTRIES (2017) TABLE 4.3

	Public debt (% of GDP) (reference: 60%)	General government balance (% of GDP) (reference: -3%)	Structural balance (% of GDP) [1]	Distance to medium-term objective [1] – [2]	Change in structural balance (% of GDP)	Fiscal sustainability indicator (S1) (a)	Commitment acquired		
							Medium-term objective (MTO) [2]	Objective for change in structural balance	
								Corrective arm	Preventive arm
Greece	178.8	-1.2	2.5	4.2	-3.0	4.5	-1.8	…	
Portugal	128.5	-1.8	-2.2	-2.5	-0.2	4.7	0.3	0.6	
Spain	99.2	-3.2	-3.4	-3.4	0.1	2.5	0.0	0.5	
France	96.4	-3.0	-2.4	-2.0	0.2	4.4	-0.4	0.9	
Belgium	105.6	-1.9	-1.6	-1.6	0.6	3.8	0.0		0.6
Germany	65.8	0.5	0.6	1.1	-0.3	-0.8	-0.5		0.0
Estonia	9.5	-0.3	-0.3	-0.3	-0.6	-4.0	0.0		0.0
Ireland	73.5	-0.5	-1.1	-0.6	0.6	2.7	-0.5		0.6
Italy	133.1	-2.2	-2.0	-2.0	-0.2	4.2	0.0		0.3
Cyprus	103.4	0.2	-0.2	-0.2	-1.1	…	0.0		-0.4
Latvia	38.5	-0.8	-1.4	-0.4	-0.7	-2.1	-1.0		-0.2
Lithuania	42.4	-0.4	-0.9	0.1	-0.7	0.5	-1.0		-0.2
Luxembourg	22.0	0.2	0.4	0.9	-1.6	-4.4	-0.5		0.0
Malta	55.8	0.5	0.4	0.4	0.0	-0.2	0.0		0.6
Netherlands	59.8	0.5	0.2	0.7	-0.4	0.6	-0.5		0.0
Austria	82.8	-1.3	-1.1	-0.6	0.0	1.3	-0.5		-0.1
Slovenia	77.8	-1.4	-1.8	-2.1	-0.2	3.0	0.3		0.6
Slovakia	51.5	-1.3	-1.4	-0.9	0.1	-0.7	-0.5		0.5
Finland	65.5	-2.2	-1.3	-0.8	-0.5	2.6	-0.5		0.6

SOURCES: Banco de España and European Commission.

a The S1 indicator devised by the EC measures the change in the structural primary balance that should be recorded between 2017 and 2031 in order to attain a debt ratio of 60% in 2031. In addition to the value of the indicator, the column includes a colour code representing the overall assessment by the EC of each country's sustainability risks, namely: red, high risk; yellow, medium risk; green, low risk.

3 The challenges of the euro area budgetary framework

Moves are needed to improve the fiscal policy governance framework and to create supranational insurance mechanisms. The constraints of the current budgetary framework, highlighted in the previous section, underscore the need to move towards the creation of a common cyclical insurance mechanism that will contribute to compensating for the absence of centralised fiscal capacity within the euro area. At the same time, headway must continue to be made in simplifying the fiscal rules framework and making it more effective.

3.1 TOWARDS THE CREATION OF MUTUAL INSURANCE MECHANISMS

The introduction of supranational mechanisms might increase the scope and effectiveness of fiscal policy within the euro area. In particular, these mechanisms might increase the capacity of budgetary policy to automatically absorb adverse (symmetrical) shocks at the aggregate level or the idiosyncratic (asymmetrical) shocks of certain countries, with the dual aim of softening the effects on individual countries and of safeguarding stability in the euro area as a whole in extreme cases. The risk-sharing or mutual insurance mechanisms help soften the decline in output in a specific State or region in the face of an adverse shock, so that this shock ultimately affects residents' income and consumption in that State to the least extent possible.

Risk diversification in monetary unions may be achieved through a centralised budgetary capacity and also through private channels. On one hand, the impact of an

adverse shock in a member country of a monetary union may be softened if the country's resident agents obtain income (whether financial or labour) from other countries (regions) not affected by the shock (income channel). On the other, the households and firms in the economy concerned may ease their consumption by resorting to their saving or to the credit market (credit channel). Logically, the greater cross-regional financial integration or labour mobility are, the greater the strength of these two channels will be. Finally, the effects of the shock may be questioned through fiscal transfers drawn from the central or federal budget, as in the case of the United States (budgetary channel).

Currently, however, the risk-sharing channels in the euro area are limited, not only in respect of the public budget but also as regards private channels. Chart 4.6 offers estimates showing that the strength of the risk-sharing mechanisms in place for euro area countries is limited, compared with two fuller monetary unions such as the United States and Canada (which are federal States).[30] With regard to the income channel, the degree of insurance derived therefrom is comparatively low in the European case and, although it moved on a rising trend in the pre-crisis years as a result of the increase in financial integration, it subsequently fell, remaining some distance off the levels discernible in the United States. The justification for this may be due to the greater national bias still prevailing in the euro area relative to the United States and Canada[31], and to the greater concentration of cross-border investment (within the euro area itself) in a small number of Member States in the European case. The budgetary channel is practically non-existent in the euro area, while in the United States it is estimated that it helps soften between 10% and 20% of adverse shocks (see panel 4 of Chart 4.6), with this proportion rising to over 20% in the case of Canada.[32] The credit channel is thus the sole means for cushioning shocks across the euro area countries. However, the proportion of risk shared through this channel is also very low in relation to what is observed in other countries. That means that, on average, between 40% and 60% of an adverse shock a euro area country undergoes translates into a decline in that country's consumption, depending on the period in question, compared with the 20%-30% observed in the United States.

Moreover, the strength of private channels declined during the crisis, making it advisable that progress be made in the integration of euro area capital markets. As can be seen in panel 2 of Chart 4.6, the strength of the two private channels considered declined during the crisis. Among other factors, that might reflect financial fragmentation processes stemming from the loss of investor confidence in some of the area's countries and in their banking systems, which ultimately prompted a renationalisation of financial flows. In this connection, the development of a full Banking Union and the Capital Markets Union initiative should contribute decisively to reinforcing private risk-sharing channels, complementing the pan-European public mutual insurance mechanisms.[33]

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30 See E. Gordo (2017), *Mecanismos de risk-sharing en la UEM,* Documentos Ocasionales, Banco de España, forthcoming, which makes estimates for both the euro area and the United States following the methodology proposed by P. Asdrubali, B.E. Sorensen and O. Yosha (1996), "Channels of interstate risk sharing: United States 1963-1990", *The Quarterly Journal of Economics,* no. 111, pp. 1081-1110. The results presented are robust to the different estimation procedures used, and the conclusions are similar to those obtained recently in other papers, such as P. Poncela, F. Pericoli, A. Manca and M. Nardo (2016), "Risk sharing in Europe", *Joint Research Centre,* European Commission.

31 See D. Valiante, A. Wambach, E. L. von Thadden, S. Steffen and P. Hartmann (2016), *Europe's untapped capital market: rethinking integration after the great financial crisis*, Centre for European Economic Research, Policy Report.

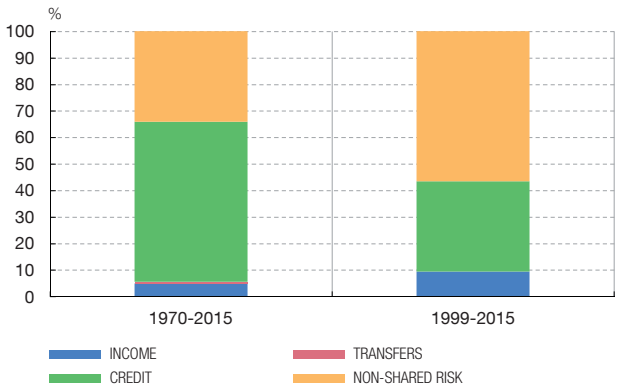
32 According to the estimates by F. Balli, S.A. Basher and J.L. Rosmi (2012), "Channels of risk-sharing among Canadian provinces: 1961-2006", *Empirical Economics,* pp.1-25.

33 E. Fahri and I. Werning (2012), *Fiscal Unions,* NBER Working Paper no. 18280, show that even if capital markets were fully integrated, a system based solely on private mechanisms would not be optimal, since agents do not internalise the advantages of macroeconomic stability. A fiscal insurance mechanism would lead to a more efficient system.

