ANNUAL REPORT 2015

BANCO DE ESPAÑA
Eurosistema

The Spanish version of the 2015 Annual Report contains an annex entitled “The management of the *Banco de España* in 2015”, available at http://www.bde.es/bde/es/secciones/informes/Publicaciones_an/Informe_anual/

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FOREWORD BY THE GOVERNOR

Luis M. Linde

A key characteristic of the Spanish economy in 2015 was the step-up in the pace of recovery initiated in mid-2013, raising GDP growth to 3.2%. This also fed through to the labour market, with the creation of more than half a million jobs over the year as a whole. The dynamism of our economy, which has continued into early 2016, is a most notable feature of recent developments in the euro area.

The current phase of recovery has allowed significant progress to be made in the correction of the main imbalances built up by the Spanish economy in the previous upturn and in the early years of the crisis. However, some of these imbalances persist and are factors of vulnerability, posing significant economic policy challenges.

The *Annual Report* analyses the factors underpinning the recent growth in the Spanish economy, identifies the challenges outstanding and discusses the most suitable economic policies for facing such challenges.

In 2015, the growth rate of the global economy fell to 3.1%. This was a result of the diminished dynamism of the emerging economies, in a setting in which the advanced economies maintained a modest pace of increase, despite the expansionary stance of economic policies and the fall in oil prices. This decline, along with the re-balancing of the Chinese economy and expectations about the normalisation of US monetary policy, raised uncertainty globally, giving rise to significant increases in volatility on financial markets.

The euro area grew moderately compared with past episodes of recovery, while prices remained stagnant and medium- and long- term inflation expectations slipped downwards. These circumstances led the ECB to extend its asset purchase programme in early 2015 to include securities issued by the public sector, and to approve further measures in December last year and in March this year. As analysed in Chapter 3 of the Report, these measures, along with earlier adopted ones such as the setting of a negative deposit facility rate and the targeted long-term refinancing operations (TLTROs), have contributed significantly to easing financial conditions.

In Spain's case, the current recovery phase began three years back with the improvement in the economic and financial environment, to which the policies and reforms applied both domestically and at the European level contributed. The adjustment in the relative prices and costs of goods and services has helped enhance the Spanish economy's competitive capacity, invigorating exports and boosting domestic expenditure and employment. The process of household and corporate deleveraging has continued, in a setting in which many of the financial fragmentation problems within the euro area have been corrected. These developments have been conducive to the correction of the external imbalance and the generation of a net lending capacity of the nation vis-à-vis the external sector, both of which aspects are addressed in detail in Chapter 2 of the Report.

Along with the foregoing more structural factors, the sound pace of growth in 2015 was enhanced by other eminently temporary elements. The new monetary measures and their impact on public- and private-sector financing conditions, the depreciation of the euro, the change in fiscal policy stance and the fall in oil prices had a most notable effect on activity, which was only partly offset by the slowdown in global markets.

The analyses available discount a progressive tailing off of some of these temporary factors, which will result in a gradual moderation of growth rates in the short and medium term.

Against this background, further headway in restoring levels of activity and employment and in improving medium- and long-term growth prospects will require tackling the challenges still outstanding, namely reducing unemployment, fiscal consolidation, private-sector deleveraging, the moderation of the external debt position and improved productivity.

First, unemployment. The unemployment rate dipped in early 2016 to 21%, after having stood at almost 27% in 2013; but it remains far above the rate observed in other European countries, at what is a socially unacceptable level. Moreover, the incidence of long-term unemployment (where workers have been jobless for more than one year) affects almost 60% of the unemployed. The persistence of such a high unemployment rate is one of the main factors behind the increase in income inequality in Spain in the context of the crisis.

To entrench balanced growth and a sustainable employment rate requires maintaining and building upon the competitive gains achieved in recent years. This calls for a labour market framework that strengthens internal flexibility and provides for the adjustment of wages to companies' specific conditions. To correct the strong incentive offered by current regulations to temporary hiring, it is necessary to boost the attractiveness of permanent hires, preventing their excessive protection from encouraging the resort to temporary employees. In turn, active policies must be improved, especially those geared to promoting the employability of lesser-skilled workers.

In the fiscal arena, last year's high budget deficit of 5.1% of GDP interrupted the sustained restrictiveness of budgetary policy in recent years. There was slippage from the target and an increase in the structural component of the deficit, to almost 3% of GDP. Together with this, the public debt/GDP ratio stands at close to 100% of GDP, more than 60 pp of GDP up on the pre-crisis level.

The risks for the economy as a whole that such high levels of public debt and budget deficit have, even in an environment of very low interest rates, should not be taken lightly. Accordingly, it is a priority to resume the corrective path of the fiscal imbalance, in which connection it is necessary to define a detailed medium-term consolidation programme. Such a plan should include a more efficient mix of public revenue and spending, and the strict application of the preventive and coercive mechanisms of the Budgetary Stability Law. Furthermore, it should be accompanied by a strategy that enables the challenges posed to public finances to be tackled, in particular the challenge of population ageing for the pensions system.

The third challenge is linked to corporate and household debt. Despite the reduction of almost 50 pp of GDP in private debt since 2010, this ratio still stands above the average euro area level, and the financial position of certain segments of the population, encompassing households and firms alike, remains vulnerable.

In aggregate terms, bank lending continued to ease in 2015, albeit at a lesser pace than in previous years. These dynamics at the aggregate level are compatible with an environment in which new financing flows continue to increase; in the business area, these flows are earmarked in the main for sectors and companies with a greater growth capacity. Credit institutions' improved solvency and liquidity is expected to have contributed to this recovery in financing to households and firms, although the environment of low interest

rates, the reduction in the outstanding balance of credit and the presence of a still-significant volume of non-performing loans and foreclosures continue to bear down on banks' profitability.

Foreign debt, though it has begun to decline, remains very high and is a significant factor of vulnerability, especially given the recurrent financing needs vis-à-vis the external sector that are entailed. Correcting it will require entrenching the capacity to run current account surpluses in a sustained manner, whereby it will also be crucial to build on the gains in competitiveness attained in recent years.

Improving productivity is one of the major challenges facing our economy in the long run. Only increased efficiency in the use of the productive resources available will enable us to improve potential growth, in particular under a scenario of population ageing, such as that looming in the coming decades.

Converging on the productivity levels of the more advanced economies is a complex task requiring various actions sustained over time. As the analysis in Chapter 4 of the Report infers, providing financing for new investment projects and reducing the obstacles to business dynamism will be essential for promoting the efficient allocation of resources across firms and sectors. Some of these obstacles arise from various regulatory elements, which advises revising those that excessively constrain competition in certain markets or that establish incentives running counter to business growth.

At the same time, raising productivity calls for promoting the accumulation of human and technological capital, and improving the institutions that set the framework of legal and administrative relations between the public and private sectors.

Finally, the deep-seated consequences of our membership of the European Union and of the Economic and Monetary Union should be underscored. The decisions adopted in this realm in recent years and, in particular, those relating to the development of the common institutional architecture and to monetary policy, have been major factors of support in this recovery phase. Giving continuity to this impulse requires, at present, completing the institutional arrangements for EMU and moving forward towards greater economic, financial, fiscal and political integration.

1 Introduction

The pace of recovery in the Spanish economy increased in 2015, attaining growth of 3.2 %...

The pace of the recovery in the Spanish economy dating back to mid-2013 increased in 2015. Despite lower global growth and the cyclical weakness of the euro area, the headway in restoring the main macrofinancial equilibria, the successive reductions in oil prices, the stepping up of monetary policy stimuli and the expansionary fiscal policy stance all helped quicken the growth rate from 1.4% in 2014 to 3.2% in 2015, a figure appreciably higher than that posted by Spain's main European partners.

…providing for a sharp increase in employment and an improved external surplus, although the structural budget deficit worsened

Household consumption, business investment and exports were the demand components that most contributed to the growth in activity. A further factor, in contrast to previous years, was the expansion in consumption and public investment. Employment creation remained notably intense, as evidenced by the increase of over half a million in workers employed. Households and firms (financial and non-financial alike) continued to pursue the deleveraging process they initiated some years ago and, overall, they generated net lending above the financial requirements of the public sector, meaning that the external financial surplus of the nation as a whole stood at slightly over 2% of GDP. The budget deficit declined to 5.1% of GDP as a result solely of the improvement in activity, as there was an increase in the structural budget deficit (that which is not adjusted for economic developments) to 2.9% of GDP, on European Commission (EC) estimates. The public debt/GDP ratio stood at 99.2% of GDP (99.3% in 2014).

The progressive tailing off of certain factors that have contributed to the increase in output in 2015 will make way for more moderate growth rates in the short and medium term

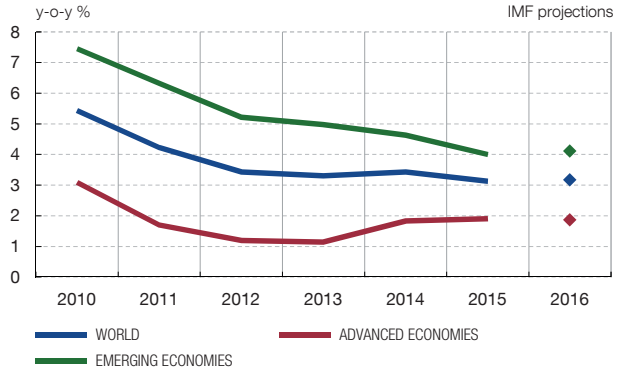
The expansionary fiscal policy stance combined last year with other factors whose positive effects on growth are expected likewise to be temporary. These included the successive reductions in oil and other commodities prices, the depreciation of the euro for much of the year and the easing in financing costs. In this respect, as the impulse from these factors progressively tapers off, the Spanish economy will grow at a more moderate rate, as the latest Banco de España forecasts show.

Despite the progress made in recent years, significant challenges remain in place and must be addressed with an economic policy that is resolute in terms both of fiscal consolidation and of structural reform

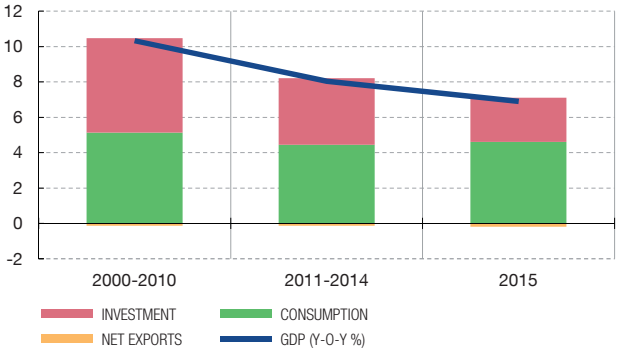
The current recovery phase is proving conducive to helping restore the main macrofinancial equilibria of the Spanish economy which, in turn, have a positive bearing on growth capacity. Improvements have been most visible in the fields of employment, competitiveness, private-sector deleveraging and the stabilisation and incipient recovery of the real estate sector, along with the clean-up and restructuring of the financial sector. Yet significant challenges remain, including most notably the need to reduce high unemployment, to see through the process of private-sector deleveraging and to resume a fiscal consolidation path consistent with a sustained reduction in public debt. And this in a setting in which high external debt and the corresponding sizeable refinancing needs continue to be a factor of vulnerability. For the medium-term outlook to improve, there is a need to boost productivity, the sluggishness of which curtails growth possibilities, and to tackle the effects of population ageing. These challenges call for a resolute economic policy agenda in terms both of fiscal consolidation and of structural reform.

This first chapter analyses the international and domestic factors underpinning growth last year. It also highlights the main challenges facing the Spanish economy and the economic policies needed to tackle them. The remaining chapters in this Report address specific aspects in greater depth, such as those relating to the determinants of the gains in competitiveness observed in recent years and their influence on the current recovery

1 GDP GROWTH AND IMF FORECASTS

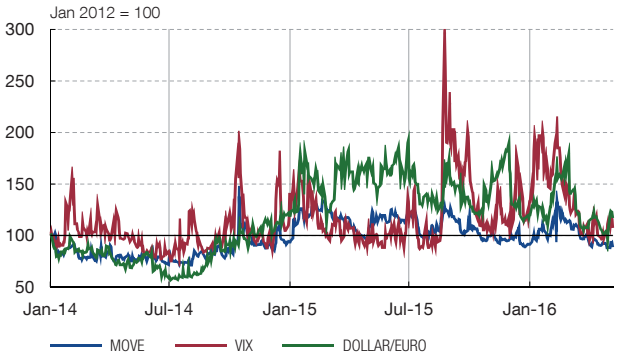


2 RE-BALANCING IN CHINA



3 COMMODITIES PRICES

4 VOLATILITY INDICES



SOURCES: IMF and Datastream.

phase (Chapter 2), the effects of the ECB's non-standard monetary policies on the Spanish economy (Chapter 3) and the significance of business dynamism and its impact on productivity (Chapter 4).

2 Economic developments in 2015

2.1 AN UNCERTAIN GLOBAL SETTING

The growth of the emerging economies slowed …

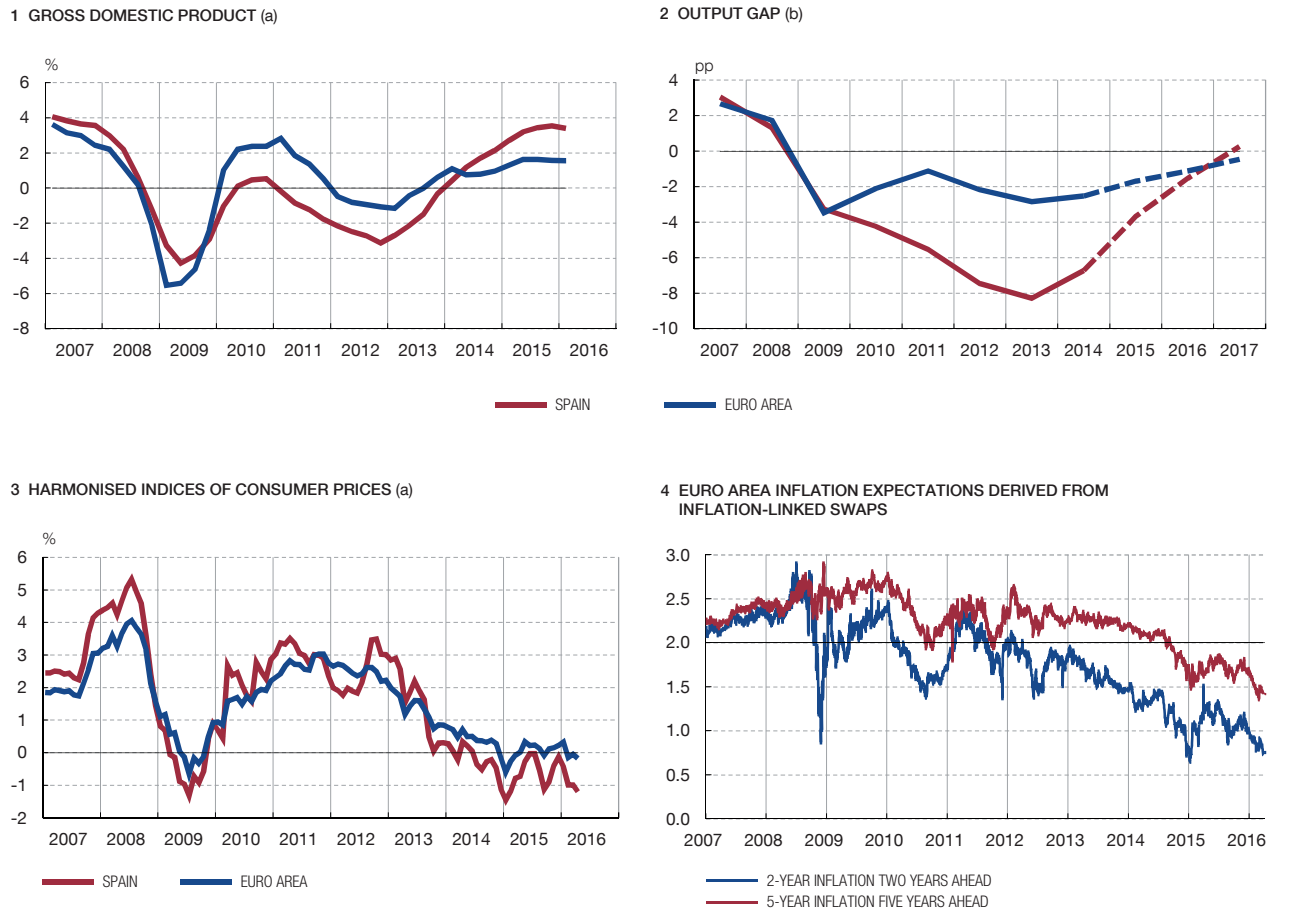
In 2015 the world economy grew by 3.1%, 0.3 pp down on 2014 (see panel 1 of Chart 1.1) and also down on expectations at the start of the year. The slowdown in activity was the result of the diminished dynamism of the emerging economies, whose growth fell, for the fifth year running, to 4% from 4.6% in 2014. The advanced economies maintained a modest rate of increase (1.9% against 1.8% the previous year), despite the expansionary stance of economic policies (monetary policy in particular) and the fresh declines in oil prices. The behaviour of the world economy was influenced mainly by three developments: the re-balancing of the Chinese economy, the acceleration of the fall in oil prices and expectations about the normalisation of US monetary policy.