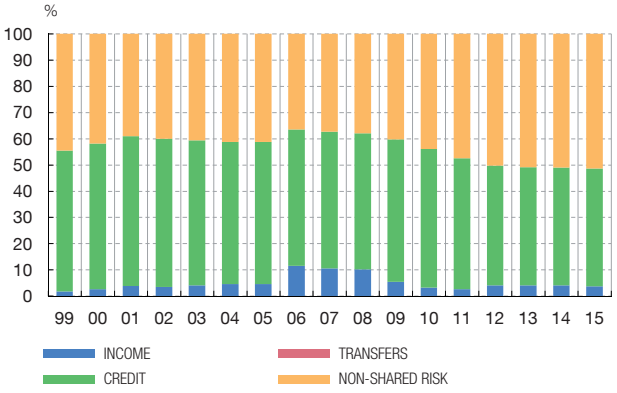
RISK-SHARING MECHANISMS (a)

CHART 4.6

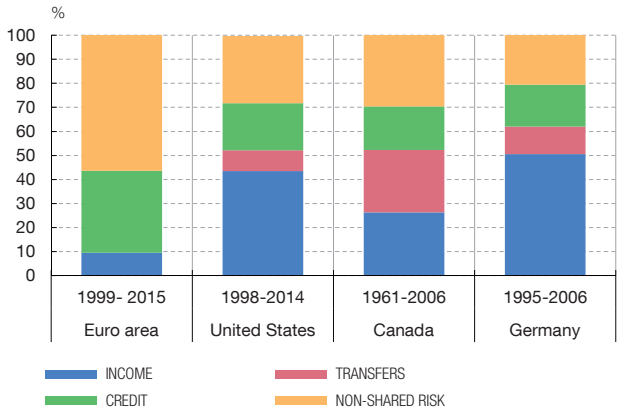
1 STRENGTH OF RISK-SHARING CHANNELS IN THE EURO AREA



2 CHANGES IN THE STRENGTH OF RISK-SHARING CHANNELS IN THE EURO AREA



3 STRENGTH OF RISK-SHARING CHANNELS (a)



4 STRENGTH OF FISCAL RISK-SHARING CHANNELS. UNITED STATES AND CANADA (b)

%

	United States	Canada
Von Hagen (1992)	10	—
Goodhart and Smith (1993)	11	17
Bayoumi and Mason (1995)	17	31
Melitz and Zummer (2002)	20	15
Obstfeld and Peri (1998)	10	13
Asdrubali, Sørensen and Yosha (1996)	13	—
Asdrubali and Kim (2004)	15	—
Poghosyan, Senhadji and Cotarelli (2016)	11	4
Gordo (2017)		
Methodology of Asdrubali *et al.* (1996)	9	—
Methodology of Poghosyan *et al.* (201	17	—

SOURCE: Banco de España.

a Estimated following the methodology of Asdrubali et al. (1996), approximating the fact that the percentage of shocks recorded in an economy's GDP passes through to the income and to the consumption decisions of the residents in that economy. The strength of each channel is estimated using the following equations:

$$1\ \Delta GDP_t - \Delta GNP_t = V_{1t} + \beta_1 \Delta GDP_t + \varepsilon_{1t}$$
$$2\ \Delta GNP_t - \Delta NNP_t = V_{2t} + \beta_2 \Delta GDP_t + \varepsilon_{2t}$$
$$3\ \Delta NNP_t - \Delta NNI_t = V_{3t} + \beta_3 \Delta GDP_t + \varepsilon_{3t}$$
$$4\ \Delta NNI_t - \Delta C_t = V_{4t} + \beta_4 \Delta GDP_t + \varepsilon_{4t}$$
$$5\ \Delta C_t = V_{5t} + \beta_5 \Delta GDP_t + \varepsilon_{5t},$$

where GDP is gross domestic product, GNP gross national product, NNP net national product, NNI net national income and C total consumption. All the variables are expressed in logarithms and in deviations from the euro area or, where appropriate, the United States average. The coefficients β_1, β_2, β_3, β_4 approximate shared risk through capital markets, depreciation (added in the chart with the percentage of non-shared risk), fiscal transfers and the credit markets, respectively. The coefficient β_5 measures the percentage of non-shared risk.

b The table shows the strength of the risk-sharing budgetary channel (see footnote a). The articles cited in the panel are the following: P. Asdrubali, B.E. Sorensen and O. Yosha (1996, "Channels of Interstate Risk Sharing: United States 1963-1990", *Quarterly Journal of Economics,* 111, pp. 1081-1110; P. Asdrubali and S. Kim (2004), "Dynamic Risk Sharing in the United States and Europe", *Journal of Monetary Economics,* 51, pp. 809-836; T. Bayoumi and P. Masson (1995), "Fiscal Flows in the United States and Canada: Lessons from Monetary Union in Europe", *European Economic Review,* 39, pp. 253-274; C. Goodhart and S. Smith (1993), "Stabilization", in *The Economics of Community Public Finance,* European Economy Reports and Studies, 5, pp. 417, 455, Brussels, European Commission; J. Melitz and F. Zumer (2002), "Regional Redistribution and Stabilization by the Centre in Canada, France, the UK and the US: a Reassessment and New Tests", *Journal of Public Economics,* 86, pp. 263-284; M. Obstfeld and G. Peri (1998), "Regional Non-Adjustment and Fiscal Policy", Economic Policy, 26, pp. 205-269; J. von Hagen (1992), "Fiscal Arrangements in a Monetary Union: Evidence from the US", in *Fiscal Policy, Taxes, and the Financial System in an Increasingly Integrated Europe,* ed. Don Fair and Christian de Boisseux (Kluwer, London); T. Poghosyan, A. Senhadji and C. Cottarelli (2016), *The Role of Fiscal Transfers in Smoothing Regional Shocks: Evidence from Existing Federations,* IMF Working Paper No. 16/141.

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Several alternatives exist for constructing inter-State public insurance mechanisms within a monetary union, requiring very different degrees of political ambition.[34] On one hand, maximum proposals have been formulated, involving the creation of an economic government for the euro area, with its own extensive budget, and responsibility for a European debt agency entrusted with issuing joint debt instruments. On the other, the introduction of insurance tools (such as unemployment insurance) in the face of cyclical shocks has been considered, in the form of contingency funds (along the lines of the US "rainy day funds"), or through shared-responsibility debt issues (Eurobonds[35]). These latter arrangements, which may be designed without entailing major changes in the institutional structure of the euro area or permanent income transfers between member countries, would help alleviate the national effects of transitory shocks.

One alternative, whose implementation might be feasible, would be the creation of a stabilisation facility or fund that could be automatically, readily and transparently activated when specific conditions were met. The literature highlights some of the features a mechanism of this nature should have. In particular, in keeping with the empirical evidence on the effectiveness of fiscal stimuli, any stabilising action proves all the more effective the more timely, temporary and targeted it is, as discussed in section 2.1. And automatic instruments display these characteristics better than discretionary ones do. Furthermore, this tool should be designed in such a way as to minimise moral hazard problems, so as to retain the incentives for implementing disciplined economic policies. Accordingly, a system should be sought which is neutral in terms of its budgetary implications over an extensive time horizon, i.e. which does not entail permanent inter-State transfers, unlike the current European budget, where there are net contributors and recipients. However, this does not mean that the mechanism should not perform intertemporal as well as spatial stabilisation functions, in the sense of funds being built up in cyclical upturns to be used in adverse circumstances.

In particular, the literature has proposed mechanisms that take cyclical slack in the economy as the criterion to make contributions and refunds of funds of this type. In this respect, the left-hand panel of Table 4.4 illustrates what would have happened had some of these mechanisms been in place since the creation of the euro area. Specifically, it is calculated under different assumptions what the funds contributed and received by the different euro area countries in their current composition would have been in cumulative terms over the 1999-2015 period. In the first of the schemes simulated (see Scheme 1, in Table 4.4), the countries contribute to a common fund with a fixed contribution, of 1% of their GNP (on a similar scale to that of the current European budget), and receive a transfer if their cyclical position, proxied by the output gap, is negative. This transfer will depend on the size of the country, on the magnitude of the output gap and on the amount of funds accumulated. In the rest of the schemes simulated, both the contributions and transfers received by the countries depend on their output gap, meaning that these transfers are calculated with the aim of reducing the size of that gap by 25%.[36]

Such a mechanism, with a relatively moderate size, would enable the euro area to achieve stabilising power similar to that of the federal budget transfers in the United States. Indeed, as earlier mentioned, in this case the budgetary channel enables 10%-20%

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34 See the so-called "Five Presidents' Report", *Completing Europe's Economic and Monetary Union*, published in 2015 and available at http://www.consilium.europa.eu/es/european-council/president/pdf/5-presidents-report-es_pdf/.

35 In this connection see, for example, S. Claessens, A. Mody and S. Vallee (2012), "Making sense of Eurobond proposals", available at http://voxeu.org/articles/making-sense-eurobond-proposals.

36 In no circumstances is the fund allowed to show a negative balance: in that situation the transfers received by countries with a negative output gap would be adjusted downwards proportionately.

of the adverse shocks the country receives to be absorbed, while Schemes 2 and 3 of Table 4.4 (left-hand panel) simulated for the euro area evidence a stabilisation capacity of 15% and 18%, respectively, with budgetary contributions which, on average, would have stood below 0.5 pp of GDP in the time period considered. These two outlines maintain a balance between the aggregate amount of contributions made by all the countries and that of the refunds, as well as an approximate proportion between countries' individual contributions and refunds, so that there are no permanent transfers between countries over time. Scheme 1 is more ambitious as regards the contributions countries must make, although it does not maintain symmetry between contributions and refunds, although the stabilisation capacity of this scheme would be greater (close to 40%).

Some papers in the literature have proposed the creation of a common unemployment insurance mechanism. As opposed to the funds that take the output gap as a reference variable, this type of schema has the advantage of being based on the unemployment level, which is a directly observable variable. The main challenge posed in the context of the euro area is to prevent such mechanisms from giving rise to cross-country redistributive effects, given the heterogeneity in place in labour market institutions and in starting unemployment levels. Accordingly, it is proposed that these mechanisms be designed as a complement to national unemployment insurance that is activated in adverse circumstances, as is the case in the United States, where the unemployment insurance system is the competence of the States, although central government supplements them through loans or direct transfers when there are notable increases in unemployment (see Box 4.2). Arrangements have also been proposed that ensure budgetary neutrality across countries through variable contributions that are adjusted subsequently. Table 4.4 (right-hand panel) has simulated how two funds with these characteristics would have functioned during the period since the start-up of the euro area. The capacity of these types of mechanisms to stabilise aggregate income in the economy is less than that of the previously discussed funds. However, as regards their potential impact on economic activity, it should be stressed that, in this case, transfers would be directly received by agents who, in principle, have a high propensity to spend, as is the case of the unemployed or individuals subject to credit or liquidity constraints, meaning that their economic impact might prove significant.

The multilateral insurance mechanisms discussed nevertheless share some common problems. The mechanisms whose workings are based on the output gap pose difficulties derived from the real-time estimates of this variable, which is not directly observable and which is subject to substantial revisions.[37] These difficulties may lead to fund management problems, in particular regarding the calculation of contributions and of the amounts to be received. In this respect, some lessons may be drawn from the experience with the State rainy day funds in the United States.[38] Firstly, fund withdrawal regulations should be very strict and precisely defined in the applicable legislation. Secondly, the question as to who should regulate and control the use of the funds is also relevant. In the case of the EU, should an option of this type be considered, clarification will be needed as to the fund's legal entity and the role of supranational institutions, such as the EC, in authorising fund withdrawal requests and the rules governing specific contributions. The implementation of a mechanism based on the level of unemployment is more complex, against the background

37 See P. Hernández de Cos, A. Lacuesta and E. Moral-Benito (2016), *An exploration of real-time revisions of output gap estimates across European countries,* Occasional Paper 1605, Banco de España.

38 See P. Hernández de Cos and J.J. Pérez (2015), "Reglas fiscales, disciplina presupuestaria y corresponsabilidad fiscal", *Papeles de Economía Española*, no. 143, pp. 174-184.

CHARACTERISTICS OF CERTAIN CYCLICAL INSURANCE AND COMMON UNEMPLOYMENT INSURANCE SCHEMES IN THE 1999-2015 PERIOD (% OF GNP) TABLE 4.4

	Cyclical insurance schemes (based on the output gap) (a)						Common unemployment subsidy schemata (b)			
	Scheme 1		Scheme 2		Scheme 3		Scheme 1		Scheme 2	
	Contribution	Receipt	Contribution	Receipt	Contribution	Receipt	Contribution based on total compensation of employees (c)	Receipt: based on short-term unemployment rate	Contribution based on total compensation of employees (d)	Receipt: based on short-term unemployment rate
Euro area	1.0	1.0	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5
Belgium	1.0	0.3	0.2	0.1	0.2	0.0	0.5	0.4	0.4	0.4
Germany	1.0	0.7	0.1	0.2	0.1	0.2	0.5	0.3	0.4	0.3
Estonia	0.9	1.3	0.8	0.3	0.8	0.3	0.4	0.5	0.5	0.5
Ireland	0.9	1.0	0.3	0.3	0.4	0.3	0.4	0.4	0.3	0.4
Greece	1.0	2.5	0.3	0.5	0.3	0.6	0.4	0.6	0.5	0.6
Spain	1.0	2.1	0.3	0.4	0.4	0.5	0.5	1.1	1.0	1.1
France	1.0	0.5	0.3	0.1	0.4	0.0	0.5	0.6	0.6	0.6
Italy	1.0	1.1	0.2	0.2	0.1	0.3	0.5	0.4	0.4	0.4
Cyprus	1.0	0.9	0.4	0.1	0.3	0.2	0.4	0.6	0.5	0.6
Letonia	0.9	2.1	0.5	0.6	0.5	0.5	0.4	0.6	0.6	0.6
Lithuania	0.9	2.3	0.4	0.6	0.5	0.5	0.4	0.6	0.6	0.6
Luxembourg	1.0	1.6	0.3	0.3	0.3	0.4	0.3	0.2	0.1	0.2
Malta	0.9	0.5	0.1	0.1	0.2	0.1	0.4	0.3	0.3	0.3
Netherlands	1.0	1.2	0.1	0.3	0.2	0.2	0.6	0.4	0.4	0.4
Austria	1.0	0.5	0.1	0.1	0.2	0.1	0.4	0.3	0.3	0.3
Portugal	1.0	1.3	0.2	0.3	0.2	0.3	0.5	0.5	0.4	0.5
Slovenia	1.0	1.0	0.3	0.2	0.4	0.2	0.5	0.4	0.3	0.4
Slovakia	0.9	1.0	0.3	0.3	0.4	0.2	0.4	0.5	0.5	0.5
Finland	1.0	0.9	0.2	0.2	0.3	0.2	0.4	0.6	0.6	0.6
Memorandum item:										
Stabilisation capacity (e)	0.37		0.15		0.18		0.08		0.02	

SOURCE: Banco de España. For the methodological details of the calculations shown, see Gordo (2017).

a In Scheme 1, the countries make a fixed contribution of 1% of GNP and receive a transfer when their output gap is negative.The amount of the benefit is determined on the basis of the country's size, on the output gap and on the size of the fund. In Scheme 2 [see M. Carnot, P.Evans, S. Fatica and G. Mourre (2015), "Income insurance: a theoretical exercise with empirical application for the euro area", European Economy, 546, European Commission], the countries make contributions to the fund if they have a positive output gap, while they receive a transfer if the gap is negative. The amount of the transfer and of the contribution of each country is 25% of the size of the output gap. Scheme 3 is similar, except that in this case the deviations are calculated in relative terms, i.e. the countries with an output gap exceeding the euro area average contribute to the fund, and those countries with an output gap lower than the euro area average receive transfers. The amount of the contribution or transfer is 25% of the difference between both output gaps.
b In both cases, the transfers each country receives are determined on the basis of its short-term unemployment level and the average wage in the economy, with a correction factor of 0.8, under the assumption that the unemployed have wages below the average. A coverage rate for the system of 0.4% and a replacement rate (level of the benefit relative to the previous wage) of 0.5% are also assumed.
c The contribution is the same for all countries and changes over time to bring the outstanding balance of the fund into equilibrium over five years on average.
d The contribution differs for the countries, with the aim of bringing the country's outstanding balance in the fund into equilibrium over five years on average.
e See the footnotes to Chart 4.6. Stabilisation capacity refers to the percentage of the adverse shock which is smoothed with each scheme, where 1 represents the maximum possible (100%).

of the heterogeneity of labour market legislation, since persistent net contributions of the same sign for specific countries must be avoided, while it would also be advisable to include factors of conditionality tied to improvements in the attendant legislation.[39]

The foregoing mechanisms may not be sufficient to withstand crises on a large-scale or with ramifications in the financial sector, as was the case with the crisis that broke in 2008. From this standpoint, the euro area has equipped itself with a

39 See T. Boeri and J.F. Jimeno (2016), "Learning from the Great Divergence in Unemployment in Europe during the Crisis", *Labour Economics*, 41, pp. 32-46.

crisis-management mechanism, the European Stability Mechanism (ESM), which also increases the euro area's capacity to withstand very serious asymmetrical shocks. The ESM is a permanent financial crisis-resolution instrument for the euro area countries that has been fully operational since July 2013, and whose key mission is to channel financial assistance to the countries in the area that require it, subject to conditionality. Further, the financial supervision framework in the European Union has been reformed, so that the actions of the financial sector should not result in systemic risks. Finally, to curtail the perverse dynamics of the feedback loop between banking and sovereign risks and the systemic consequences of institutions with strong cross-border links, headway has been made in plans for a banking union. At present, this union already has a single supervisory mechanism and a management and resolution mechanism for institutions in crisis, and it has also to avail itself of a common deposit guarantee scheme.