… in a setting of uncertainty over the re-balancing of the Chinese economy…

The Chinese economy remains immersed in a transition towards a more sustainable growth model, with a greater prevalence of consumption over investment and exports, and of services over industry, and in which the markets play a more significant role in resource allocation (see panel 2 of Chart 1.1). Since summer 2015, the complexity of the process and the doubts about its future course have given rise to increased uncertainty globally, with adverse consequence for trade flows and international financial markets.

GDP AND INFLATION IN SPAIN AND IN THE EURO AREA

CHART 1.2



SOURCES: Eurostat, INE, European Commission and Banco de España.

a Year-on-year rate of change calculated on the basis of seasonally adjusted series in the case of GDP, and CPI original series.
b Defined as the percentage difference between actual GDP and potential GDP. European Commission estimate and projections (broken line) (May 2016).

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… and downward pressures on oil prices

Oil prices continued falling in 2015, albeit with a degree of volatility over the course of the year. The price of a barrel of Brent fell below $30 in early 2016, marking a low since 2003. Subsequently, however, it rebounded to around $50 per barrel (see panel 3 of Chart 1.1). Nonetheless, the global impact of cheaper oil prices is proving less favourable than anticipated, as a result of their adverse effect on investment in the extraction industries, the deterioration in the financial position of energy companies and the fiscal and external situation of the oil-exporting economies.

There was high volatility on financial markets in the second half of 2015 and in early 2016

Uncertainty over the Chinese economy and other emerging areas and the fall in oil prices were two of the main triggers of the turbulence on global financial markets during the second half of 2015 and in the opening months of the current year (see panel 4 of Chart 1.1). Against this background, the dollar appreciated against the benchmark currencies and, above all, relative to those of the emerging economies, owing to its safe-haven status and to the divergence in monetary policy cycles across the different regions. The high volatility on international financial markets in late 2015 and early 2016, and the limited prospects of global growth, however, contributed to tempering the pace of normalisation of the US monetary policy stance, which began last December with the first rate rise in seven years by the Federal Reserve.

2.2 THE EURO AREA AND THE MONETARY POLICY OF THE ECB

The euro area economy grew moderately, driven by consumption…

Euro area GDP grew by 1.5% in 2015, against 0.9% the previous year (see panel 1 of Chart 1.2). The increase in GDP was largely underpinned by household consumption, as a result of more favourable financial conditions and the increase in disposable income, in a setting of low inflation rates and improving labour market conditions. Government consumption also contributed positively to growth, boosted in some countries by the increased expenditure needed to address the refugee crisis, whereas investment remained sluggish.

… and the growth outlook has recently been revised downwards

Despite the improvement, the pace of recovery in the area remained modest, as compared with previous episodes of recovery and in relation to the recent experience of other advanced economies. Since late 2015, the context of lower global growth and greater uncertainty appears to have been contributing to moderating growth prospects, as may be inferred from the projections published last May by the EC, which revised the increase in GDP to 1.6% and 1.8%, respectively, for 2016 and 2017.

The pace of employment creation, while sustained, is still insufficient for significantly reducing the high unemployment still persisting in some countries

One of the highlights of the recent euro area performance is the relatively favourable behaviour of employment, which grew 1.1% in 2015 as a whole, partly driven by the effect of the structural reforms recently undertaken by certain economies in the area. However, job creation is not yet of a sufficient intensity to significantly reduce the high unemployment rates still besetting certain countries. More generally, European labour markets must face the challenges posed by structural unemployment, population ageing and the absorption of migratory flows.

Prices remained flat, in a setting of low inflation expectations

Inflation was dominated by the strong adjustment in oil and other commodity prices, which led the level of prices to hold practically unchanged over the year as a whole, in step with developments in other advanced economies. Temporary fluctuations aside, however, core inflation hovered at rates below 1% throughout 2015 and in early 2016, influenced by the still-wide negative output gap. Indicators of medium- and long-term inflation expectations continue to slip downwards (see Chart 1.2).

The monetary policy measures deployed since mid-2014 had a favourable impact on financial conditions in the area

As explained in detail in Chapter 3 of this Report, the build-up of downside risks to the price stability objective and the growing signs of a de-anchoring of inflation expectations led the ECB to extend its asset purchase programme in early 2015, with secondary market acquisitions of securities issued by the public sector. This measure, along with others previously adopted, such as the setting of negative interest rates on the deposit facility and on targeted long-term refinancing operations (TLTROs), favourably impacted the financing costs of public and private agents alike in the euro area, reducing the levels of financial fragmentation and providing for greater dynamism in the flow of credit. The depreciation of the euro in the opening months of the year had a positive effect on European exports, the relative weight of which on international markets duly increased considerably.

The ECB approved further stimulus measures in December 2015 and in March 2016 in response to the worsening inflation outlook

After the summer, however, the worsening global growth outlook and the increased volatility on financial markets impacted financial conditions in the area. And this, combined with the appreciation of the euro against the benchmark currencies as from that point, partly offset the positive effect of the monetary stimuli. In response to the new scenario, the ECB Governing Council approved further stimulus measures in December 2015 and in March 2016. The monetary authority cut the rate on the deposit facility on two occasions, lowering it to -0.40%, while the rates on the main refinancing operations and on the marginal lending facility stood at 0% and 0.25%, respectively. The Council further decided to expand its asset purchase programme and to introduce a new series of TLTROs in order to strengthen monetary policy transmission through the credit channel.

At the institutional level, it was agreed to approve a third assistance programme for Greece …

The European institutions agreed on a third financial assistance programme for Greece, against the background of the growing vulnerability of the Greek economy which prompted the setting of capital controls. Following the approval of the programme in July last year, there was a third round of recapitalisation of Greek financial institutions and an extensive list of measures – upon which the continuity of the programme and the potential adoption of debt-relief measures are conditional – began to be implemented.

… and there was further progress aimed at completing the Banking Union

After the start-up of the Single Supervisory Mechanism in 2014, further steps were taken throughout 2015 and earlier this year to complete the Banking Union. Thus, the creation of the Single Resolution Mechanism and the entry into force of the Bank Recovery and Resolution Directive will enable situations of non-viability of credit institutions to be tackled using common principles and rules, minimising the economic cost and the need for public funds. Likewise, the Single Resolution Fund, which draws on contributions from banks themselves, has been in place since January 2016 to finance possible resolution measures. Finally, the EC published its proposal regarding the third pillar of the Banking Union, namely the establishment of a European Deposit Insurance Scheme, which contemplates a progressive integration process that should be finalised within eight years.

2.3 THE CONTINUATION OF THE RECOVERY IN THE SPANISH ECONOMY

The Spanish economy continued on a path of recovery in 2015, posting a year-on-year rate of increase of 3.5% in the final quarter of the year, the highest figure since the current expansionary phase began almost 3 years ago (see Chart 1.2 and Table 1.1). Growth was driven by a broad set of factors, some structural in nature and others more temporary.

The Spanish economy was boosted by several factors, some more permanent and others temporary

Notable among the structural factors was the improvement in the macrofinancial setting…

The structural factors relate to the continuation of the still-incomplete adjustment of the main imbalances built up during the previous upturn and the most severe phases of the crisis, and to the improvement in the macrofinancial setting, to which the policies and reforms implemented both domestically and at the European level contributed. In particular, a key element of recent developments is the ongoing improvement in the competitiveness of the Spanish economy derived from the adjustment of relative prices and costs of goods and services. And the correction of a significant portion of the financial fragmentation problems within the euro area and the improved financing conditions for our economy's public and private sectors have also been instrumental in this connection. Further, throughout last year, patent headway was once again made in the deleveraging of households and firms.

The competitive adjustment is estimated to have operated, firstly, by invigorating exports. This, in turn, will have fed through to the domestic spending and employment components, enabling the unemployment rate to be cut considerably, although it remains at a very high level. In turn, the dynamics of employment creation discernible throughout the current phase of recovery have been a significant source of support for demand, in terms both of sustaining household disposable income and improving confidence. These developments are expected to have helped entrench the net lending capacity of the nation vis-à-vis the external sector, as is analysed in Chapter 2 of this Report.

... while the temporary factors included the fall in oil prices, the depreciation of the euro and demand-side policies

Notable among the more temporary factors, given their significance for economic activity and prices, were the new monetary measures. These entailed a further improvement in financial conditions and a depreciation of the euro, the expansionary fiscal policy stance, the fall in oil and other commodities prices, and, in the opposite direction, the slowdown

MAIN INDICATORS OF THE SPANISH ECONOMY (a)

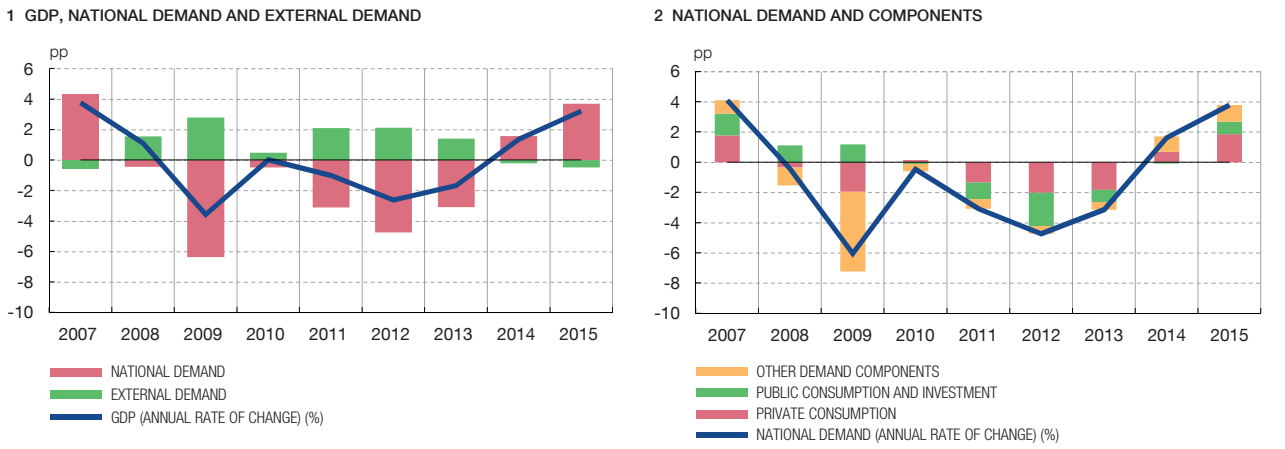
TABLE 1.1

	2010	2011	2012	2013	2014	2015
Demand and output (b)						
GDP	0.0	-1.0	-2.6	-1.7	1.4	3.2
Private consumption	0.3	-2.4	-3.5	-3.1	1.2	3.1
Government consumption	1.5	-0.3	-4.5	-2.8	0.0	2.7
Gross capital formation	-3.8	-7.2	-8.1	-3.6	4.8	7.0
Investment in equipment	5.1	0.8	-8.4	3.9	10.5	10.2
Construction investment	-10.1	-11.7	-8.3	-7.1	-0.2	5.3
Housing	-11.6	-13.3	-5.4	-7.2	-1.4	2.4
Other construction	-8.5	-10.2	-10.7	-7.1	0.8	7.5
Exports of goods and services	9.4	7.4	1.1	4.3	5.1	5.4
Imports of goods and services	6.9	-0.8	-6.2	-0.3	6.4	7.5
Contribution of national demand to GDP growth	-0.5	-3.1	-4.7	-3.1	1.6	3.7
Contribution of net external demand to GDP growth	0.5	2.1	2.1	1.4	-0.2	-0.5
Employment, wages, costs and prices (c)						
Total employment	-2.7	-2.8	-4.9	-3.5	1.1	3.0
Employment rate (d)	59.7	58.8	56.5	55.6	56.8	58.7
Unemployment rate	19.9	21.4	24.8	26.1	24.4	22.1
Compensation per employee	1.1	0.9	-0.6	1.7	-0.6	0.5
Apparent labour productivity	2.7	1.8	2.4	1.9	0.3	0.2
Unit labour costs	-1.6	-0.9	-2.9	-0.2	-0.8	0.3
GDP deflator	0.2	0.0	0.0	0.6	-0.4	0.6
Consumer price index (12-month % change)	3.0	2.4	2.9	0.3	-1.0	0.0
Consumer price index (annual average)	1.8	3.2	2.4	1.4	-0.2	-0.5
Consumer price differential with the euro area (HICP)	0.4	0.3	-0.1	0.2	-0.6	-0.7
Net lending (+) or net borrowing (–) and financial balance (e)						
Resident sectors: domestic net lending (+) or net borrowing (–)	-3.3	-2.9	0.1	2.2	1.6	2.1
General government	-9.4	-9.6	-10.4	-6.9	-5.9	-5.1
General government (excluding aid to financial institutions)	-9.3	-9.1	-6.7	-6.4	-5.8	-5.0
Households and NPISHs	1.3	2.4	2.4	4.2	3.8	3.4
Firms	4.7	4.3	8.1	5.0	3.6	3.8
Financial institutions	1.0	2.1	6.8	2.0	2.1	1.6
Non-financial corporations	3.7	2.2	1.2	3.0	1.5	2.2
Net international investment position	-88.6	-91.9	-90.0	-96.2	-95.6	-90.5
General government gross debt	60.1	69.5	85.4	93.7	99.3	99.2
Monetary and financial indicators (f)						
ECB minimum bid rate on MROs	1.0	1.3	0.9	0.5	0.2	0.1
Ten-year government bond yield	4.2	5.4	5.8	4.6	2.7	1.7
Synthetic bank lending rate	3.3	4.1	4.1	4.1	3.8	2.9
Madrid Stock Exchange General Index (Dec 1985 = 100)	1,076.5	971.8	767.5	879.8	1,066.6	1,080.5
Dollar/euro exchange rate	1.3	1.4	1.3	1.3	1.3	1.1
Nominal effective exchange rate vis-à-vis developed countries (g)	101.7	101.6	100.2	101.5	101.5	99.3
Real effective exchange rate vis-à-vis developed countries (h)	116.1	114.1	107.1	107.0	105.1	102.3
Real effective exchange rate vis-à-vis the euro area (h)	113.5	111.7	106.3	104.6	102.6	102.3
Households: total financing	0.2	-2.4	-3.8	-5.1	-3.6	-2.2
Non-financial corporations: total financing	0.7	-2.0	-6.4	-5.9	-4.4	-0.9

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

a Spanish National Accounts data, base year 2010.
b Volume indices. 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 finanancial assets and liabilities.
g 1999 Q1 = 100.
h 1999 Q1 = 100. Measured with unit labour costs.

SPAIN: GDP AND NATIONAL DEMAND. CONTRIBUTIONS TO GROWTH CHART 1.3



SOURCES: INE and Banco de España.

in world goods and services markets. Box 1.1 offers a quantification of these effects for 2015 in the Spanish economy, which, overall, accounted for around 1.1 pp of additional growth and a 1.6 pp decline in inflation.

Both household expenditure and business investment were markedly dynamic, against a background of expanding government consumption and public investment…

Among the national demand components (see Table 1.1 and Chart 1.3), household spending growth averaged 3.1% in 2015, compared with 1.2% the previous year, assisted by an improvement in its main determinants. Real disposable income thus rose thanks to the increase in labour income, fiscal stimuli and the fall in oil prices. Adding to the improvement in household spending capacity was a higher level of financial and of real estate wealth, which reflected the turnaround in the housing market and a further reduction in the saving ratio, which fell to 9.3% of disposable income. Business investment was also markedly dynamic, growing at a rate of 6.5% against 0.9% in 2014, in step with the brighter economic outlook, the pick-up in business profits and the greater degree of looseness in financing conditions. In general government consumption spending there was a break in the restrictiveness of recent years; this variable grew by 2.7% in 2015 (set against a zero change in 2014), up on the initial official plans for the year. The increase in net public sector employment creation, following several years of freezes or restrictions, and higher general government purchases appear to lie behind this upward trend in government consumption. Finally, public investment increased by 9% in nominal terms, once a set of temporary factors[1] due principally to the investment activity of the regional governments is stripped out, providing for the first positive figure since 2010.

… while the contribution of net external demand to output was negative, but with a fresh increase in the weight of Spanish exports on international markets

Net exports once again contributed negatively to the increase in GDP in 2015, by 0.5 pp (see Chart 1.3). Real exports increased by 5.4% (5.1% in 2014), given that the impact of the gains in competitiveness, derived above all from the nominal depreciation of the euro, exceeded that of the lower growth of export markets. This competitiveness effect progressively lost momentum in the final stretch of the year as the depreciation pressures on the euro ceased. Even so, real Spanish goods and services exports continued to gain

1 These include most notably the reclassification within the general government sector of certain items of investment expenditure in prior years in public-private partnership projects (somewhat over €2 billion). Without excluding these temporary factors, general government investment in nominal terms grew by 21% in 2015.

market share over the course of 2015. The increase in goods sales to developed countries and, in particular, to the euro area, outstripped the fall in those to emerging and developing countries, many of which directly felt the impact of the fall in commodities prices. The foregoing external factors, along with the economic recovery in the main countries providing tourists to Spain and the incidence of the geopolitical conflicts in certain North African and Middle Eastern destinations, contributed to the Spanish tourism sector having a very positive year. Specifically, the number of visitors and revenues (in nominal terms) showed year-on-year increases of 4.9% and 3.9%, respectively.

The growth of imports was very significant, driven by final demand

Imports remained very buoyant, posting an increase of 7.5% following the 6.4% rise the previous year. The strength of private consumption and investment, and the resilience of exports, where some of the sectors with a high import content – such as automobiles – continue to grow significantly, boosted the increase in imports, despite the rise in prices of non-energy goods purchased abroad (see Box 2.2 in Chapter 2 of this Report).

The nation's lending capacity widened to 2.1% of GDP

Against this background, the Spanish economy's lending capacity stood at 2.1% of GDP in 2015 (0.5 pp of GDP up on the previous year). This is chiefly due to the increase in the current account surplus, associated with the reduction in the energy deficit, and in net investment income payments to the rest of the world. Specifically, last year there were savings of €11 billion in the energy bill and of €3.5 billion in net interest payments. The improvement in the terms of trade, owing to cheaper commodities prices, enabled the path of trade surpluses embarked upon in 2011 to be maintained, with the surplus standing at around 2.5% of GDP. Adding to these temporary factors is the improvement in competitiveness, which is more structural in nature and which is analysed in detail in Chapter 2 of this Report.

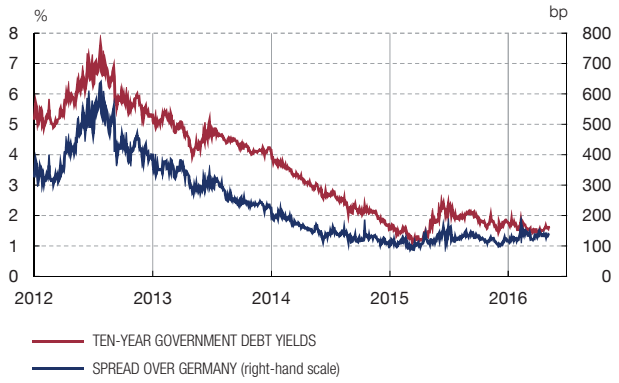
Household and corporate financing conditions eased and credit market activity continued to pick up

Household and corporate financing conditions continued to ease in 2015, benefiting from the monetary policy measures adopted by the ECB. There were thus across-the-board reductions in interest rates on new lending business in all segments, most acutely so in loans to small corporations, which translated into greater proximity to the costs of loans in other euro area countries. In annual average terms, the nominal cost of financing fell last year by between 60 and 110 bp, according to the segment. In real terms the decline was somewhat less (40-90 bp), as average long-term inflation expectations were somewhat lower in 2015 than a year earlier (see Chart 1.4). According to the Bank Lending Survey, throughout 2015 the spread applied to ordinary loans declined in all segments and lending standards were relaxed slightly in respect of loans to households, while they remained unchanged in loans to firms. The survey on SMEs' access to credit reveals a substantial improvement in these companies' perception of their access to financing. The demand of both households and firms for credit increased, boosted by the improvement in financing conditions and by the more favourable expectations of those demanding funds. In the case of general government, the cost of financing fell slightly at the short and medium end of the yield curve, while at the long end, following the significant reduction in the two previous years, it oscillated around end-2014 levels.

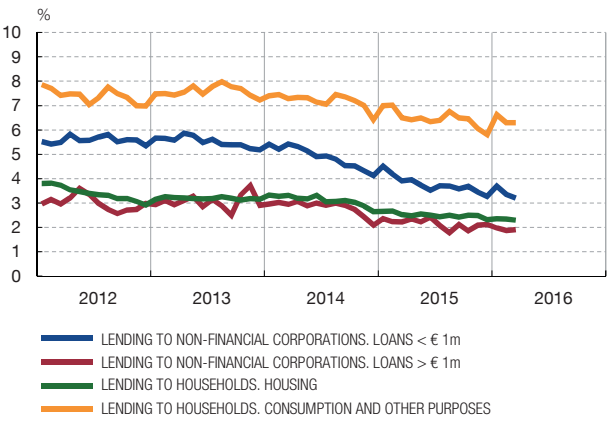
The fall in financial costs has boosted the funds available for expenditure, which has also been supported by the easing in the pace of decline of net financing flows

Both the recovery in gross financing flows and the reduction in payments associated with the repayment of debts incurred (the result of lower debt levels and of the decline in financing costs) have led to an increase in the volume of funds available for business and household expenditure (see panel 5 of Chart 1.4). Despite the increase in new lending, aggregate net financing flows remained negative, albeit for increasingly more moderate amounts. Specifically, the year-on-year rate of decline of household financing stood at 2.3% in December 2015, 1.4 pp less than 12 months earlier, and in the case of corporations it stood at 0.9%, the fall lessening by 3.5 pp in relation to 2014.

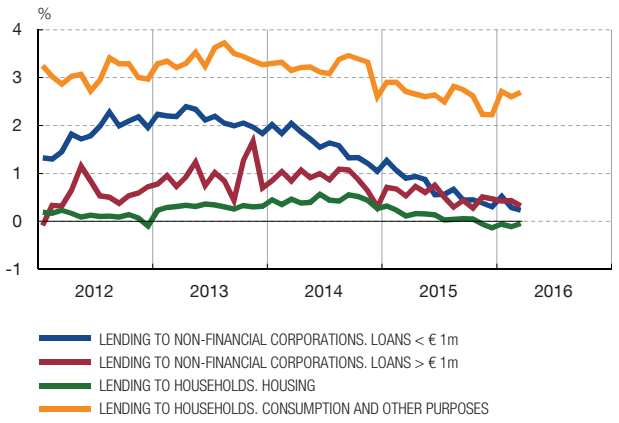
1 TEN-YEAR GOVERNMENT DEBT YIELDS AND SPREAD OVER GERMANY



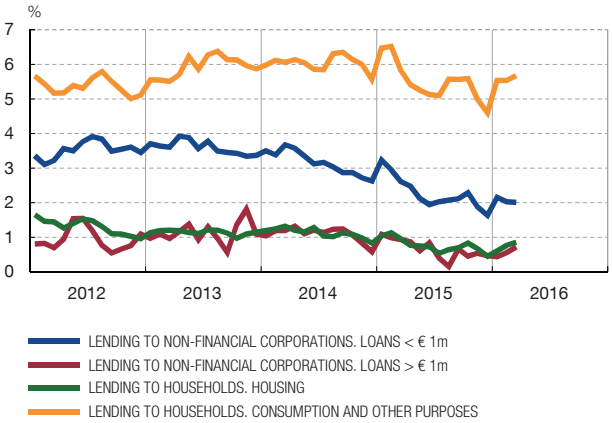
2 BANK INTEREST RATES. SPAIN



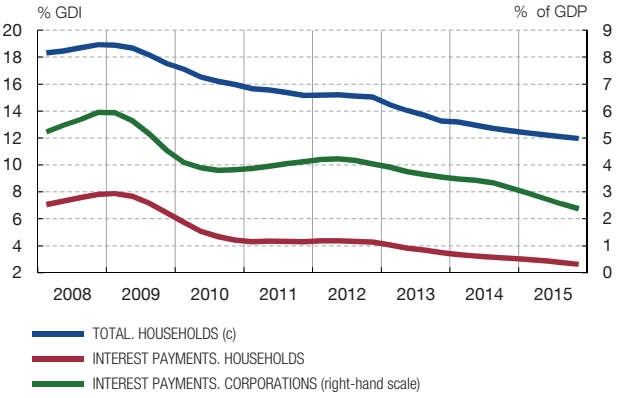
3 BANK INTEREST RATES. SPAIN - CORE EURO AREA DIFFERENTIALS (a)



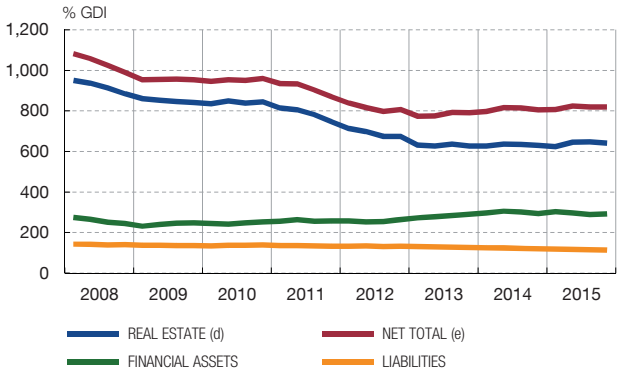
4 REAL BANK INTEREST RATES (b). SPAIN



5 DEBT BURDEN OF HOUSEHOLDS AND CORPORATIONS



6 HOUSEHOLD WEALTH



SOURCES: Datastream, Reuters, ECB and Banco de España.

a Defined as the aggregate weighted by GDP at current prices for the same year of Germany, Austria, the Netherlands, Finland and Luxembourg. In 2015 and 2016, 2014 GDP has been used. To aggregate the different categories by maturity within each country, the same weights (turnover) are used as in Spain, whereby the comparison is not affected by differences between these weights from one area to another.

b Real interest rates have been calculated by subtracting from nominal interest rates the inflation expectations at different horizons obtained from the inflation-linked swaps for Spain. For housing loans, the fifteen-year term has been used; for loans for consumption and other purposes, the five-year term; and for loans to non-financial corporations, the ten-year term.

c Estimate of interest payments plus principal repayments.

d Based on estimated changes in the housing stock, in the average surface area of such housing and in the price per square metre.

e Includes net financial wealth (financial assets - liabilities) and real estate wealth.

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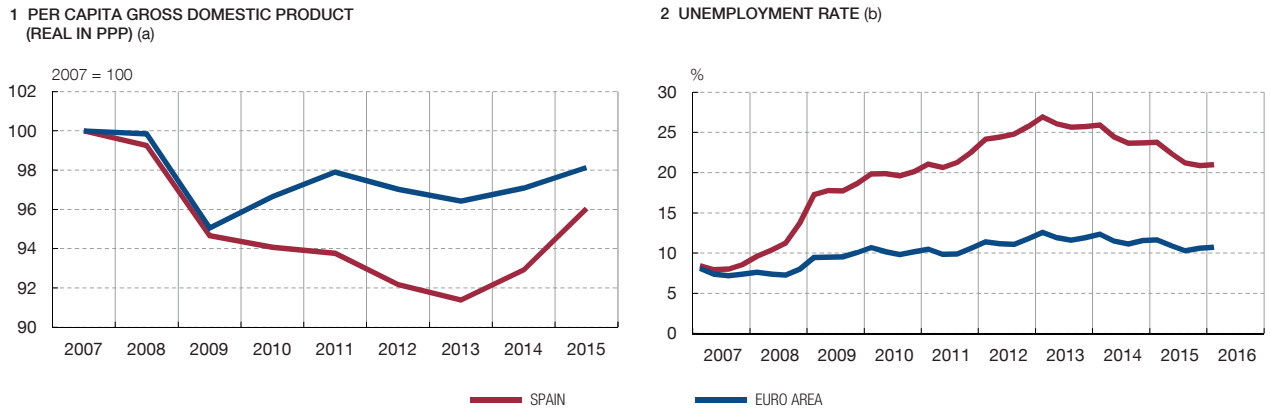
PER CAPITA GDP AND UNEMPLOYMENT RATE IN SPAIN AND IN THE EURO AREA CHART 1.5



SOURCES: Eurostat, INE, European Commission and Banco de España.

a Data in annual frequency and in index numbers.
b Quarterly-frequency gross data of harmonised labour force surveys.

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Employment grew forcefully and across the board in terms of sectors of activity, albeit more sharply so in the case of temporary contracts

Over the year as a whole, employment continued to grow sharply, at a year-on-year rate of 3%; however, at end-2015 only around 30% of the jobs lost from 2008 to early 2014 had been recovered. In terms of the sectors of activity, the increase in employment was across the board, albeit somewhat sharper in industry and in construction. By type of contract, the rise in employment was centred on temporary employees (see panel 4 of Chart 1.6), while by working day the increase in those working full-time exceeded the figures observed for those employed part-time.

The pace of decline in the unemployment rate increased…

In 2015 as a whole, the declines observed in previous years in the labour force eased to -0.1%. The reduction in the final stretch of the year was basically due to the decline in the participation rate, especially among youths returning to training more intensely. This reduction in the labour force, along with the buoyancy of employment, translated into a reduction of almost 680,000 in numbers unemployed compared with the previous year. The unemployment rate fell 2.3 pp in 2015 as a whole to 22.1%, standing in 2016 Q1 at 21%, almost 3 pp down on the figure observed in the same period a year earlier (see Chart 1.5).

… against a background of wage moderation

Unit labour costs held on the moderating path of recent years, although their pace of decline eased. Compensation per employee in the market economy stabilised in 2015, posting a marginal increase of 0.1%, following the 0.6% decline in 2014. Wage rises agreed under collective bargaining moved on a moderately rising trend in the final stretch of the year, tending to converge towards the upper limit of 1% envisaged in the recommendation included in the Agreement for Employment and Collective Bargaining entered into by the social agents in mid-2015. As has habitually been the case in previous recovery phases, the dynamism of apparent labour productivity eased, growing by 0.3% in the market economy (0.9% in 2014).

Inflation moved on a declining trajectory from August, while the non-energy components held on a gradually accelerating course throughout the year

CPI-based inflation posted a negative change in 2015, falling off by 0.5%, against 0.2% the previous year. As in 2014, the declining year-on-year profile of the CPI during the year was strongly influenced by the effect of oil prices, the decline in which quickened as from August. The non-energy CPI and the CPI excluding energy and unprocessed food prices held on a slowly and gradually accelerating path, whereby both indices showed year-on-year rates in December of 0.9% and 1.1%, respectively (see Chart 1.2). These increases are in line with

the strength of domestic demand and the gradual reduction in the economy's cyclical slack, which made for a less marked adjustment in labour costs and more moderate growth than in previous years in the gross surplus.

2.4 TOWARDS A NEW PHASE OF THE BUSINESS CYCLE

The diminished contribution of some of the temporary factors that have recently boosted activity suggests more moderate economic growth in the short and medium term...