3.2 THE FISCAL RULES FRAMEWORK: SIMPLIFICATION AND TRANSPARENCY

The fiscal rules framework proved insufficient to generate room for manoeuvre on a sufficient scale in the pre-crisis period. The framework prevailing at that time led, given the absence of additional instruments, to the application of procyclical fiscal policies during the most recessionary phases of the crisis (see Chart 4.7). Although these policies were largely necessary to ensure the sustainability of public finances in the euro area and the very credibility of the common European project, they may have contributed to amplifying the effects of the recession. Compounding design problems were the shortcomings of the implementation of rules, derived from an excessively discretionary application.

In recent years there has been a far-reaching review of budgetary governance, whose changes include most notably the introduction of a spending rule in the preventive arm of the SGP and the specific definition of the public debt criterion.[40] The reinforced weight accorded to the monitoring of public spending is warranted by the fact that much of the slippage in the budget outturn of most countries is concentrated in this variable.[41] Further, an element of greater precision has been introduced into the criterion for correcting the levels of public debt when these deviate from the medium-term reference (60% of GDP), consisting of setting a gradual convergence path towards this reference (in particular, through an annual reduction of one-twentieth of the distance remaining). These new rules are added to the requirement that a structural balance close to zero in the medium term be maintained, this being a core element of the oversight procedure, and to the traditional reference criteria of maintaining a deficit below 3% of GDP and public debt of less than 60% of GDP. In addition to the rules described, recent SGP reforms have included a set of highly detailed procedures to determine whether a country is compliant, and whether the flexibility criteria envisaged are applicable to such country.

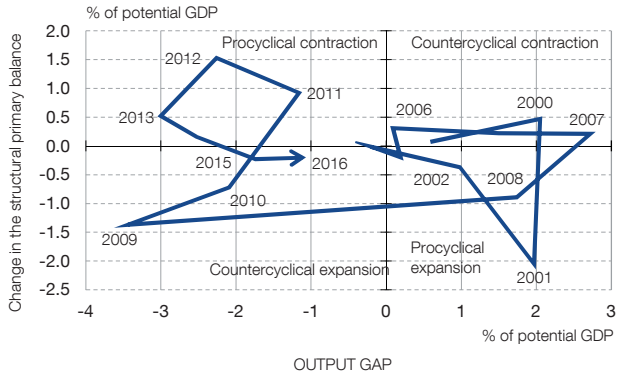
There is broad consensus on the need to simplify the current fiscal rules framework. The adopted strategy of incremental reform has resulted in a framework of rules and procedures which in practice is very complex and which hampers transparency, automaticity and objectivity in the application of the rules and, therefore, their credibility. Indeed, the studies that have analysed this framework relative to that in place in federal

40 See P. García-Perea and E. Gordo (2016), "Los mecanismos de supervisión presupuestaria en la UEM", *Boletín Económico,* March, Banco de España.

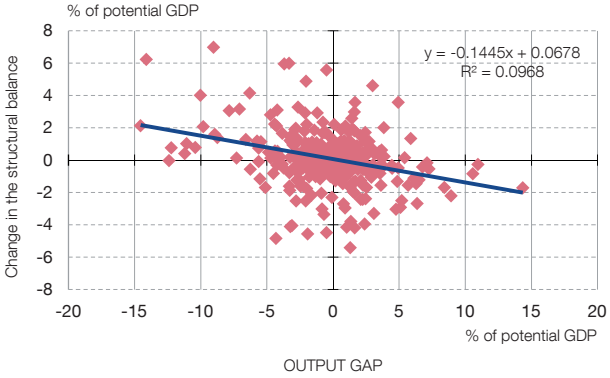
41 See S. Hauptemeier, J. Sánchez Fuentes and L. Schuknecht (2011), "Towards expenditure rules and fiscal sanity in the euro area", *Journal of Policy Modelling,* 33, pp. 597-617.

FISCAL POLICY IN THE EURO AREA AND THE BUSINESS CYCLE CHART 4.7

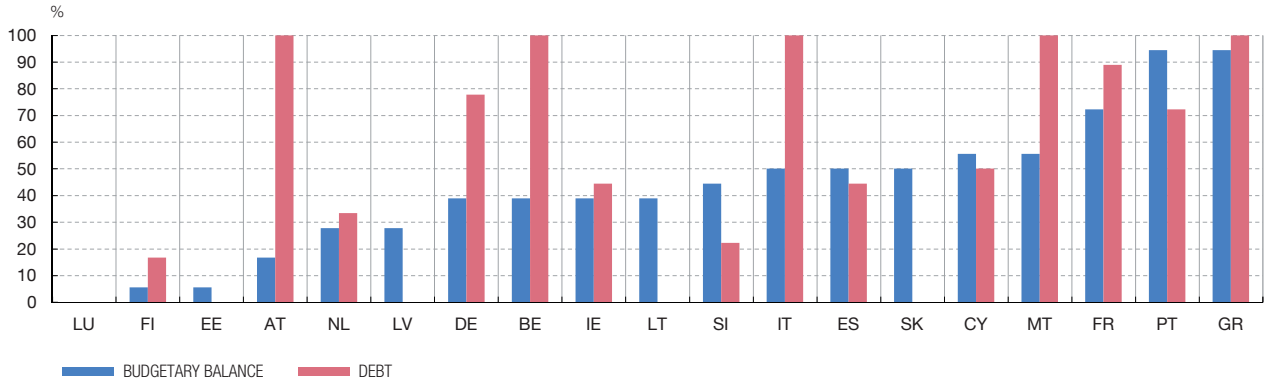
1 FISCAL POSITION AND OUTPUT GAP OF THE EURO AREA



2 FISCAL POSITION AND OUTPUT GAP OF THE EURO AREA



3 PERCENTAGE OF FAILURES TO FULFIL THE BUDGET DEFICIT AND PUBLIC DEBT CRITERIA (a)



SOURCE: AMECO.

a Percentage of years between 1999 and 2016 in which the budget deficit was higher than 3% of GDP and the debt ratio was higher than 60% of GDP.

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States show how the European fiscal framework includes a much higher number of fundamental rules.[42]

There have recently been proposals from various quarters for a system with a single anchor (public debt) and an operational rule (the expenditure rule).[43] The habitual design of this type of rule establishes that the growth of public spending, once specific items such as those under investment or those relating to unemployment are fully or partly excluded, cannot exceed a reference ceiling, calculated on the basis of the economy's potential or medium-term growth.[44] Furthermore, these rules may include a correction

42 For example, L. Euraud and R. Gómez (2014), "Constraints on subnational fiscal policy", in C. Cotarelli and M. Guerguil (eds.), *Designing a European Fiscal Union: Lessons from the Experience of Fiscal Federations,* Routledge, London, show that, in general, federal States have two fiscal rules, while in the European framework, according to these authors, there are six [deficit level, debt ratio, medium-term objective (MTO), path of adjustment towards the MTO, debt reduction requirement and expenditure rule].

43 See, inter alia, L. Odor (2014), *The good, the bad and the ugly: lessons from the first phase of implementation of the new European fiscal framework,* Slovak Council for Budget Responsibility.

44 See P. Hernández de Cos (2011), "The reform of the fiscal framework in Spain: constitutional limits and the new public spending growth rule", *Economic Bulletin*, September, Banco de España, and G. Claeys, Z. Darvas and A. Leandro (2016), *A proposal to revive the European fiscal framework,* Bruegel Policy Contribution, no. 3.

CYCLICALLY ADJUSTED PRIMARY PUBLIC SPENDING
Synthetic analysis methodology

CHART 4.8

SOURCE: C. Fernández, P. García Perea and E. Gordo (2017), *Do expenditure rules boost fiscal consolidation?* Occasional Paper, Banco de España, forthcoming.

a The analysis or synthetic control method has been developed in the area of the assessment of policies that affect aggregate units – cities, regions and countries – and is based on the comparison of the trend of the selected variables in the unit affected by public intervention (in this case, the implementation of a spending rule) with a synthetic unit, which is constructed on the basis of a control group of units which were not affected by the intervention in question and which for the period prior to the intervention reasonably reproduces the behaviour of the selected variables of the unit affected by the intervention (in this case, cyclically adjusted primary public spending). In this case, the synthetic indicator for each of the countries addressed (the Netherlands, Denmark, France and Sweden) has been constructed taking into consideration in the control group the countries which in 1992 signed the Maastricht Treaty, but which did not introduce the spending rule in the 1990s (Belgium, Ireland, Spain, Austria, Germany, Greece, Italy, Portugal and United Kingdom). The weights the different units receive within the synthetic indicator are obtained by minimising – during the period prior to the intervention (1979-1991) – the distance between the country concerned and the synthetic indicator in the target variable, and the determinants that are considered in the analysis.