Following the double-dip recession that ended in mid-2013, the Spanish economy has seen a cyclical recovery phase take root that is significantly sharper, on average, than that of its European partners. However, the current expansion can hardly continue to be underpinned to the same extent as it was in the past by the aforementioned expansionary factors. Specifically, in the absence of further shocks, it is to be expected that the impact on growth rates of the more temporary factors such as those observed since mid-2014 and discussed in the previous section will begin to diminish.[2] Thus, growth in the Spanish economy will foreseeably hold at more moderate levels than those recorded last year, as is indeed reflected in the latest macroeconomic projections published by the Banco de España, according to which GDP is expected to grow at a rate of 2.7% in 2016 and 2.3% in 2017.

…and the risks to growth have increased as a result of the uncertainty about the global economy, the need to resume a path of fiscal consolidation and doubts over domestic economic policies …

On the international front, various factors – such as the slowdown (or recession in the odd case) in some of the main emerging economies, geopolitical conflicts in certain areas, the sluggishness of world trade, the supply glut in the oil market and the low profitability of banks – shape a complex setting for the global economy. At the domestic level, the need to resume and see through fiscal consolidation, which is essential for retaining confidence in the Spanish economy, will entail short-term costs but will give rise to benefits in the medium term. The uncertainty linked to the domestic political setting increases, in turn, the doubts over the future course of economic policies and the implementation of the reforms needed to bring to fruition the challenges outstanding for the Spanish economy and to improve its future growth prospects.

3 The challenges outstanding for the Spanish economy and the role of economic policies

Restoring macrofinancial equilibria and raising productivity are vital for further progress in the recovery of activity and employment levels

Compared with other euro area economies, the economic crisis impacted Spain with greater intensity (see Chart 1.5) and, despite the headway being made in the current recovery phase in absorbing the main imbalances, the persistence of some of them reveals factors of vulnerability and poses deep-seated challenges in respect of economic policies. Highlighted below are the adjustments outstanding as regards the labour market, fiscal consolidation, private debt, financial dependence on the external sector and productivity. Finally, some challenges outstanding in the construction of the EMU are briefly set out.

3.1 REDUCING UNEMPLOYMENT

The persistence of high rates of joblessness increases the likelihood of unemployment becoming structural

Despite its recent favourable course, the Spanish labour market faces the challenge of reducing high unemployment, so as to prevent a considerable portion of such unemployment becoming structural, and to promote a more dynamic productivity performance (see Box 1.2). The unemployment rate dipped in early 2016 to 21%, almost 6 pp below its 2013 peak, but still far above the level observed in other European countries. Furthermore, this reduction has not passed through with sufficient intensity to the groups that have been unemployed for longest. Indeed, the percentage of long-term unemployment (those in this position for more than one year) still stood at 57.7% in early 2016. The persistence of such a high unemployment rate is one of the main factors that explains the increase in income inequality in Spain. The countercyclical behaviour of the commonest measures of inequality in Spain,

2 See the "Quarterly report on the Spanish economy" in the March 2016 edition of the Banco de España Economic Bulletin.

which tend to show an increase in inequality in periods of recession, is closely related to the dynamics of job creation and destruction flows, which is highly asymmetrical across different jobs, depending on the level of skills required and the associated type of employment contract.[3]

The new regulatory framework of the labour market provides for a better adjustment of wages to the macroeconomic situation and to the conditions prevailing in firms, which has boosted growth in employment

The successive labour reforms approved in recent years added substantial changes to the institutional design of this market. The analyses available about their effects reveal that these reforms, especially that in 2012, have provided for wage moderation by promoting a greater adjustment of working conditions to an environment characterised by sluggish demand and high unemployment.[4] And this has proven crucial for restoring the competitiveness of the Spanish economy and of employment (see Chapter 2 of this Report for a more detailed analysis).

In a very low or even negative inflation environment, wage flexibility is essential for sustaining the current path of employment creation

In 2015 the pattern of wage containment was maintained; however, in a negative inflation environment, real wages increased by 0.5% in the private sector, set against the declines recorded in previous years (see panel 2 of Chart 1.6). A portion of this increase in real wage income was as a result of the recent decline in oil prices, via their negative impact on consumer prices. In this respect, in a low inflation setting across the entire euro area and given the modest growth in productivity, as is projected for the Spanish economy in the coming quarters, excess downward rigidity in nominal wages might hamper the entrenchment of the gains in competitiveness obtained in recent years (see panel 1 of Chart 1.6).

There is still scant linkage of wages to firms' specific conditions...

The firming of a path of balanced growth also involves the reallocation of employment across firms and sectors of activity, requiring adjustments in relative prices and costs, in such a way that wages are linked to the specific conditions prevailing in the various sectors and firms. While the relationship between wage settlements and the cyclical position of the various productive sectors has become closer in recent years, it remains limited.[5]

... in a setting in which the weight of firm-level collective bargaining is still very low

Behind this phenomenon lies a collective bargaining structure characterised by the prevalence of sectoral agreements, with scant influence of firm-level agreements, which currently affect only 6% of workers. Disaggregated information on collective bargaining agreements highlights a limited dispersion across firms of the wage increases agreed in the past two years (see panel 3 of Chart 1.6). This may reduce the incentives for the efficient reallocation of resources across activities. Further, sectoral agreements pose obstacles to the entry of new firms, which have to match, from the outset, the working conditions agreed in sectoral, regional and national agreements.

Employment growth continues to be concentrated in temporary hires, an aspect which the successive labour reforms have not corrected…

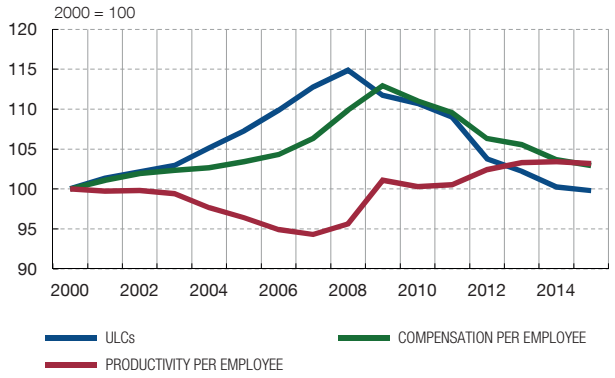
The dynamism of employment in 2015 was concentrated in temporary hires, which rose by 8.3%, against 1.9% for permanent employees. That raised the ratio of temporary to total workers to 25.7% at the end of the year, almost 4 pp up on the level in early 2013, when this rate was at its cyclical low (see panel 4 of Chart 1.6). A disaggregated analysis at the

3 See Bonhomme, S., and L. Hospido (2012), "The Cycle of Earnings Inequality: Evidence from Spanish Social Security Data", Working Paper 1225, Banco de España,

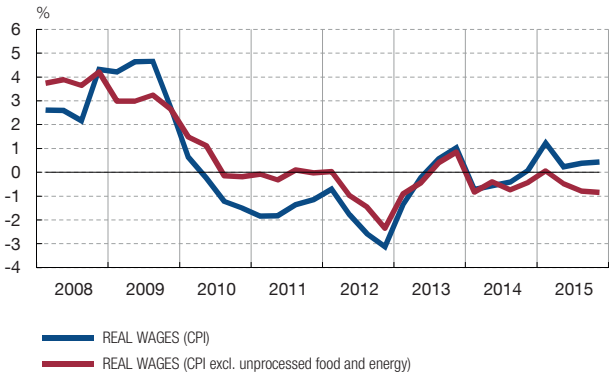
4 See, Izquierdo, M., A. Lacuesta and S. Puente (2013), "The 2012 labour reform: an initial analysis of some of its effects on the labour market", Economic Bulletin, Banco de España, September; Izquierdo.M and J.F.Jimeno (2015), "Employment, wage and price reactions to the crisis in Spain: firm-level evidence from the WDN survey", Occasional Paper 1503, Banco de España.

5 See Font, P., M. Izquierdo and S. Puente (2015), "Real wage responsiveness to unemployment in Spain: Asymmetries along the business cycle", IZA Journal of European Labor Studies.

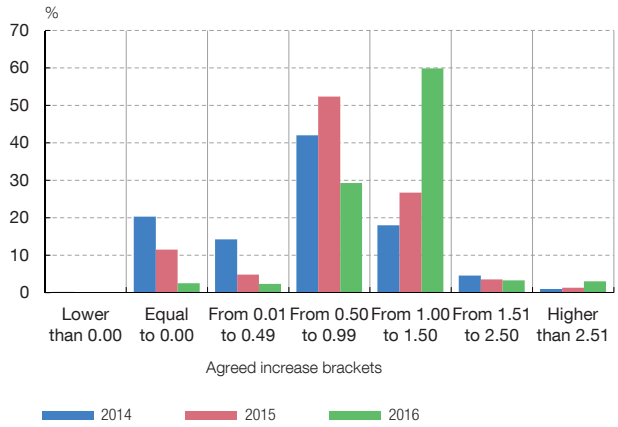
1 UNIT LABOUR COSTS IN SPAIN RELATIVE TO THE EURO AREA



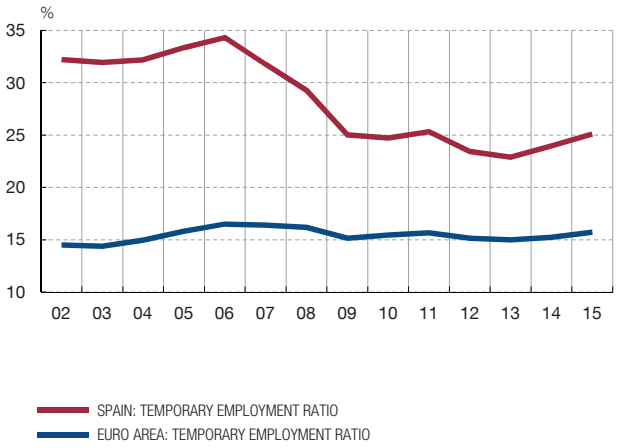
2 REAL WAGES. MARKET ECONOMY (a)
Year-on-year rates



3 DISTRIBUTION OF EMPLOYEES BY AGREED WAGE INCREASE (b)



4 TEMPORARY EMPLOYMENT RATIO (c)



SOURCES: Eurostat, INE and Ministerio de Empleo y Seguridad Social.

a QNA nominal compensation per employee deflated by the CPI or the CPI excluding unprocessed food and energy. Rates are calculated on seasonally adjusted series.
b 2016, with information to March.
c Temporary employees as a proportion of total employees, calculated with Q2 data for each year.

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sectoral level, in which the change in the temporary employment ratio is related to employment growth, would suggest that this recent increase in temporary hires matches — on historical patterns — the behaviour expected in an expansionary period, without there being any discernible recent change that may be attributed to the various legal amendments made in recent years.

… while the pace of permanent job destruction has been checked

The recent increase in temporary hires is linked to the rise observed in unemployment outflows towards temporary employment, in a setting in which the flows towards permanent employment have risen slightly. And no significant increase been seen in conversions of temporary contracts into permanent ones, the latter having moved on a clearly declining course since the start of the crisis and, in the more recent period, held at low levels. Nonetheless, a better performance has been seen in permanent employment destruction flows, which eased in 2015 to levels similar to those observed pre-crisis. Conversely, temporary employment destruction remains at high levels.

Further measures are therefore needed to quicken the decline in unemployment and reduce the weight of temporary employment

Reducing unemployment will require additional measures which, firstly, should enable firms to opt for aligning working conditions to their specific situation and to reinforce firms' internal flexibility, in line with the labour market institutions existing in other European countries. Furthermore, the attractiveness of permanent hiring should be increased, preventing an excessive protection of this type of employment from ultimately acting as a deterrent to the creation of stable jobs. Finally, active policies should contribute to enhancing the employability of those workers who have been unemployed for a lengthy period and who have lower skills than those required by firms. Here, it is vital to improve the link between active and passive policies, to modernise the public employment services and to increase the resources available per person in active policies for the unemployed. In particular, it would be desirable to re-launch vocational training activities which, in comparison with other European countries, are relatively scant in Spain, as opposed to the high weight of hiring incentives, whose effectiveness is usually limited.[6] In addition, a rigorous assessment should be made of the different measures that may help steer resources towards the most effective policies.

3.2 FISCAL CONSOLIDATION

In the fiscal policy arena, there was a deterioration in the structural budget deficit in 2015…

According to the latest Excessive Deficit Protocol (EDP) notification, the Spanish general government sector posted a deficit of 5.1% of GDP, against 5.9% the previous year. This reduction was due exclusively to the cyclical improvement in the economy, whereas the structural primary budget deficit, which measures the fiscal policy stance, increased by 1 pp of GDP, and the total structural deficit was close to 3% of GDP, according to the European Commission's latest estimates. The year 2015 thus saw an interruption in the contractionary budgetary policy stance observed from 2010 to 2014, when the structural deficit improved by 5.2 pp of GDP (see panel 1 of Chart 1.7). The strong rate of increase in output along with a highly favourable deficit-debt adjustment[7] enabled the still-high budget deficit to be offset, thereby placing the public debt/GDP ratio at 99.2% (99.3% in 2014) (see panel 2 of Chart 1.7).

…which prompted significant slippage by the budget deficit from the target set by the European authorities

These developments entailed significant non-fulfilment in 2015, of close to 1 pp of GDP, of the budget deficit target of 4.2% set by the European authorities under the Excessive Deficit Procedure of the Stability and Growth Pact. By sub-sector (see panel 4 of Chart 1.7), the slippage was due to bigger deficits relative to the targets for the regional governments (1 pp) and the Social Security system (0.7 pp), which were partly offset by a better-than-expected outturn for central government (0.2 pp) and local governments (0.4 pp). The failure of the regional governments to meet targets was across the board, since only three of them fulfilled the objectives set. In terms of components (see panel 3 of Chart 1.7), comparison between the 2015 data and the estimates provided in the general government budgetary plan sent by the Government to the EC in September 2015 shows that the deviation of the deficit was due essentially to higher-than-forecast (by 1.4 pp of GDP) growth in public spending.

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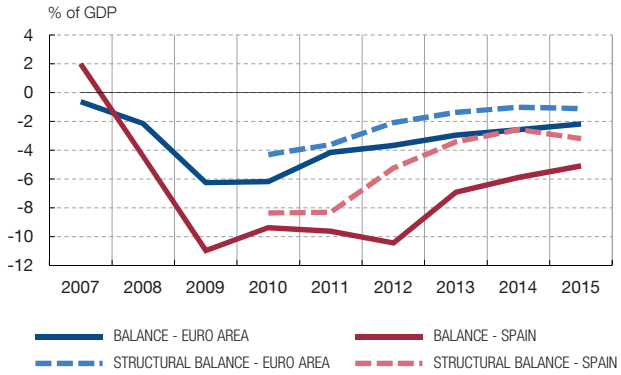
6 See Arranz, J.M., C. García Serrano and V. Herranz (2013), "Active labour market policies in Spain: A macroeconomic evaluation", International Labour Review.

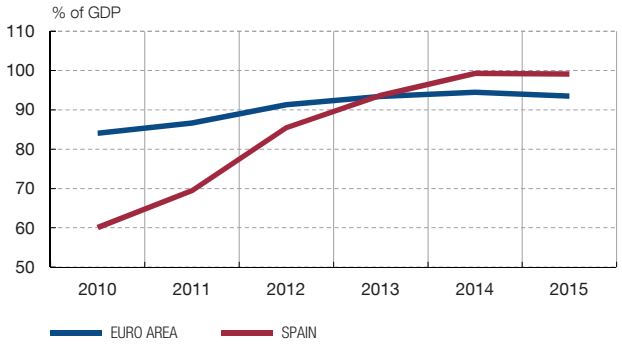
7 The deficit-debt adjustment allows general government deficit data to be reconciled with those relating to changes in the debt ratio. Specifically reflected in this adjustment are, along with the operations that do not affect the deficit but do bear on government debt, the need to finance the net acquisition of financial assets. In 2015 there were net sales of financial assets totalling €16.5 billion, providing for a reduction of 1.5 pp of GDP in the debt ratio. Specifically, there were repayments relating to the loans granted in previous years through the European Financial Stability Fund, and to the Electricity Deficit Amortisation Fund and the Fund for the Orderly Restructuring of the Banking Sector. Moreover, some financial assets were disposed of, including most notably the partial privatisation of AENA. For further details see M. Delgado, B. García, L. Gordo and RF. Martí (2016), "La evolución de la deuda pública en España en 2015", Boletín Económico, May, Banco de España.

GENERAL GOVERNMENT BALANCE AND DEBT CHART 1.7

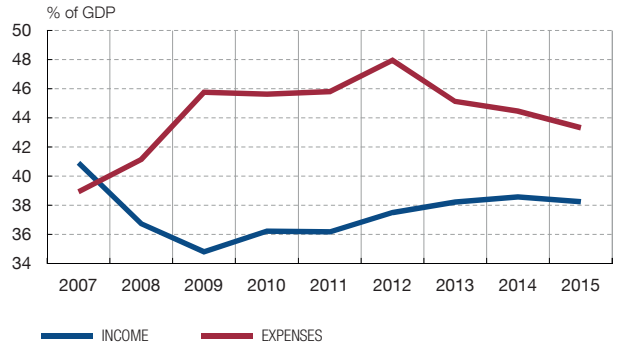
1 BALANCE AND STRUCTURAL BALANCE (a)



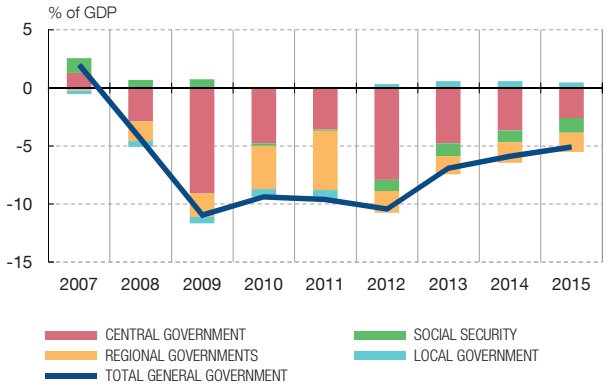
2 EDP DEBT



3 GENERAL GOVERNMENT REVENUE AND EXPENDITURE



4 GENERAL GOVERNMENT BALANCE BY SUB-SECTOR



SOURCES: AMECO and Banco de España.

a Actual balance, cyclically adjusted and net of temporary measures.

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Correcting the fiscal imbalance is a priority …

The challenges the current fiscal imbalance poses for the economy as a whole, even under the prospect of its gradual reduction, should not be minimised.[8] High volumes of deficits and public debt sustained over prolonged periods are usually associated with higher interest rates and, therefore, with lower rates of private investment and growth in the medium term. In particular, the sustainability of a high level of public debt normally requires the recurrent running of significant primary budget surpluses; that may adversely affect the economy's potential growth if, for example, fiscal policy should entail tax levels unfavourable to growth or lower levels of productive spending. Moreover, high deficit and public debt levels restrict the room for manoeuvre available to fiscal policy to play a countercyclical role, a lever which is particularly valuable within a monetary union. Also, the need to resort repeatedly to the financial markets to roll over a high volume of debt and the current deficit raises the vulnerability of the economy to potential adverse reactions in investor sentiment, as has been evidenced in the successive episodes of tightening experienced by several European sovereign debt markets since 2010.

8 See Box 4.2 of the Banco de España 2013 Annual Report.

... that requires the definition of a detailed medium-term consolidation programme and the strict application of the preventive and coercive mechanisms of the Budgetary Stability Law

The scale of the adjustments needed to restore health to public finances remains significant.[9] That highlights the need to define a medium-term consolidation path detailing the measures to ensure the fulfilment of the fiscal targets covering each and every one of the different tiers of government (central government, Social Security system, regional government and local government), and that is anchored in a prudent forecast of macroeconomic developments and of public revenue. In this respect, the European Commission issued a recommendation on 18 May calling for a structural improvement in the Spanish overall general government balance of 0.25% and 0.5% in 2016 and 2017, respectively, which, according to the EC, would make for deficits of 3.7% and 2.5% of GDP in those years. Accordingly, Spain's exit from an excessive deficit position would be put back by one year to 2017.

In parallel, the use of all the preventive and coercive mechanisms of the Budgetary Stability Law across the general government sector as a whole must be ensured.[10] Further, in a setting in which central government mechanisms to support regional government liquidity have become widespread, it is vital that the explicit elements of conditionality be strictly applied to the budgetary actions of the tiers of government concerned.[11]

Fiscal consolidation should be accompanied by a design of the main budgetary elements that is more conducive to activity and employment …

In a scenario in which the budgetary consolidation process is prolonged, the composition of the adjustment takes on particular importance, paving the way for public finances to make a greater contribution to the economy's potential growth. In this respect, progress must continue to be made in the rationalisation and efficiency of public spending, considering a review of the basket of taxes that will allow the revenue needed to finance the desired level of public spending to be obtained in a stable fashion (see panel 3 of Chart 1.7). Experts' and international agencies' proposals suggest there is scope for considering a change in the tax mix, according greater weight to indirect taxation, and a further rationalisation of the wide range of deductions, credits and rebates that erode tax-raising capacity.

… and by a strategy with which to tackle the challenges posed by population ageing for public finances

From a medium and long-term perspective, it will be a priority to address the challenges arising from the impact of population ageing on public finances and, in particular, on the pension system. The reforms introduced in recent years are along these lines, including as they do a progressive raising of the retirement age, the definition of a sustainability factor, which links the initial pension to future developments in life expectancy, and a new pension indexation mechanism, making pensions conditional upon the financial equilibrium of the system.[12] These reforms have substantially shored up the system's sustainability, although tailoring arrangements to the needs of a progressively older population poses notable challenges. Specifically, in the absence of further modifications to the system's revenue, the adjustment mechanism operates chiefly through the average pension[13] which, given significant growth in the dependency ratio, raises the need to analyse the potential incorporation of other sources of financing into the system, to define the concepts that are financed through the system and, where appropriate, to develop the insurance and saving

9 An approximate idea can be had of the challenges outstanding using a simple accounting simulation exercise based on the general government budget constraint. If it is assumed that the general government primary balance will, from 2016, every year, stand at 2% of GDP (as opposed to the primary deficit of 2% observed in 2015) and nominal GDP growth will be 3.5%, the public debt/GDP ratio would not fall below 30% before 2030.

10 See P. Hernández de Cos and J. Pérez (2013), "The new budgetary stability law", Boletín Económico, April, Banco de España.

11 See Delgado, M., C. González and J.J. Pérez (2016), "Regional government access to market funding: international experience and recent developments", Economic Bulletin, February, Banco de España.

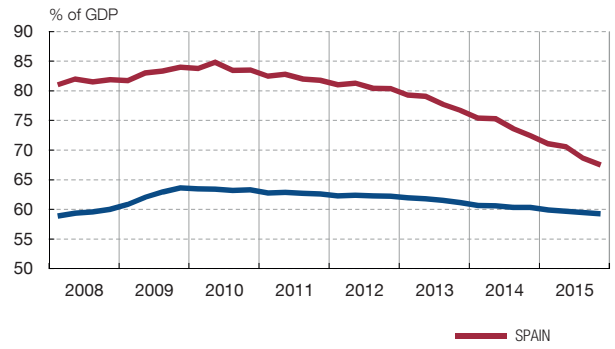
12 See Ramos, R. (2014), "The new revaluation and sustainability factor of the Spanish pension system", Economic Bulletin, July, Banco de España.

13 Sánchez, A.R. (2014), "The automatic adjustment of pension expenditures in Spain: an evaluation of the 2013 pension reform", Working Paper 1420, Banco de España.

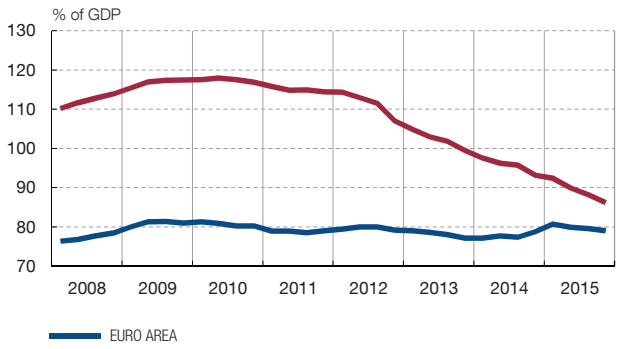
FINANCIAL POSITION OF HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS AND INTER-COMPANY CREDIT REALLOCATION

CHART 1.8

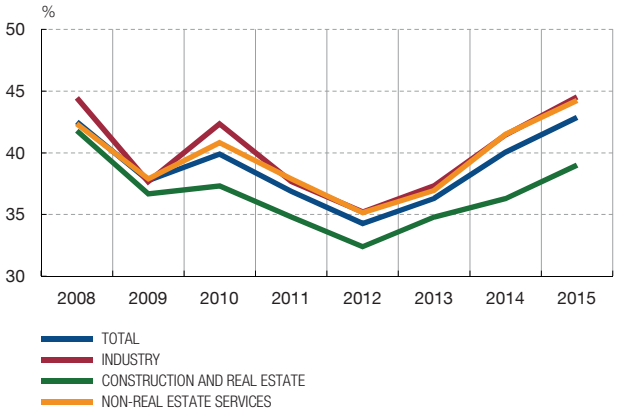
1 DEBT RATIO. HOUSEHOLDS



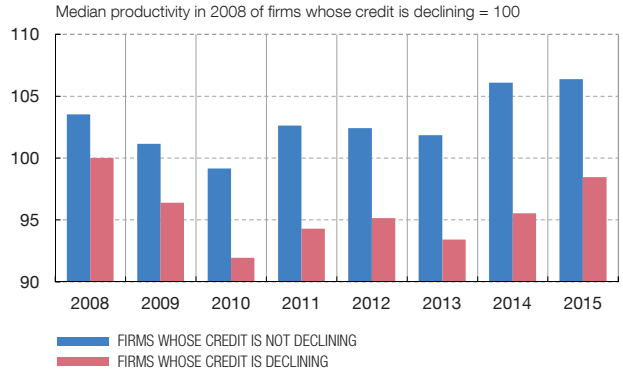
2 DEBT RATIO. NON-FINANCIAL CORPORATIONS



3 PERCENTAGE OF FIRMS WHOSE CREDIT IS NOT DECLINING



4 TOTAL FACTOR PRODUCTIVITY



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 median productivity, calculated as the weighted average of the sectoral medians, where weights are assigned on the basis of the sectoral gross value added of each sector of activity. The resulting figure is normalised taking as a reference the 2008 value of the median productivity of firms whose credit is declining.

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mechanisms — such as those set in place in other countries — that will help complement unfunded public pensions in the future. The new system may also increase uncertainty over the future level of pensions, whereby its implementation should be as transparent as possible, in accordance with the mechanisms envisaged by the Law, so as to provide citizens with the necessary information about their future pension and to enable individuals to take optimal saving decisions for retirement during their working life.

3.3 PRIVATE-SECTOR DELEVERAGING

The reduction in the debt ratio of households and firms continued in 2015, underpinned to a greater extent by higher income …

Spanish household and corporate debt ratios continued to decline in 2015, falling to 69% and 88% of GDP, respectively (see panels 1 and 2 of Chart 1.8). As a result, the cumulative declines in these ratios from their mid-2010 peak were 17 pp and 32 pp, respectively. Also, the gap between debt levels in Spain and in the euro area has narrowed to 8 pp and 7 pp, respectively, suggesting that private-sector deleveraging is at an advanced phase. This process is, moreover, progressively becoming less costly, as it is underpinned to a lesser extent than in the past on negative net financing flows and more on increases in income.

… which proved compatible with a pick-up in the flow of new financing operations

In 2015 there was an increase in new financing flows to households and non-financial corporations which, along with the reduction in the interest burden, proved conducive to buoyant expenditure. The Banco de España Central Credit Register (CCR) reveals that the proportion of firms not subject to deleveraging processes increased in 2015 for the third year running, to stand at close to 43%, almost 9 pp up on the 2012 figure. The net flow of financing channelled by these companies increased by almost 1 pp relative to GDP (see panel 3 of Chart 1.8). Likewise, in the case of households, there was a rise in the proportion of individuals whose debts held steady or increased, and in the net flow of financing raised by them.

The decline in the aggregate outstanding balance of lending to corporations has been accompanied by significant inter-sectoral and intra-sectoral shifts

The slowdown in the pace of the contraction in bank lending to firms (by 5.2 pp to 1.6%) has been extensive to all sectors of activity, although the decline continued to be sharper in sectors linked to the real estate market. In the industrial sector, the outstanding balance of loans fell by 1.6%, while in construction and real estate services, the declines continued to be notable (11.8% and 10.4%, respectively), albeit lower than those in 2014. There were also signs suggesting that credit flows tend to be routed increasingly towards more productive firms with a sounder financial position (see panel 4 of Chart 1.8).

Credit institutions' improved solvency and liquidity have also contributed to the pick-up in financing to households and firms…

In the case of credit institutions, the improvement in their financial position has also contributed to the pick-up in the flow of financing to households and non-financial corporations. Deposit institutions thus continued to shore up their solvency in 2015, whereby their CET1 (highest quality capital) ratio rose to 12.7% (14.5% in terms of the total ratio), after increasing notably during the year, standing clearly above the required regulatory minimum levels. In a setting of abundant liquidity, prompted by the Eurosystem's various expansionary measures, these institutions continued to finance themselves comfortably.

… although Spanish credit institutions show low profitability

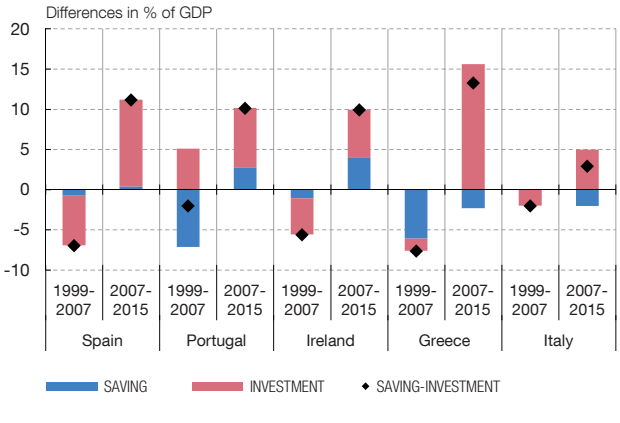
That said, pressures on the profit and loss account were reflected in a 12.8% decline in consolidated profit attributable to the group, meaning that the return on equity (ROE) fell (from 6.9% to 5.6%, also owing partly to the increase in own funds), following the same trend as in the rest of the euro area. There are several factors exerting downward pressure on banks' profitability, especially in business in Spain. Firstly, low interest rates are constraining net interest income. Secondly, compounding this situation is the fact that the outstanding balance of credit continues to decline, albeit at increasingly lower rates. Finally, non-performing loans and foreclosures, which do not generate interest, make up a significant but declining part of bank balance sheets.[14]

There is still a portion of agents in a vulnerable financial position

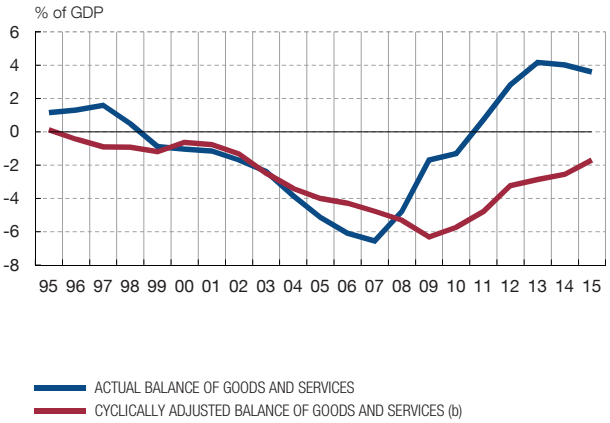
The economic recovery, which has been accompanied by growth in income and a reduction in unemployment, along with the decline in interest rates, has had a favourable effect on the financial position of indebted households and firms. The effect has been comparatively more marked in those segments subject to a greater degree of financial pressure. The reduction in these agents' debt has benefited from the use of refinancing and, where appropriate, restructuring agreements, to which the improvements made to the successive regulatory changes in bankruptcy law have contributed (see Box 4.3 of this Report). Even so, the proportion of agents subject to high financial pressure still stands above pre-crisis levels, signifying a factor of vulnerability for the economy as a whole.

14 In particular, last year, non-performing loans in Spain fell across the board at a greater pace than the previous year, whereby the ratio of these assets to resident private-sector credit declined to 10.1%, at the close of the year, compared with the high of 13.6% two years earlier.