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factor which imposes a more restrictive limit on spending growth for countries with a debt ratio higher than the reference value, or further limits for specific budgetary items. Their main advantage is that they contribute to curbing the procyclical bias of expansionary phases by preventing extraordinary income from being earmarked for increasing public spending. In this respect, the empirical literature suggests that fiscal frameworks that include spending rules usually show better results in terms of long-term sustainability of public finances, while bringing about less volatility in economic activity.[45]

Nonetheless, an expenditure rule might not per se suffice to ensure significant improvements in the functioning of the European fiscal oversight framework. Chart 4.8 presents evidence based on the "synthetic control" methodology[46] to assess the

45 See T. Cordes, M.T. Kinda, M.P. Muthoora and A. Weber (2015), *Expenditure rules: effective tools for sound fiscal policy?,* International Monetary Fund, Working Paper no. 15/29.

46 See the explanation of this method provided in Chart 4.8.

impact of the introduction of a spending rule on public spending in specific countries. The estimate is made with data for the EU countries as a whole and the analysis focuses on the behaviour of public spending following the signing of the Maastricht treaty in 1992, when a group of countries (the Netherlands, Sweden, Denmark, France and Finland) decided to introduce a spending rule, to smooth their fiscal consolidation processes and thereby meet the convergence criteria. The results help identify how in only two of these countries — the Netherlands and Sweden — did the adoption of the "spending rule" appear to contribute to maintaining a permanent adjustment of this variable, in respect of the performance of the control or synthetic group. By contrast, in France and in Denmark the introduction of the spending rule did not entail a more favourable performance of this variable in respect of the control group, either because the coverage of the expenditure items affected by the rule was limited, or because there was less political commitment to implement it.

The specialist literature reveals the advisability of strengthening the fiscal rules with additional elements that ensure their fulfilment. In this respect, the introduction in recent years of independent fiscal councils, at both the national and European levels, including the reinforcement of the EC's powers in the oversight of the Member States, helps strengthen the institutional framework. The evidence available indicates that the national authorities, insofar as they can provide for better access to and knowledge of the data, the budgetary processes and national legislation, are usually less subject to the biases that are habitually detected in analyses, provided that both their formal and operational independence is ensured.[47] Box 4.3 reviews some of the arguments recently aired in the academic literature with a view to ensuring greater effectiveness in oversight tasks and control over the design and use of specific fiscal instruments

47 See E. Gordo, P. Hernández de Cos and J.J. Pérez (2015), "Instituciones fiscales independientes en España y en la UEM", *Boletín Económico*, February, Banco de España; J. Von Haguen (2010), "Sticking to fiscal plans: the role of institutions", *Public Choice*, 144, pp. 487-503, and R. Merola and J.J. Pérez (2013), "Fiscal forecast errors: governments versus independent agencies?", European Journal of Political Economy, 23, pp. 285-299.

The sign and size of the spillover effects of domestic fiscal policy depends, among other factors, on the impact this should have on the growth of the country applying it, its degree of openness and its size, the capacity to substitute national goods for foreign ones, and the cyclical position of each economy and the reaction of the other economic policies available, in particular monetary policy. The theoretical models suggest that the impact of spillover effects will be low, except in periods in which monetary policy is constrained.[1] The empirical evidence, for its part, finds positive cross-border effects.[2]

The analysis in this box[3] uses a recently created quarterly database, covering the period 1980-2016, with detailed information on general government variables that is comparable for the four biggest euro area economies. The aim is to analyse the macroeconomic impact that an expansion in public spending (defined as the sum of government consumption and public investment) in a country may have on the economic activity of the other countries. In this connection, an econometric model is estimated that relates the GDP of the country receiving the impact to the exogenous change in public spending originated in each of the other countries considered, taking into account the economic situation of the recipient country.[4] This detailed information on

1 See O. Blanchard, C. J. Erceg and J. Lindé, (2015), *Jump-starting the euro area recovery: would a rise in core fiscal spending help the periphery?,* NBER WP 21426; Ó. Arce, S. Hurtado and C. Thomas, "Policy Spillovers and Synergies in a Monetary Union", *International Journal of Central Banking*, vol. 12, no.3, pp. 219-277; J. in't Veld (2013), *Fiscal consolidations and spillovers in the Euro area periphery and core*, European economy, economic papers, no. 506.

2 See A.J. Auerbach and Y. Gorodnichenko (2013), "Output spillovers from fiscal policy", *American Economic Review*, 103 (3), pp. 141-146.

3 Based on M. Alloa, P. Burriel and J. J. Pérez (2017), *Coordinated Fiscal Policies in the Euro Area: Revisiting the Size of Spillovers,* Working Paper, Banco de España, forthcoming.

4 The equations are estimated using the local projections method of Ó. Jordà (2005), "Estimation and inference of impulse responses by local projections", *American Economic Review*, 95, pp. 161-182.

SPILLOVER EFFECTS OF PUBLIC SPENDING (a)

Table 1
BY COUNTRY

	On GDP						On exports					
	By origin			By destination			By origin			By destination		
	Impact	1 year	2 years	Impact	1 year	2 years	Impact	1 year	2 years	Impact	1 year	2 years
Germany	0.0	0.2	0.5	0.0	0.7	1.8	0.0	0.2	0.5	0.1	0.9	2.4
France	0.2	-0.1	1.2	0.0	0.3	0.7	0.5	0.7	3.4	0.0	0.3	0.6
Italy	-0.1	0.4	0.9	-0.1	0.1	0.2	0.1	0.6	1.1	0.0	0.1	0.1
Spain	0.1	0.8	1.6	0.1	0.2	0.6	-0.3	0.2	1.0	0.0	0.1	0.3
TOTAL	**0.0**	**0.3**	**1.0**	**0.0**	**0.3**	**0.8**	**0.1**	**0.4**	**1.5**	**0.0**	**0.3**	**0.9**

Table 2
BY COUNTRY AND PUBLIC SPENDING COMPONENT

	Government consumption						Public investment					
	By origin			By destination			By origin			By destination		
	Impact	1 year	2 years	Impact	1 year	2 years	Impact	1 year	2 years	Impact	1 year	2 years
Germany	0.0	0.2	0.6	0.1	0.5	0.9	0.2	0.9	1.9	0.2	1.5	3.7
France	0.0	-0.6	-1.0	0.0	0.3	0.7	0.9	0.5	2.1	0.2	1.1	2.3
Italy	0.1	0.7	1.0	0.0	0.2	0.3	0.0	0.9	2.2	0.0	0.0	-0.3
Spain	0.2	0.6	1.2	0.1	0.3	0.7	-0.2	1.4	2.1	0.1	0.3	0.9
TOTAL	**0.0**	**0.1**	**0.2**	**0.1**	**0.3**	**0.6**	**0.4**	**0.8**	**2.1**	**0.1**	**0.9**	**1.9**

SOURCE: Banco de España.

a Estimates obtained from regressions based on the local projections method for each pair of countries considered. In each regression, the exogenous change in a country's public spending is related to the economic impact on a neighbouring country. On the basis of the coefficients of these regressions, the public spending multiplier between the two countries is calculated as the ratio of the effect on the recipient country's GDP to the effect on the public spending of the country where the fiscal expansion takes place. These multipliers between pairs of countries are aggregated to construct the spillover effect by origin, which measures how the increase in a country's public spending affects economic activity in the neighbouring countries, and by destination, which reflects the effect of a fiscal expansion in the neighbouring countries on the economy of a specific country.

cross-country impacts can be summarised taking the country of origin of the fiscal expansion and the impact that this has on the remaining countries (destination). Thus, the spillover effect by origin (see accompanying table) reflects the degree in which an increase in public spending in a country affects the activity of the other countries. For instance, taking the first row of the top left-hand panel of the table corresponding to "Germany", the effect by origin of 0.5 after two years indicates that a fiscal expansion in this country generates an effect on the other euro area countries equivalent to half of the initial expansion. For its part, the spillover effect by destination shows the impact exerted by a simultaneous expansion in spending in the other countries on a specific country's GDP. In particular, if the first row of the top left-hand panel of the table is taken, in the block "by destination", a fiscal impulse in the rest of the euro area would entail an expansion of Germany's GDP, after two years, equivalent to almost double the initial expansion (a value of 1.8).