1 CHANGES IN THE NATION'S SAVING AND INVESTMENT (a)



2 BALANCE OF GOODS AND SERVICES
2010 constant prices



SOURCES: Banco de España, INE and IMF.

a Investment depicted with sign changed.
b Trade balance had both the Spanish economy and its main trading partners grown at a similar rate to the potential GDP rate.

3.4 REDUCING THE NET DEBTOR POSITION VIS-À-VIS THE REST OF THE WORLD

Progress in the external balance continued in 2015, both in terms of the nation's overall lending capacity and, to a lesser extent, of the international investment position. In the first instance, the balance has improved by around 11 pp of GDP since 2007, essentially as a result of the fall in investment – residential investment in particular – during the most acute phases of the crisis, although in the most recent period a pick-up in national saving has been observed (see Chart 1.9).

The recent recovery in national saving is allowing investment to be financed and recurrent external surpluses to be obtained

Since the start of the crisis there has been a structural improvement in the trade balance of goods and services…

The recent attainment of external lending capacity has a structural component that is reflected in the improvement in the cyclically adjusted balance of goods and services trade (see Chart 1.9). As analysed in detail in Chapter 2, this improvement in the structural component is related to the adjustment of labour costs and the easing in financial costs. In particular, the competitive adjustment made by the Spanish economy over these years has been conducive to an increase in firms' propensity to sell their products abroad and to their subsequent capacity to entrench.

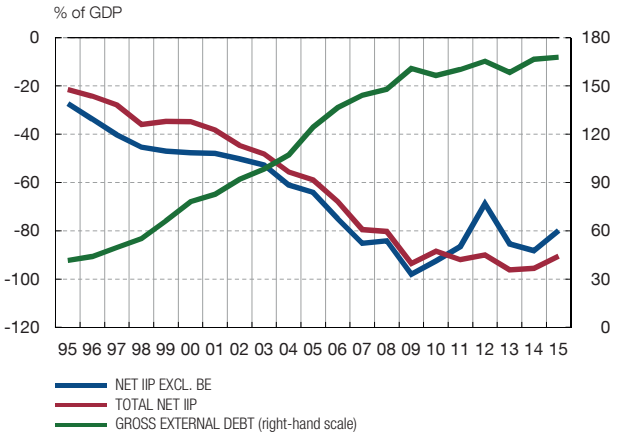
... but the net debtor position vis-à-vis the rest of the world, though it has begun to decline, is holding at very high levels and its correction will require further gains in competitiveness

Despite the reduction in private debt, Spain still has very high external debt, which is a significant factor of vulnerability when set against potentially adverse developments on international markets. Thus, at end-2015 the net international investment position (net IIP) stood at 90.5% of GDP, a very high figure when compared with other euro area countries and with other advanced economies, but one which entrenches the declining trend initiated the previous year. That said, the improvements in lending capacity have not been reflected in a reduction on the same scale in the external debit balance. That is due to the negative contribution of valuation effects and other adjustments, which showed the increase in the price of external liabilities derived from international investors' greater confidence in the Spanish economy's assets. There have also been changes in the composition of external liabilities, in terms of their callability (a shift towards a lesser weight of debt securities), the issuing institutional sector (greater

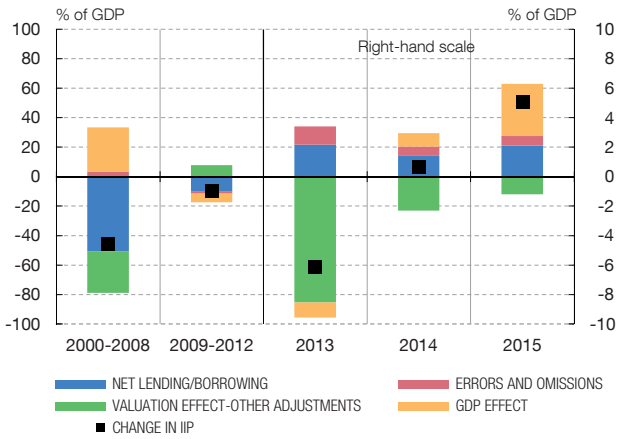
NET EXTERNAL DEBT POSITION OF THE SPANISH ECONOMY

CHART 1.10

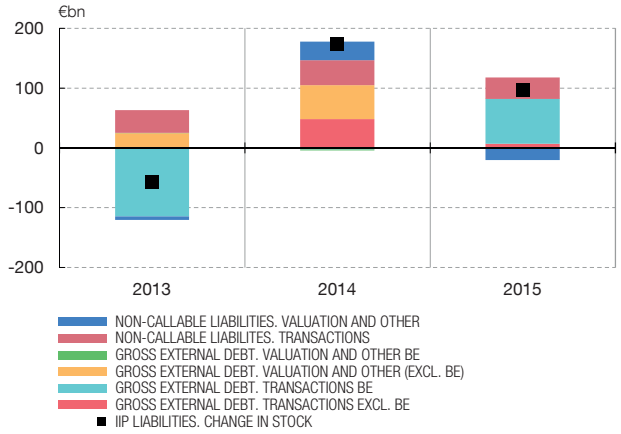
1 NET IIP AND GROSS EXTERNAL DEBT POSITION (a)



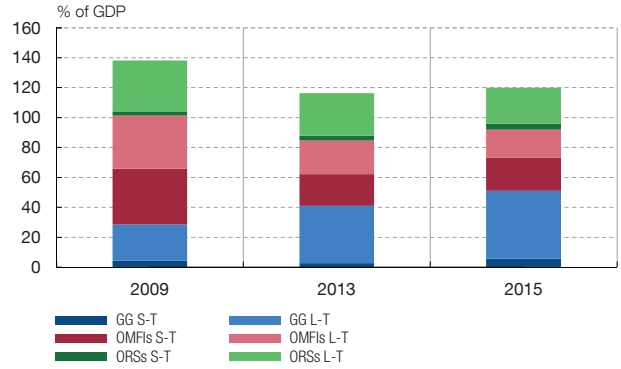
2 DETERMINANTS OF THE CHANGE IN THE NET IIP (b)



3 BREAKDOWN OF THE CHANGE IN EXTERNAL LIABILITIES (c) (d)



4 STRUCTURE OF GROSS EXTERNAL DEBT BY INSTITUTIONAL SECTOR AND ISSUANCE MATURITY (e) (f)



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 in the future payments of principal, interest or both. It therefore includes: debt securities, special drawing rights assigned, and deposits, loans, trade credit and other liabilities.

b 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, assets and/or liabilities reclassification, and changes in residence of holders or issuers of financial assets and liabilities.

c Non-callable liabilities include equity capital, financial derivatives and reserves. Callable liabilities coincide with gross external debt.

d The transactions in question are financial transactions between residents and non-residents.

e GG - general government; OMFI - Other Monetary Financial Institutions; ORS - Other Resident Sectors, which include non-monetary financial institutions, non-financial corporations, and households and non-profit institutions serving households.

f S-T and L-T refer to the classification of the term of issue depending on whether the maturity is short-term or long-term, respectively.

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proportion of securities issued by the public sector) and the maturity of the assets (longer average maturity), which, overall, may contribute to mitigating some of the risks posed by such a high volume of external liabilities (see Chart 1.10). All told, gross external debt, which encompasses callable liabilities, remains at a very high level (167.9% of GDP at end-2015). Accordingly, the correction of high external debt will require running current account surpluses sustainedly over a prolonged period, in which connection it will be vital to build on and entrench the gains in competitiveness attained in recent years.

POTENTIAL GROWTH AND BREAKDOWN OF PRODUCTIVITY

TABLE 1.2

POTENTIAL GROWTH AND CONTRIBUTIONS (a)

	2001-2007	2008-2014	2015-2025
Potential Growth	3.0	0.6	1.0
Contributions			
Employment	1.6	-0.2	0.0
Hours per employee	-0.2	-0.1	-0.1
Employees	1.8	-0.1	0.1
Population between 15 and 64	1.0	0.0	-0.3
Participation rate	0.9	0.3	0.1
NAIRU-PC	-0.1	-0.4	0.3
Capital	1.6	0.6	0.4
TFP	-0.1	0.2	0.6

BREAKDOWN OF PRODUCTIVITY GROWTH (b)

	Firm level			Sector level		
	1995-2007	2008-2013		1995-2007	2008-2013
Intra-company	7%	-5%	Intra-sector	-115%	186%
Across companies	-107%	105%	Across sectors	15%	-86%

SOURCES: Central de Balances del Banco de España and P. Cuadrado and E. Moral-Benito (2016), *Potential growth of the Spanish economy,* Occasional Papers 1603.

a The figures show the average growth for the period.

b Aggregate productivity can be expressed as the weighted average of each company's (or each sector's) productivity, with weightings given by the weight of each company (or each sector) in economic activity. On the basis of this weighted average, productivity growth can be broken down into a term that shows the sum of the growth in productivity of each company weighted by the weight of each company in economic activity (intra-company term), and into another term that refers to the sum of the changes in the weights of each company weighted by their productivity levels (inter-company term). That is to say, the intra-company (or intra-sector) term quantifies the contribution of companies' (or sectors') productivity growth to aggregate productivity growth; the inter-company (or inter-sector) term shows the contribution of the reallocation of resources across companies (or sectors) given their initial productivity. For further details see L. Foster, J. Haltiwanger and C. Krizan (2006), "Market selection, reallocation, and restructuring in the US retail trade sector in the 1990s", *The Review of Economics and Statistics,* 88 (4), pp. 748-758. In the 1995-2007 period, the percentages total -100% because productivity growth was negative.

3.5 IMPROVING PRODUCTIVITY

Potential growth fell significantly during the crisis, as a result of the lesser contribution of the productive factors…

The available estimates of growth in the Spanish economy's potential output show a reduction from approximately 3% in the 2001-2007 period to around 0.6% on average from 2008 to 2014.[15] In the previous upturn, the increase in potential growth was based on the accumulation of productive factors, with a slightly negative contribution of total factor productivity (TFP) (see Table 1.2). There was a turnaround in this pattern with the onset of the crisis, giving rise to a lesser contribution of capital and a negative contribution of employment derived from the population decline – caused by net emigrant outflows during this period and progressive population ageing – and from the increase in structural unemployment. Conversely, the contribution of TFP turned round to become slightly positive.

…although there was a slight pick-up in TFP, based above all on a better reallocation of resources across firms…

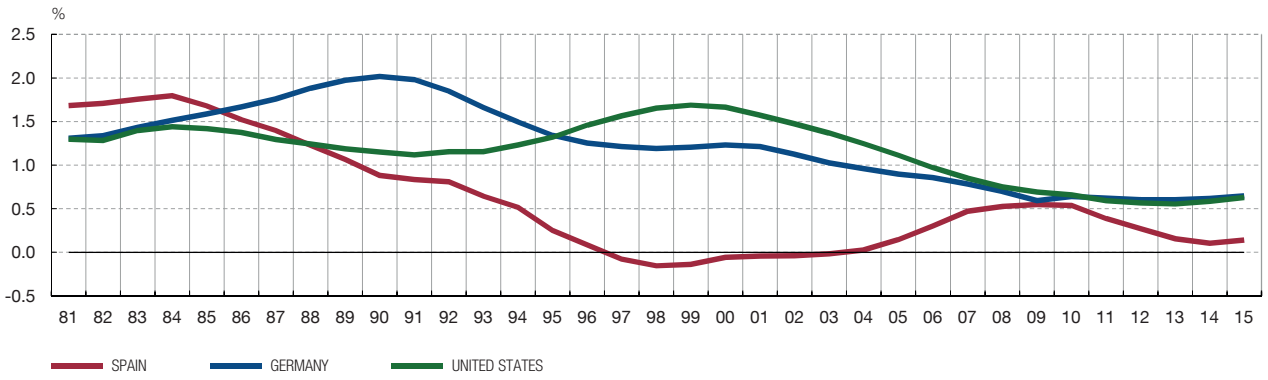
For illustrative purposes, aggregate productivity growth can be broken down, first, into the contribution stemming from firms' average productivity, which is influenced by intrinsic improvements in worker and entrepreneurial skills, business organisation and technology; and further, into the contribution derived from the reallocation of resources across firms with different levels of productivity.[16] In Spain's case, this second factor has proven to be the most significant in explaining both the low growth of TFP in the previous upturn and the recovery observed in the recent period (see Table 1.2). This improvement would appear to be related above all to the destruction of the least efficient firms during the recession and the gain in market share of those that are most productive within each sector, whereas sectoral reallocation would be playing a limited role.

15 See Moral, E. and P. Cuadrado (2016), "Potential growth of the Spanish economy", Occasional Paper 1603, Banco de España.

16 That is to say, this channel explains an increase in TFP derived from a reallocation of resources that raises the weight of firms or sectors that show higher relative levels of productivity.

RECOVERY IN PRODUCTIVITY AND IMPROVED SECTORAL COMPETITION CHART 1.11

TOTAL FACTOR PRODUCTIVITY GROWTH



SOURCES: European Commission, *Competitiveness Research Network* of the ECB and Banco de España.

Improving potential growth in the economy in the medium term will hinge crucially on successfully achieving greater dynamism in productivity…

In any event, TFP in the Spanish economy is still holding at significantly lower growth rates than those of the other developed countries, such as the United States or Germany (see Chart 1.11). Higher productivity is crucial for attaining higher potential output growth rates in the medium term, given the adverse effect of the progressive ageing of the population on such growth. This should be a primary goal of the reforms to product and labour markets (see Box 1.3).

… suggesting the need for reforms generating greater efficiency in certain sectors

Converging on the productivity levels of those developed economies showing a better performance in this area therefore requires promoting an increase in firms' average productivity, which firstly calls for better regulation of certain sectors whose functioning is essential for business activity (see Chapter 4 of this Report). In this respect, some reforms have been approved in recent years but others are still pending. Hence, in the case of the electricity industry, measures have been adopted to contain the tariff deficit and a new interconnection with France has been opened, although the electricity price ultimately paid by firms and consumers continues to be high relative to other developed economies. The indicators available show greater regulatory constraints on other significant factors of production, such as transport and professional services.[17] These sectors also tend to evidence higher mark-ups in Spain than in other developed countries, and such mark-ups are expected to have increased over the course of the crisis.[18]

In this setting, it will be necessary to ensure the rigorous selection of infrastructure projects…

Infrastructure endowment and human and technological capital are also fundamental conditioning factors of business productivity. In the first instance, during the upturn prior to the crisis, Spain's volume of per capita public capital matched that of the euro area when in 1995 it was 15% below it. However, public investment has been one of the public spending items most affected by the ongoing reduction of the budget deficit. The need to continue pursuing fiscal consolidation will require a strict economic assessment of the different projects so that those with the greatest value-added may be selected.

17 See Mora-Sanguinetti, J.S. and M. Martínez (2014), "La regulación en el mercado de productos en España según los indicadores de la OCDE", Boletín Económico, diciembre, Banco de España.

18 See Amador, Di Comite, Fuss, Hagemejer, Montero and Soares (2015), "Price-cost margin dynamics and heterogeneity: Evidence from European firm-level data", forthcoming ECB Working Paper; and Soares (2016), "Price-cost margin and bargaining power: A cross-country analysis using firm-level data", forthcoming ECB Working Paper.

… to promote the accumulation of human capital,…

In the case of human capital, there has been a most significant improvement in recent decades, although room remains for convergence in terms of the labour force's educational attainment in comparison with that of other European countries. In particular, the Spanish education system is notable for its high early school leaver rate, the under-use of vocational training arrangements and a low level of quality.[19] The economic crisis has, moreover, led to a concentration of job destruction among the least skilled and, in this way, it has substantially raised the degree of educational mismatch between labour supply and demand, which might hamper the employability of the least skilled (see Box 1.2).

… technological capital…

As regards technological capital, Spain is again characterised by lower levels than other developed countries. Specifically, the stock of technological capital as a percentage of GDP stood at 36% below the euro area average in 2013 (see Chapter 4 of this Report). This situation would affect both the public sector and, above all, the private sector, and would concern aspects such as workers' relative training, the excessive weight of small firms, which usually have a lesser propensity to innovate, and the limited development of alternative financial channels, such as venture capital, which is widely used in other countries by technology-based start-ups. Spanish firms also have a limited technological absorption capacity, while the public research system is characterised by fragmentation and a lack of connectedness to the business system.

... improved institutional quality...