The results of the analysis show that there are significant fiscal spillover effects in the euro area, in the medium term (over a two-year horizon). Specifically, having regard to the origin of the fiscal expansion, an increase in the public spending of the countries considered produces, on average, a relevant impact on the GDP of their partners (see the left-hand panel of the table), with a multiplier around unity, and on a scale similar to the effect it has on their own economies (see Table 4.1 of the main body of the text).[5] As regards the heterogeneity of the results by country, the lower spillover effects in Germany than in France, Italy and Spain would be indicative of a lower import content in public spending in the first case. In any event, the results presented should be viewed as illustrative, given that the estimates are obtained with high uncertainty (broad confidence bands).

The results pertaining to the economic effect on each country of the increases in public spending in the other neighbouring countries (by destination) show greater heterogeneity (see the "by destination" columns of the top left-hand panel). This is discernible in the differential effect that fiscal expansions have on exports (see the top right-hand panel of the table), highlighting the importance of the trade channel in the transmission of fiscal policy shocks. Hence Germany, given its greater export intensity, receives a high spillover effect of the fiscal expansion of its neighbours, while the impact on Italy is more limited.

Analysing separately the economic impact of government consumption and public investment (see the lower panel of the table), it can be seen that the increases in investment show greater spillover effects. These prove moreover to be of a similar amount for the countries analysed, with a multiplier close to 2, two years after their implementation, while there is high heterogeneity when the expansion is implemented through government consumption.

In short, the evidence presented here suggests that there are significant spillover effects of fiscal policy among the biggest euro area countries[6], which would be particularly relevant in the case of a budgetary expansion based on public investment.

5 However, it should be stressed that the spillover effects in the very short term are close to zero.

6 See, for example, J. in't Veld *(2013), Fiscal consolidations and spillovers in the Euro area periphery and core,* European Economy, Economic Papers, no. 506.

The recent financial crisis in the United States had a differentiated impact on activity and unemployment rates in the different States, which depended, among other factors, on the relative weight of the real estate sector in each State's productive structure (see Chart 1.1). To alleviate the adjustment costs arising from idiosyncratic shocks (or from common shocks with heterogeneous impacts), the United States has risk-sharing mechanisms – with differing degrees of automatism – so that the consequences are borne in part by the Union as a whole.

Among these mechanisms, unemployment insurance is of particular importance: it incorporates a common system for the entire Union in which the federal State complements the unemployment coverage arrangements in place in each State (see Chart 1.2).[1] The system is based on the accumulation of a buffer of funds in periods of expansion (known as forward funding) earmarked for funding benefits in crisis periods. These funds are accumulated through employers' social contributions in two tranches (Federal and State), which are consolidated in designated accounts at the Federal level (known as trust funds).

Within the State tranche, each State enjoys considerable discretionarity when setting the different levels of tax-raising and benefits, albeit observing common Federal rules. Specifically, the tax base varies from State to State,[2] as does the State contribution

1 See S. Albrizio, J. C. Berganza and I. Kataryniuk (2017), "Federal unemployment insurance in the United States", Analytical Articles, Banco de España, 25 May.

2 The tax base cannot be less than $7,000. In 2017, the base oscillated between $7,000 in Arizona, with a range of tax rates between 0.13% and 7.73%, and $45,000 in Washington, with a range of tax rates between 0.04% and 10.59%. The duration of unemployment benefits stands between 20 and 30 weeks for those workers who are unemployed owing to reasons beyond their control and will. The benefit is equivalent to between 35% in Alaska and almost 60% in Hawaii of the final wage received.

1 US UNEMPLOYMENT SYSTEM

Chart 1
IMPACT OF THE CRISIS ON UNEMPLOYMENT AND WEIGHT OF CONSTRUCTION

Chart 2
RESERVES AND LOANS IN THE FEDERAL UNEMPLOYMENT SYSTEM

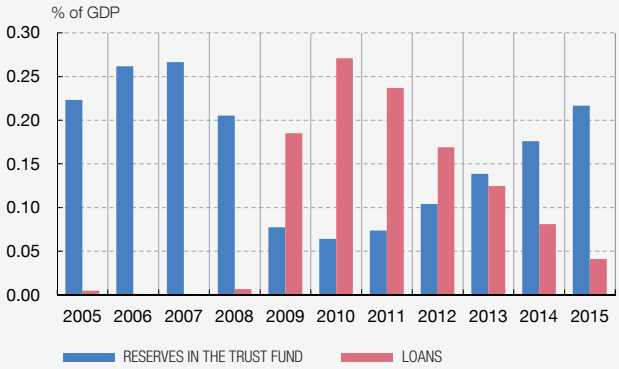


Chart 3
FEDERAL AND STATE SPENDING ON UNEMPLOYMENT TRANSFERS

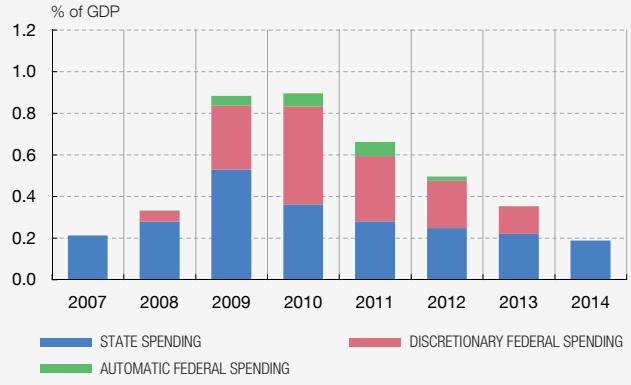
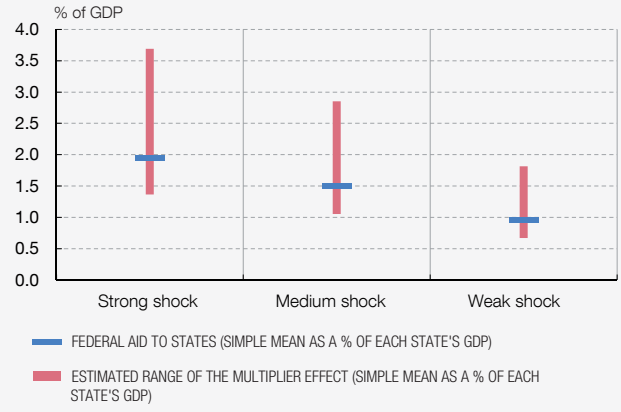


Chart 4
RESERVES AND LOANS IN THE FEDERAL UNEMPLOYMENT SYSTEM (a)



SOURCES: US Department of Labor, US Bureau of Economic Analysis and own calculations.

a The States are classified in three groups, depending on the size of the increase in the State unemployment rate, in terms of percentage points. The expenses and economic effects are calculated relative to each State's GDP. The range of the multipliers includes a minimum coefficient of0.7 and a maximum coefficient of 1.9, consistent with the CBO 2010 analysis, *Policies for Increasing Economic Growth and Employment in 2010 and 2011*.

rate, which is based on an incentive/penalty system for employers dependent upon dismissals in their companies in recent years.[3] This means that employers internalise the social cost of dismissals. So as not to restrict employee mobility, which is a natural adjustment mechanism in the face of shocks, the State in which the employee has generated the benefit entitlement should pay the benefit, irrespective of the unemployed worker's residence.

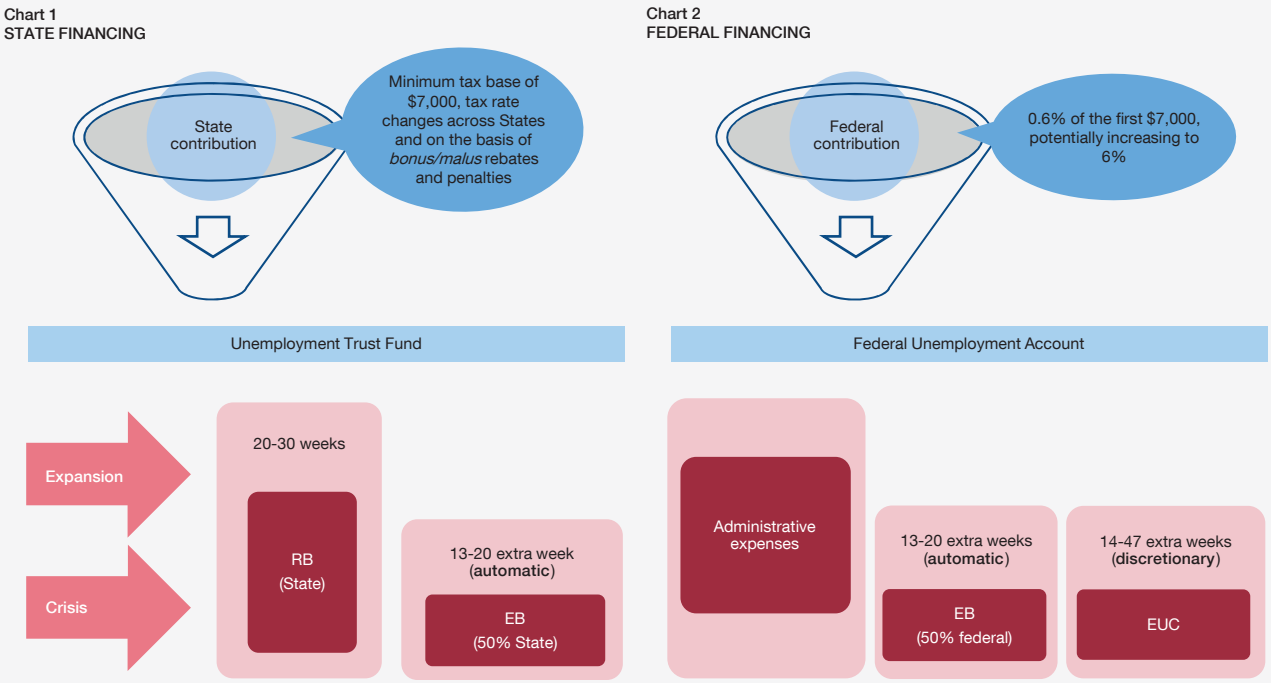
Within the federal tranche, the tax rate stands at 6% of the first $7,000 of employees' wage income. However, in normal conditions, employers receive a tax credit of 5.4%, meaning the rate is at 0.6%. The revenue raised is accumulated in a single account at the federal level.

The federal State has a very different role in periods of expansion and crisis. In periods of expansion, its role is essentially a passive one: it sets the system's minimum requirements and covers administrative costs. However, in times of crisis it adopts an active role to share risks and resolve potential liquidity problems, through two types of measures: loans to State accounts and direct transfers.

The federal State thus alleviates the liquidity problems of the State accounts through loans from the federal account to those State accounts that have been left without reserves. These loans help the States first, by providing low-cost financing at a time at which the cost of market financing might rise; and further, by enabling repayment terms to be extended, which mitigates any possible credit tightening. If the loan is repaid within the fiscal year, it is considered to be a liquidity loan and no interest is charged; if it is not returned, interest similar to that on federal public debt is charged and payment thereof must stem from the State budget. For every year the loan repayment is delayed, the tax credit on the minimum federal rate diminishes by 0.3 pp and what is raised is used to reduce current debt. In this way, both the interest on loans and the automatic increase in rates are used as a mechanism to lessen moral hazard in the fiscal behaviour of the federal States. The cumulative amount of these loans during the recent crisis came to account for 84% of the flow of State benefits and 0.3% of US GDP (see Chart 1.2). Along with the unusual size of the shock,

3 For further information, see J. Fath and C. Fuest (2005), *Experience Rating of Unemployment Insurance in the US: a Model for Europe?*, CESifo DICE Report, 3 (2), pp. 45-50.

2 FUNCTIONING OF THE UNEMPLOYMENT SYSTEM



SOURCE: Banco de España.
NOTE: RB: State benefits. EB: Extended benefits (automatic federal transfers). EUC: Emergency Unemployment Compensation (discretionary federal transfers).

the increase in access to funding was due to the insufficient amount of reserves in State accounts that had built up in the previous expansionary period. This led to the system being reformed as from 2014, in order to ensure a higher level of saving in boom periods and to prevent the payment of interest by States pursuing sound fiscal behaviour, but which had undergone a lasting crisis.[4]

Direct transfers from the federation, for their part, may be automatic or discretionary. Automatic transfers – or extended benefits – are a programme that entails an extension of the duration of benefits in periods of high and rising unemployment at the State level, whose cost falls equally on the State accounts and the federal account. However, during the recent crisis, Congress decided that the total cost of the extension should be assumed by the federal account, owing to the fact that the States had included highly restrictive requirements for the activation of the programme, with the aim of making the increase in benefits not overly burdensome for the State accounts. As regards discretionary transfers, reference is made to eight programmes implemented since 1950 at times of crisis (the latest in the period 2008-2013), approved ad hoc by the Congress and funded by the federal budget. Chart 1.3 shows the significance of federal unemployment transfers during the recent crisis. As can be seen, Federal participation, which accounted for almost 50% of the total unemployment benefits during the period 2009-2012, falls off briskly in the economic recovery.

As with any other unemployment benefit system, the automatic or discretionary extension of benefits during a period of high unemployment has both advantages and costs. Among the positive aspects is their role as an automatic stabiliser: by providing a safety net for the unemployed, benefits granted enable them to maintain their purchasing power, to pursue the search for a job more in keeping with their characteristics and, at the aggregate level, they provide a boost to economic recovery. Among the negative aspects, an increase in benefits may slow the re-employment process after a recession, by means of the effect on the behaviour of economic agents.[5]

Chart 1.4 makes an approximation to the economic effect of the extension of transfers during the last financial crisis. The calculation is made taking into account federal spending (on a cumulative basis from 2008 to 2013) by State, and to measure its impact on activity a range of standard multipliers for unemployment benefits is taken into account.[6] As can be seen, the federal government spent around 2% of cumulative State GDP on benefits in the States most affected by the economic crisis in terms of employment, twice that spent in States where the impact of the crisis was lower. That led to a cumulative impact in terms of GDP of between 1.5 pp and almost 4 pp for the most affected States and between almost 1% and 2% for States posting a smaller increase in unemployment. It may therefore be concluded that federal benefits notably softened the impact of the economic crisis across States.[7] Adding to these effects would be those associated with the reduction of the financial burden resulting from the loans to State accounts.

4 For further information, see employment and training administration 20 CFR part 606, "Federal-state Unemployment Compensation Program; Funding Goals for Interest-Free Advances; Final Rule" (2010), Federal Register, vol. 75, no. 180, Rules and Regulations.

5 Specifically, an extension of benefits might increase the reservation wage and, consequently, it might: i) raise the renegotiation wage, distorting firms' hiring decisions, and ii) reduce the intensity with which workers search for a new job.

6 CBO 2010, Policies for Increasing Economic Growth and Employment in 2010 and 2011.

7 This estimate provides an indicative amount of the economic effect of the benefits, without aiming to estimate the net economic impact of the unemployment system, which, in addition to the effects calculated, would include the impact of contributions and the opportunity cost of loans.

Throughout recent decades, the persistence of budget deficits in the main advanced economies has prompted a growing public debt trajectory. Among the reasons justifying this, the search for short-term objectives by the political authorities or by specific pressure groups has occasionally been cited, although this may lead to inappropriate fiscal policies being pursued without taxpayers being able to internalise in full the consequences of these decisions for well-being or for future generations. This deficit bias may prove more significant in the case of a monetary union, if the Member States do not fully internalise the consequences that excessive debt may have on the other members.

The economic literature has proposed various mechanisms to reduce such deficit bias, including most notably: 1) adopting fiscal rules; 2) establishing independent fiscal councils; and 3) delegating certain fiscal decisions to an independent authority. The various existing – and not necessarily mutually exclusive – alternatives differ in the degree of control that they seek to impose on Governments' actions.

Fiscal rules are a key element in the current architecture of the euro area. Under the Stability and Growth Pact (SGP), the Member States undertake to hold their public debt and budget deficit under 60% and 3% of GDP, respectively. Further, there are commitments to maintain a structural balance close to zero throughout the cycle – the medium-term objective – and a spending rule which, broadly speaking, limits expenditure growth to each economy's potential or medium-term growth. The effectiveness of this set of rules has been questioned, in particular during the current crisis, meaning that at present various reform proposals have been mooted.

In particular, some authors call for greater automaticity and simplification around a spending rule that ensures an anchoring of debt in the medium term. An example along these lines is the so-called "debt brake" rule in force in Switzerland, which restricts the ratio resulting from its spending relative to its revenue, subject to two adjustments. First, the formula takes into account the status of the cycle, allowing a deficit when the economy is below trend but demanding a surplus during expansions. Second, the rule includes an "adjustment account", which accumulates past deficits and surpluses. When the adjustment account shows a negative balance, the rule lowers the spending ceiling by a sufficient amount to pay the debt expected to build up over the next three years. In this way, unlike the SGP, the rule automatically tightens when repeated deficits ensue. Along these same lines, other authors propose introducing greater automaticity in the control of specific public spending items, as is the case, for instance, in certain pension systems in which budgetary equilibrium is imposed automatically, calculating the aggregate level of pensions on the basis of the system's revenue or each individual pension in terms of a personal account based on the contributions of each pensioner. The 2013 reform to Spanish pensions established, in fact, an automatic budgetary equilibrium mechanism, by defining a "revaluation index"[1] that adjusts the level of pensions annually on the basis of the gap between the system's revenue and expenditure.