The quality of the institutional framework has also been shown to be significant for explaining cross-country productivity differences.[20] In this respect, the indicators proxying the legal and administrative framework in which the public and private sectors interact show that Spain has considerable room for improvement in this area.[21] According to various statistical information sources, the efficiency indices for the Spanish legal system are below those of other comparable countries, while our litigation rate is higher[22], highlighting the need to identify the factors that lie behind these developments and to redress them.

… and to revise the regulations that hamper business start-ups and growth

It is also essential to build on the recent improvement observed in the allocation of resources across firms. In this connection, access by productive firms to financing for their investment projects should be ensured, while those aspects of the regulations that hamper the growth of the most efficient firms should be revised. In recent years there has been some progress here with the approval and implementation of the Law on the Guaranteeing of Market Unity, the Law on the Common Administrative Procedure and the added flexibility

19 For instance, the OECD's PIAAC (2013) results (http://www.mecd.gob.es/inee/Ultimos_informes/PIAAC.html) highlight the Spanish population's poor maths skills, which range across the board among individuals with different levels of educational attainment, including higher education.

20 See, for example, R.E. Hall and C.I. Jones (1999), "Why do some countries produce so much more output per worker than others?", The Quarterly Journal of Economics, 114, pp. 83-116, and E. Helpman (Ed.) (2008), Institutions and economic performance, Harvard University Press, Cambridge, Massachusetts. For the Spanish case, M. García-Santana, F. Moral-Benito, J. Pijoan-Mas and R. Ramos (2016), "Growing like Spain: 1995-2007", Banco de España Working Paper 1609, find that the deterioration in resource allocation in Spain observed from 1995 to 2007 was more severe in sectors where the incidence of government regulations is greater.

21 For example, the indicator of the quality of public institutions constructed by the World Economic Forum as part of its "Global competitiveness report 2015-2016" ranks Spain 20th out of 28 European Union countries. This indicator is partly based on a questionnaire to firms and includes information on ownership rights and their protection, ethical and corruption-related issues, judicial independence, public sector efficiency or security, among other aspects. (For more detailed information see http://reports.weforum.org/global-competitiveness-report-2015-2016//). Similar results for Spain are obtained from the World Bank's "The Worldwide Governance Indicators" (see htpp://info.worldbank.org/governance/wgi/index.aspx#home).

22 See Mora-Sanguinetti, J.S. (2016), "Evidencia reciente sobre los efectos económicos del funcionamiento de la justicia en España", Boletín Económico del Banco de España, January.

to insolvency proceedings.[23] However, as may be inferred from the regional business climate indicators, Spain continues to face greater difficulties than its peers regarding business start-ups. Further, a wide range of regulations remain in place that distort company growth and which, therefore, directly influence the reallocation of resources across firms and sectors (see Chapter 4 of this Report).

3.6 PROGRESS PENDING IN THE CONSTRUCTION OF EMU

The euro area faces a complex scenario…

Beyond its domestic conditioning factors, the Spanish economy depends crucially on international developments, in particular those relating to the euro area. In this respect, the euro area faces a complex scenario, characterised by an outlook of moderate growth and low inflation and by still-high unemployment and debt levels in certain countries. The challenges posed for the functioning of the single market by the absorption of migratory flows, the UK referendum on the EU and security in the face of the terrorist threat are additional sources of uncertainty.

… requiring all economic policy strands to pull together…

To ensure the sustainability of the recovery and improve the medium-term outlook, economic policy measures on various fronts will be required. As regards monetary policy, the stimulus measures adopted by the ECB are allowing the economy's financing conditions to be relaxed and should contribute to quickening the progressive return by inflation to rates more compatible with the medium-term objective. Fiscal policy should use the headroom afforded it by the Stability and Growth Pact to adopt measures promoting activity and boosting medium-term growth. It is also vital to ensure the continuity of reform momentum aimed at improving the competitive environment and boosting the efficient working of the product and factor markets of those euro area economies departing from a position of relative disadvantage in these areas.

…and resolute progress in strengthening the institutional framework of EMU

In parallel, the member countries should continue making progress in strengthening the institutional framework of EMU. As noted in the June 2015 report "Completing Europe's Economic and Monetary Union" (known as the Five Presidents' Report), despite the notable headway made, EMU still rests on incomplete institutional architecture. Accordingly, it is necessary to continue moving towards greater economic, financial, fiscal and political integration.

In the short term, mechanisms will be needed to achieve greater economic policy coordination...

The Five Presidents' Report proposes a series of objectives deemed attainable in the short term that would not require amendments to the Treaty on the Functioning of the European Union. Thus, for instance, greater structural convergence is called for, including also more efficient labour markets generating better-quality jobs, and better-coordinated euro area economic policies. Along these lines, the European Commission has proposed creating national agencies entrusted with monitoring competitive imbalances and establishing a European Fiscal Council, which will be consultative in nature and should act within the multilateral fiscal surveillance framework, providing an independent assessment of the application of the Stability and Growth Pact rules by the EC and the EU Council. Ensuring the effectiveness of the new institution will, before its start-up in mid-2016, require that its institutional independence be reinforced and that certain aspects of its mandate be clarified, such as its role in the assessment of the euro area aggregate fiscal policy stance. Likewise, equipping the competitiveness councils with a European dimension would

23 Law 39/2015 of 1 October 2015 on the Common Administrative Procedure for General Government, Law 9/2015 of 25 May 2015 on urgent matters in respect of insolvency and Law 25/2015 of 28 July 2015 on the second-chance mechanism, reduction of the interest burden and other social measures. Earlier, the bankruptcy legislation approved in 2003 had been amended on numerous occasions as a result of the crisis. Specifically, there have been changes in the wake of Royal Decree-Law 3/2009, Law 38/2011, Law 14/2013, Royal Decree-Law 4/2014, and Royal Decree-Law 11/2014.

provide for greater coordination of structural policies and a more harmonious adjustment of the imbalances still in place in the area.

…and to promote financial integration, completing the Banking Union and boosting the Capital Markets Union

In the short run, a further priority is to consolidate mechanisms allowing for a more efficient allocation and greater geographical diversification in terms of the risks assumed by financial institutions, so as to improve the area's ability to absorb potential asymmetric shocks. In this respect, the completion of the Banking Union should ensure a level playing field for all the member countries' banking systems, which will require, among other instruments, pooled public funds for the resolution of vulnerable institutions once private funds have been depleted, and the establishment of a European Deposit Insurance Scheme. The EC project for a Capital Markets Union is a further step, with more effective regulations, for achieving true financial integration geared to increasing the geographical diversification of portfolios and promoting firms' access to sources of financing other than bank lending under competitive conditions.

In the medium term, more resolute progress towards a Fiscal Union must be on the agenda

Beyond the short-term priorities, perseverance will be important for bringing about the medium-term objectives identified in the Five Presidents' Report. Hence, as regards Economic Union, structural convergence must eventually be more coercive in nature, setting standards or common minimum levels that countries have to meet in areas as significant as labour markets and tax systems. Fulfilling these greater economic policy demands will provide for the setting in place of common fiscal mechanisms, which will be entrusted with macroeconomic stabilisation functions that limit the influence and mitigate the economic and social effects of future crises in the area.

Notable among the more temporary factors underpinning activity and employment in 2015 were the additional decline in oil prices and the impulse from demand-side policies. These policies contributed to sustaining growth last year thanks to the introduction by the ECB of fresh monetary stimuli and to a fiscal policy stance that turned expansionary following the adoption of certain tax cuts and of an increase in consumption and public investment. Monetary policy also influenced the depreciation of the euro, which exerted an invigorating effect on companies' sales outside the euro area, especially in the first half of the year. Lastly, the fall-off in the pace of growth of world trade, especially that originating in connection with the emerging markets, was a factor that operated in the opposite direction and reduced activity.

Table 1 presents the results of an exercise approximately quantifying the effect of the above factors on GDP and inflation in 2015. In this connection, the MTBE (Quarterly Macroeconomic Model of the Banco de España) is used to simulate the effect that changes that were not anticipated in mid-2014 in the monetary policy stance, fiscal policy, oil and other commodities prices, and global demand have had on the two foregoing variables. Around that juncture, there was a fresh fall in oil prices, the ECB decided to adopt various additional expansionary measures and the Spanish government announced personal income and corporate income tax rate cuts for 2015. The model represents the Spanish economy as a small, open country integrated into the Monetary Union and, therefore, these factors may be incorporated into the model as changes in the exogenous conditions that affect the equations explaining the behaviour of the different economic agents.

As analysed in detail in Chapter 3 of this Report, the monetary measures improved financial and credit conditions and contributed to depreciating the euro and to expanding the activity of our euro area trading partners, therefore affecting nominal expenditure. The set of discretionary fiscal policy measures has been proxied by the change in the cyclically adjusted primary public balance/GDP ratio, net of those measures of a temporary nature. In 2015, according to this indicator, a fiscal expansion of approximately 1% of GDP is estimated, and its effect on the macroeconomic variables is obtained by applying the average fiscal multipliers of the MTBE.

As regards the other two international factors, the fall in commodities prices affects the variables of the model not only via the reduction in production costs but also via the improvement in household disposable income, which boosts consumption and, consequently, employment and investment. The intensity of these channels depends on the initial level of the oil price which, in this simulation, has been set at €70 per barrel, which was the international market price prevailing as at mid-2014, compared with the average price observed in 2015, of €47 per barrel.[1] Lastly, the lower growth (down more than 2 pp) of world markets entails a decline in activity via the diminished demand for Spanish goods and services exports.

Of the four factors that may be considered as exogenous, the new monetary policy measures and the cut in the commodities prices exerted an estimated impact on GDP in 2015 of 0.6 pp in each instance, while the expansionary fiscal policy stance contributed around 0.5 pp. Conversely, the lower growth of world markets during the year subtracted 0.6 pp from the growth in activity. The net effect of the set of factors considered on economic growth last year is therefore expected to have been considerable, having reached an estimated magnitude of 1.1 pp. Furthermore, the lower-than-projected inflation in 2015 was chiefly determined by the decline in oil prices, which could only be offset in part by the fresh monetary stimuli, meaning that the negative effect, in net terms, on inflation was 1.6 pp.

1 For a detailed analysis of the effect that different starting levels of the oil price have on the impact of this variable on GDP and inflation, see Box 4.2 in Chapter 4 of the Banco de España 2014 Annual Report.

Table 1
EFFECT OF THE CHANGE IN THE EXOGENOUS ASSUMPTIONS SINCE MID-2014 ON GDP GROWTH AND INFLATION FOR 2015 (a)

	GDP	Inflation
Monetary policy	0.6	0.6
Fiscal policy (b)	0.5	0.2
Global demand	-0.6	-0.1
Oil and other commodities prices	0.6	-2.3
TOTAL	**1.1**	**-1.6**

SOURCES: European Commission and Banco de España.

a Simulation using the MTBE. The simulation has taken into account the fact that, around mid-2014, the strong decline in oil and other commodities prices began to become discernible. Also, the ECB announced far-reaching monetary policy measures around that time, such as the adoption of negative interest rates in the case of the deposit facility.
b In this case the effect has been calculated on the basis of the estimate for the change in the cyclically adjusted primary budget balance in 2015 (-1% according to the EC), and its impact on GDP and on inflation, drawing on the MTBE multipliers.

Table 1
UNEMPLOYMENT AND LONG-TERM UNEMPLOYMENT, AND DISTRIBUTION OF LONG-TERM AND VERY LONG-TERM UNEMPLOYMENT BY CHARACTERISTIC IN 2015

	Unemployment rate	Incidence of long-term unemployment	Incidence of very long-term unemployment
2006	8.5	25.7	13.0
2007	8.2	23.8	12.3
2008	11.3	21.5	9.9
2009	17.9	28.6	10.5
2010	19.9	42.6	17.0
2011	21.4	48.2	24.7
2012	24.8	52.4	29.9
2013	26.1	58.5	36.1
2014	24.4	61.8	42.5
2015	22.1	60.9	44.2

	Incidence of long-term unemployment	Incidence of very long-term unemployment
Males	60.5	44.4
Females	61.3	44.0
< 30	49.0	29.7
30 - 45	59.3	42.9
> 45	72.0	57.0
Primary education	66.6	51.7
Secondary education	60.3	43.3
Higher education	54.5	36.3
Spaniards	61.7	45.3
Foreigners	56.9	38.8

Table 2
DETERMINANTS OF THE PROBABILITY OF EXIT FROM UNEMPLOYMENT TO EMPLOYMENT (a)

	Coefficient	Z
Females	-0.03	-21.0
16 - 24	-0.03	-14.1
25 - 34	0.02	11.1
45 - 54	-0.03	-13.7
> 55	-0.08	-36.0
Primary education	-0.04	-22.9
Secondary education	-0.03	-14.6
GDP growth	0.01	13.0
6 months - 1 year unemployed	-0.05	-33.0
1 year - 2 years unemployed	-0.10	-64.7
> 2 years unemployed	-0.14	-93.0
Average probability	0.18	

Chart 1
EDUCATIONAL MISMATCH INDEX (b)

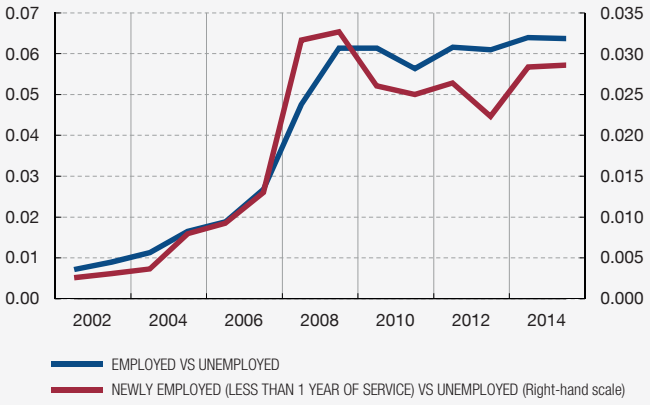


Chart 2
EXIT RATE FROM UNEMPLOYMENT TO EMPLOYMENT IN TERMS OF UNEMPLOYMENT DURATION

SOURCES: European Commission, INE and Banco de España.

a The regression also includes dummies for the year, quarter and regional government. Marginal effects and the Z statistic (ratio of the coefficient to the standard error) are reported. The estimation period spans that from 2005 Q1 to 2015 Q4. The reference category is an unemployed male, aged 35-44, with a higher education and unemployed for less than six months.

b This index measures the discrepancy between the distributions by educational attainment level of the employed, or newly employed, and the unemployed. Higher levels in the index are interpreted as a greater mismatch between the distribution by educational attainment of the employed and the unemployed and, therefore, greater potential difficulties for labour demand needs being covered by the supply of unemployed workers. The index is calculated as $I_t = \sum_{j=1} (O_{jt} - P_{jt})^2$, where O_{jt} measures the proportion of employees with educational attainment leve j in the period t and P_{jt} measures this same proportion in the case of the unemployed.

The unemployment rate stood in early 2016 at 21%, almost 6 pp down on its early-2013 peak, but still far above that observed in other European countries. Moreover, the incidence of long-term unemployment (over one year unemployed) has diminished only slightly, to 60.9% (from its peak of 61.8% in 2014), practically threefold the level observed in 2008 (see left-hand panel of Table 1). Similarly, the proportion of the unemployed without a job for over two years has continued to increase, rising to 44.2% in 2015, against 9.9% in 2008. This bias in the distribution of unemployment towards longer durations is much more marked in Spain than in the other European countries, except Greece, and poses an additional challenge to continuing along the path of falling unemployment.

These developments are related, at least in part, to the sizable educational mismatch that has come about since the onset of the crisis between labour supply and demand. This phenomenon has chiefly been the consequence of the concentration of employment destruction among the least skilled. Indeed, the proportion of employees with only a primary education, which stood at 18% before the crisis broke, has fallen to 10.2% in 2015.[1] Conversely, the weight of employees with a university education has moved on a growing trend, from 23.9% in 2008 to 29.5% in 2015. As a result, the incidence of lengthy unemployment durations is particularly high among groups with a lower level of educational attainment, as well as among older individuals. In both cases, more than two-thirds of the unemployed have been seeking employment for at least a year, and more than half have been in that situation for over two years (see right-hand panel of Table 1).