The literature suggests that the effectiveness of fiscal rules may increase if accompanied by the establishment of independent fiscal councils.[2] Analyses by these institutions of general government fulfilment of the rules, the cost of new legislative initiatives, and the design and application of budgets and, in particular, of the macroeconomic scenarios underlying budgets, may reduce the bias towards excessive deficits. The current structure of European governance has strengthened the SGP, adopting in part these institutional innovations. The new fiscal governance framework requires the establishment of national independent fiscal authorities, who shall be entrusted with monitoring budgetary policies and compliance with the fiscal rules.

However, in the EU these independent fiscal institutions have not been assigned an explicit role in setting budgetary objectives, and nor have they been given powers to act on public spending or revenue and to modify these items should a specific fiscal policy be deemed inappropriate. In this respect, some academic proposals have suggested delegating one of these aspects (the setting of objectives or the correction instrument) to the independent fiscal institution.[3] It is sought thereby to restrict the degree of Governments' discretionarity, keeping in any event the functions afforded them by democratic mandate unchanged, in terms of income redistribution and the attainment of economic efficiency.

Against this background, a consultative European Fiscal Council has been created within the European Commission. Its functions include overseeing compliance with European fiscal rules, advising the European Commission on the fiscal policy stance deemed appropriate for the area as a whole and cooperating with the National Fiscal Councils. In this respect, from the European standpoint, some papers[4] analyse how delegating a fiscal policy instrument to an independent European authority can fit into the

1 See A. R. Sánchez (2014), *the automatic adjustment of pension expenditures in Spain: an evaluation of the 2013 pension reform,* Working Paper no. 1420, Banco de España.

2 See L. Calmfors (2011), *The role of independent fiscal policy institutions,* CESifo Working Paper, no. 3367; G. Kopits (2011), "Independent fiscal institutions: developing good practices", *OECD Journal on Budgeting*, 11 (3), pp. 1-18; C. Wyplosz (2005), "Fiscal policy: institutions versus rules", *National Institute Economic Review*, 191, pp. 70-84.

3 See J. Costain and B. de Blas *(2012), The role of fiscal delegation in a monetary union: A survey of the political economy issues,* Working Papers in Economic Theory 2012/11, Universidad Autónoma de Madrid and the references cited therein.

4 See H. Basso and J. Costain (2016), *Fiscal delegation in a monetary union with decentralized public spending*, CESifo Economic Studies, 62 (2), pp. 256-288.

current governance framework while taking into account the institutional framework of the monetary union. They conclude that a mechanism of this type could reduce aggregate public debt levels in the Union so that headroom may be gained for discretionary fiscal policy measures, from an aggregate standpoint.

In sum, the experience of recent years highlights the importance of pursuing disciplined fiscal policies that give rise to sufficient room for manoeuvre in the expansionary years, so that a stabilising function may be fully exerted in recessionary phases. The literature illustrates the advisability of setting fiscal rules that enable Governments to internalise the consequences of their decisions for future generations or, in the context of the euro area, for the other Member States. Also, the effectiveness of these rules may be boosted when they are accompanied by independent fiscal institutions.

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ISSN: 1579 - 8623 (online edition)

ABBREVIATIONS

ABS	Asset-backed securities
BCBS	Basel Committee on Banking Supervision
BE	Banco de España
BIS	Bank for International Settlements
BLS	Bank Lending Survey
BOE	Official State Gazette
BRICs	Brazil, Russia, India and China
CBA	Central Balance Sheet Data Office Annual Survey
CBQ	Central Balance Sheet Data Office Quarterly Survey
CBSO	Central Balance Sheet Data Office
CCR	Central Credit Register
CDSs	Credit default swaps
CESR	Committee of European Securities Regulators
CNE	Spanish National Accounts
CNMV	National Securities Market Commission
CPI	Consumer Price Index
CSPP	Corporate sector purchase programme
DGF	Deposit Guarantee Fund
EBA	European Banking Authority
ECB	European Central Bank
ECOFIN	Council of the European Communities (Economic and Financial Affairs)
EDP	Excessive Deficit Procedure
EFF	Spanish Survey of Household Finances
EFSF	European Financial Stability Facility
EMU	Economic and Monetary Union
EONIA	Euro overnight index average
EPA	Official Spanish Labour Force Survey
ESA 2010	European System of National and Regional Accounts
ESCB	European System of Central Banks
ESFS	European System of Financial Supervisors
ESM	European Stability Mechanism
ESRB	European Systemic Risk Board
EU	European Union
EURIBOR	Euro interbank offered rate
EUROSTAT	Statistical Office of the European Communities
FASE	Financial Accounts of the Spanish Economy
FDI	Foreign direct investment
FROB	Fund for the Orderly Restructuring of the Banking Sector
FSB	Financial Stability Board
FSF	Financial Stability Forum
GDI	Gross disposable income
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GNP	Gross national product
GOP	Gross operating profit
GVA	Gross value added
HICP	Harmonised Index of Consumer Prices
IASB	International Accounting Standards Board
ICO	Official Credit Institute
IFRSs	International Financial Reporting Standards
IGAE	National Audit Office
IIP	International Investment Position
IMF	International Monetary Fund
INE	National Statistics Institute
LTROs	Longer-term refinancing operations
MFIs	Monetary financial institutions
MIP	Macroeconomic imbalance procedure
MMFs	Money market funds
MROs	Main refinancing operations
MTBDE	Banco de España quarterly macroeconomic model
NAIRU	Non-accelerating inflation rate of unemployment
NCBs	National central banks
NFCs	Non-financial corporations
NPBs	National Productivity Boards
NPISHs	Non-profit institutions serving households
OECD	Organisation for Economic Co-operation and Development
OJ L	Official Journal of the European Union (Legislation)
ONP	Ordinary net profit
OPEC	Organisation of Petroleum Exporting Countries
PMI	Purchasing Managers' Index
PPP	Purchasing power parity
QNA	Quarterly National Accounts
SDRs	Special Drawing Rights
SEPA	Single Euro Payments Area
SGP	Stability and Growth Pact
SMEs	Small and medium-sized enterprises
SPEE	National Public Employment Service
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
TFP	Total factor productivity
TLTROs	Targeted longer-tem refinancing operations
ULCs	Unit labour costs
VAT	Value Added Tax

COUNTRIES AND CURRENCIES

In accordance with Community practice, the EU countries are listed using the alphabetical order of the country names in the national languages.

BE	Belgium	EUR (euro)
BG	Bulgaria	BGN (Bulgarian lev)
CZ	Czech Republic	CZK (Czech koruna)
DK	Denmark	DKK (Danish krone)
DE	Germany	EUR (euro)
EE	Estonia	EUR (euro)
IE	Ireland	EUR (euro)
GR	Greece	EUR (euro)
ES	Spain	EUR (euro)
FR	France	EUR (euro)
IT	Italy	EUR (euro)
HR	Croatia	HRK (Croatian kuna)
CY	Cyprus	EUR (euro)
LV	Latvia	EUR (euro)
LT	Lithuania	EUR (euro)
LU	Luxembourg	EUR (euro)
HU	Hungary	HUF (Hungarian forint)
MT	Malta	EUR (euro)
NL	Netherlands	EUR (euro)
AT	Austria	EUR (euro)
PL	Poland	PLN (Polish zloty)
PT	Portugal	EUR (euro)
RO	Romania	RON (New Romanian leu)
SI	Slovenia	EUR (euro)
SK	Slovakia	EUR (euro)
FI	Finland	EUR (euro)
SE	Sweden	SEK (Swedish krona)
UK	United Kingdom	GBP (Pound sterling)
JP	Japan	JPY (Japanese yen)
US	United States	USD (US dollar)

CONVENTIONS USED

M1	Notes and coins held by the public + sight deposits.
M2	M1 + deposits redeemable at notice of up to three months + deposits with an agreed maturity of up to two years.
M3	M2 + repos + shares in money market funds and money market instruments + debt securities issued with an agreed maturity of up to two years.
Q1, Q4	Calendar quarters.
H1, H2	Calendar half-years.
bn	Billions (10^9).
m	Millions.
bp	Basis points.
pp	Percentage points.
...	Not available.
—	Nil, non-existence of the event considered or insignificance of changes when expressed as rates of growth.
0.0	Less than half the final digit shown in the series.