Chart 1 shows an educational mismatch index for the Spanish labour market that takes into account the distribution by educational attainment of the employed and the unemployed, respectively proxying labour demand requirements and the average skills of the labour supply available. The index reveals a most notable increase since 2007 that has not diminished in the recent quarters of greater employment buoyancy, which evidences the low employability of certain less skilled groups.[2]

The analysis of unemployment exit flows shows that the sharp decline in the probability of finding a job observed as from 2008, from 35% in the years running up to the crisis to a low of 15.2% in 2013 (see Chart 2), was across the board but more acute in the group with the lowest unemployment durations, which were more affected by the labour market downturn. Likewise, the pick-up in employment creation in the past two years has allowed for a more marked increase in unemployment exit rates for durations of less than one year, which are already above the level observed in 2009. Conversely, the recovery is much more tenuous in the case of greater durations.

Individual information from EPA (Labour Force Survey) records enables the determinants of the likelihood of finding a job to be estimated (see Table 2). The results of the estimation[3] show that the youngest and oldest individuals, those least skilled and, above all, those having spent most time unemployed show a significantly lower probability of finding a job. The effect of the cyclical situation in the previous estimation is as expected, whereby higher GDP growth translates into a higher unemployment exit rate. However, the response of the unemployment exit rate to changes in GDP growth depends on unemployment duration. Specifically, it is found that a 1% increase in GDP raises the exit rate for durations of less than one year by 1.5 pp but by only 0.4 pp in the case of durations of over two years.[4]

If the evolution of these unemployment exit probabilities over recent years is analysed[5], the crisis can be seen to have reduced comparatively more the unemployment exit probability of the youngest cohort and, more recently, of those with a lower level of educational attainment, among whom a lesser recovery of the exit rate is observed in the current upturn. Likewise, a marked deterioration is seen in employment opportunities for those with longer durations in unemployment.

In sum, the results presented in this Box reveal the presence of certain hysteresis effects that may significantly hamper further reductions in unemployment in Spain. This is because, first, individuals having been unemployed for the longest periods account for a very high proportion of the total unemployed and this group also faces growing difficulties in finding a job; and, further, the cyclical upturn is exerting a relatively minor impact on the job-finding capacity of this group of unemployed workers.

1 This effect is partly a consequence of the heavy job losses in the construction sector. Box 3.2 of the 2014 Annual Report analysed the employment status of construction workers who lost their job at the start of the economic crisis in 2008.

2 See Izquierdo, M., S. Puente and P. Font (2013), "Evolución del desajuste educativo entre la oferta y la demanda de trabajo en España", Boletín Económico, Banco de España. June. The course of this index is similar when the distribution of recently created employment instead of the total stock of employees is used to proxy labour demand needs.

3 Specifically, Table 2 shows the findings of a probit-type model in which, for the period running from 2005 de 2015 Q4, an estimate is made of the probability of finding an individual employed in a given quarter departing from a situation of unemployment in the preceding quarter, drawing on a set of aggregate variables and personal characteristics.

4 These findings are obtained in a version of the foregoing probit model, in which the GDP growth coefficient is allowed to differ for each unemployment duration.

5 Based on a probit model like that shown in Table 2 in which the coefficients of the different variables are allowed to vary over time.

Various factors point to a considerable reduction in the potential growth rate of the Spanish economy in the medium term, which could stand at around 1.2% in the 2020-2025 period, compared with rates close to 3% over the 2001-2008 period.[1] Notable among these factors is the impact of population ageing which, on current INE forecasts, would lead to a decline in the population of 0.2% per annum over the 2020-2025 period[2]; hence, once this aspect is taken into account, per capita potential growth would stand at similar rates to those observed during the upturn. The effects of population ageing on potential growth will be accentuated, first, by the disappearance of the cohort effects that have raised the female participation rate in recent decades and which are expected to peter out in the coming years.[3] The negative contribution of labour supply to potential growth may only be offset by a better productivity performance, which must overcome its declining trend, or by a significant reduction in the structural rate of unemployment (NAIRU), beyond what was observed in previous cycles.

This Box offers different potential growth scenarios for the Spanish economy which seek to illustrate the effects of a sustainable improvement in the behaviour of productivity and structural unemployment, associated, for instance, with the application of structural reforms. In the baseline scenario it is assumed that these two variables will converge on the average values observed in the past two full cycles of the Spanish economy (1983-2013). Specifically, assumptions are made for a fall in structural unemployment from its current levels to its estimated historical average of 14.4%, and a productivity growth path consistent with the average of 0.8% observed from 1983 to 2013. These figures may be understood as the portion of unemployment and potential productivity that is explained by structural characteristics of the labour and product markets.

Hereafter, alternative scenarios are set out considering different equilibrium growth paths that reflect the effect of certain structural changes in the foregoing variables that would arise, according to the assumptions of the exercise, further to the implementation of product and labour market reforms. For a reference framework within which to analyse the impact of the reforms, the empirical evidence available at the international level is used. Specifically, the starting point is the regulatory indicators devised by the OECD, which measure both the efficiency of the regulatory framework in product markets and the legislation on employment protection. These indicators seek to quantify various aspects relating to the legal and institutional framework in place in each of the countries

1 The estimates of potential growth strip out the effect of cyclical factors, thereby identifying the trend component of economic growth. These estimates are based on a production function approach in which the productive factors (capital and labour), along with total factor productivity, determine the economy's productive capacity. This methodology further allows potential growth scenarios to be devised over a medium-/long-term horizon under specific assumptions based on the neoclassical growth model (for further details see Cuadrado and Moral Benito, "Potential growth of the Spanish economy", Occasional Paper 1603, Banco de España).

2 While the uncertainty surrounding these forecasts may be relatively high, the Eurostat forecasts (see EUROPOP 2013) coincide and show a scenario of population declines over the medium term in the Spanish economy.

3 See Montero, J.M. y A. Regil (2015), "La tasa de actividad en España; resistencia cíclica, determinantes y perspectivas futuras" Documento Ocasional 1502, Banco de España.

Table 1
SCENARIOS FOR POTENTIAL GROWTH IN THE SPANISH ECONOMY IN THE MEDIUM TERM (a)

	Baseline scenario	Scenario 1	Scenario 2	Scenario 3
Potential growth	1.2	1.4	1.6	1.9
Contributions				
Employment	0.0	0.2	0.0	0.2
Hours by employee	-0.2	-0.2	-0.2	-0.2
Employees	0.2	0.4	0.2	0.4
Population aged 15-64	-0.2	-0.2	-0.2	-0.2
Participation rate	0.0	0.0	0.0	0.0
NAIRU-PC	0.4	0.6	0.4	0.6
Capital	0.5	0.6	0.7	0.8
TFP	0.6	0.6	0.9	0.9
Memorandum item				
Growth of per capita potential GDP	1.3	1.6	1.8	2.1

SOURCE: Banco de España.

a The estimates correspond to the average for the period from 2020 to 2025. Scenario 1 considers a reduction in the equilibrium structural unemployment rate to 12% in 2025 instead of 14.4% in the baseline scenario. Scenario 2 considers an increase in equilibrium productivity growth to 1.3% in 2025, compared with 0.8% in the baseline scenario. Scenario 3 incorporates both changes simultaneously.

analysed. Although they are subject to different caveats, these measures are usually considered to be a useful tool for assessing the relative situation of a country's regulation and the changes therein over time. A lower score in these indicators denotes greater flexibility in product and labour markets.[4] On the basis of this information, the elasticities of the two variables of interest, namely structural unemployment and productivity growth, are considered relative to the previous indicators. In this connection, the estimates available in the literature are used in order to quantify approximately the effect on structural unemployment and productivity growth of structural reforms that add flexibility to labour and product markets. For Spain's case, it has been considered that a 1 pp reduction in the regulatory indicators would involve placing the Spanish regulatory framework at the level of the best practices of the OECD countries. Thus, the scenarios do not seek to quantify the effects of a specific structural reform but to illustrate the potential benefits of setting more efficient regulation in place. According to the elasticities available[5], an improvement in the labour and product market regulatory framework on the above scale would reduce the equilibrium unemployment rate by 2.4 pp and raise annual productivity growth by around 0.5 pp.

On the basis of these estimates, three scenarios are constructed which illustrate the impact of these changes on potential growth in the medium term (2020-2025). Scenario 1 considers a 2.4 pp reduction in the equilibrium structural unemployment rate (to 12% in 2025), scenario 2 illustrates the 0.5 pp increase in equilibrium productivity growth (to 1.3% at the end of the period considered) and, finally, scenario 3 incorporates the effects of the changes in both variables simultaneously.

Table 1 shows the results of these scenarios for the 2020-2025 period. The scenario based on higher annual growth rates in productivity results in higher potential growth than the scenario that includes a more marked reduction in the structural unemployment rate, which partly reflects higher growth in the volume of capital given the higher growth of productivity.[6] In any event, when both types of reforms combine, potential growth would stand at rates close to 2%, exceeding the per capita growth observed in the upturn.

These simulations thus illustrate the importance of pushing through structural reforms that increase productivity growth and reduce the structural unemployment rate in order to offset the impact of population ageing and the tailing off of the expansion in the female participation rate recorded in recent decades.

4 For example, the indicator of legislation on employment protection takes into account, inter alia, the amount of severance payments, the definition of unfair dismissal, the conditions for the use of temporary contracts and the different procedures applicable, while the product market regulation indicator encompasses concepts such as public sector intervention in private operations, regulatory complexity, explicit obstacles to trade and investment, and freedom of opening hours. For further details on product market regulation indicators, see Mora-Sanguinetti, J.S and M. Martínez-Matute (2014), "La regulación en el mercado de productos en España según los indicadores de la OCDE". Boletín Económico Banco de España 12, pp. 45 54. Regarding the employment protection legislation indicator, see OECD (2013), "Protecting Jobs, enhancing flexibility: A new look at employment protection legislation". OECD Employment Outlook.

5 See Bassanini, A. and R. Duval (2009), "Unemployment, institutions and reform complementarities: re-assessing the aggregate evidence for OECD countries", Oxford Review of Economic Policy; Nicoletti, G. and S. Scarpetta (2003), "Regulation, productivity and growth: OECD evidence", Economic Policy; and Bassanini, A., L. Nunziata and D. Venn (2009), "Job protection legislation and productivity growth in OECD countries", Economic Policy.

6 In the neoclassical growth model considered in this Box, the growth of capital per employee is assumed, under equilibrium, to be equal to technological growth.

As described in Chapter 1 of this Report, the recovery observed in the Spanish economy since mid-2013 is the result of a combination of various factors, some predominantly of a temporary nature and others more long-lasting. Within the latter group, one of the most significant factors is the increase in recent years in the competitiveness of the Spanish economy, understood in a broad sense, encompassing both lower costs (labour and financing costs) and lower prices, compared with the euro area as a whole. This chapter assesses the role played by this process of competitive adjustment in the current expansionary period.

The adjustment in prices and costs, which has triggered the depreciation in the real exchange rate of the Spanish economy, gave rise in the early years of the crisis to a highly dynamic export performance and a significant correction in the external imbalance. In turn, the strength of export sales drove up demand for production resources, enabling the recovery in activity to spread to domestic expenditure components. Indeed, the export momentum encouraged both business investment decisions, which were also boosted by the decline in the cost of borrowing, and employment creation, in a setting in which the successive reforms of the regulatory framework of the labour market have brought wage costs and, in general, employment conditions more in step with different sector- and firm-specific developments. Lastly, the improved employment dynamic that has accompanied the present expansionary phase has prompted, inter alia, a significant recovery in private consumption, even against the backdrop of moderate wage growth.

The process of competitive adjustment analysed below has played a significant role in the progress made towards restoring the macroeconomic balance of the Spanish economy. This process is, however, far from complete, as illustrated by the combination of high dependence on imports, a substantial net external debt position and an unemployment rate that is still very high. To achieve further progress on these fronts, additional competitive adjustments will be needed and, in the longer term, a reform agenda to boost productivity momentum.

1 Introduction

The Spanish economic recovery is progressing at a good pace, although the fallout from the crisis remains considerable

The recent economic crisis had a profound impact on the Spanish economy: between 2008 Q2 and 2013 Q2, GDP fell by 9.3% and employment by 19.1%. Household and business income contracted, prompting a marked decline in their spending and in their contribution to public revenue. On the back of the recovery that began in mid-2013, GDP and employment regained 5.5 pp and 4.3 pp, respectively, but they are still 3.8 pp and 14.8 pp below the pre-crisis highs.

The prolonged expansionary phase that preceded the crisis resulted in severe losses in competitiveness, which translated into external deficits and economic overheating

During the expansionary phase, the falling cost of debt and plentiful credit, associated to a great extent with the start of monetary union, prompted strong demand growth. This in turn fuelled a positive inflation differential with the rest of the euro area and a relative increase in the price of non-tradable goods compared with tradable goods, against a backdrop of strong sustained growth in relative unit labour costs.[1] These developments helped to slow down the growth in net exports, shifting resources into sectors producing non-tradable goods, especially construction, with the result that those activities gained excessive weight in the economy in terms of value added and employment, giving rise, in turn, to a disproportionate concentration of financial system risk in those sectors.

1 See Chapter 4 of the 2014 *Annual Report.*

The outcome was a very high and protracted external imbalance, which translated into a huge trade deficit and a growing net external debt position, reflecting the high levels of household and non-financial corporation debt.

The initial effect of the recession was a sharp upturn in unemployment and an improvement in the external balance

The sharp drop in activity at the start of the crisis, as a consequence of the collapse of the international financial system and the end of the real estate boom, gave rise to a strong and rapid surge in unemployment and a marked slowdown in private domestic spending, in a setting in which both the budget deficit and government debt rose significantly. Lower domestic demand and growing exports prompted a narrowing of the trade deficit and a consequent decline in the external imbalance. In turn, higher unemployment and lower household and business spending gave rise to a large negative output gap and a deterioration of financial institutions' balance sheets. That dynamic became more pronounced when, in the summer of 2012, the economy faced a sudden contraction in external financing flows.

Among the broad range of factors behind the economic recovery, enhanced competitiveness is key

The subsequent recovery has been based on a wide variety of factors. Some have been mainly short-lived, such as the drop in oil prices, the ECB's quantitative easing policy or the expansionary stance of fiscal policy after several years of budget restrictions, and came into play essentially in the most recent period, driving up GDP and employment growth in 2015, as analysed in Chapters 1 and 3 of this Report. Another set of factors that explain the upturn in the Spanish economy go farther back in time and have more long-lasting effects, owing to their role in helping to correct the sources of the imbalances that built up during the expansionary phase. In addition to certain other significant factors not directly analysed in this chapter, such as the recapitalisation and restructuring of the financial system, this second group includes the enhanced competitiveness of the Spanish economy, which is reflected in the relative price and cost adjustments.

Lower financing costs were also a source of competitiveness gains

Various monetary and financial policy decisions, including the above-mentioned recapitalisation and restructuring of the Spanish financial sector and the successive measures adopted by the ECB (the impact of which is analysed in Chapter 3 of this Report), also made a very significant contribution to economic recovery. One of the fundamental effects of those measures was the improvement in financing conditions, following the severe deterioration observed at the peak of the sovereign debt crisis that was manifested, in particular, in the wide differential that emerged between the cost of credit for Spanish agents and the cost of credit for their peers in the core euro area countries. The subsequent uptick in activity was underpinned by credit conditions converging towards those in force in those countries, constituting an additional source of improvement in the competitive position of the Spanish economy.

Competitiveness gains have helped to improve the external balance and, more recently, to reduce the high level of unemployment

In the period elapsed since the onset of the crisis, the reversal of the competitive losses that had built up in the previous period has helped to restore the external balance of the economy, through relative price and cost adjustments. The share of exports in GDP has risen by almost 8 pp since the crisis began, up to 33.1%; this, together with the decline in the share of imports, has transformed a goods and services trade deficit of 6% of GDP in 2007 into a surplus of 2.5% in 2015.[2] Over time, the improvement in the competitive position has led to employment creation and has encouraged investment decisions, reducing the domestic imbalance, in a setting in which, in the most recent period, private domestic demand has become the driving force behind recovery.

2 The non-energy trade balance has also improved, although somewhat less pronouncedly (by 6.3 pp as a percentage of GDP between 2007 and 2015).

The correction of relative costs, or internal devaluation, is the natural alternative given the unavailability of the exchange rate as an adjustment tool

This chapter describes the competitive adjustment process resulting from these two developments – the correction of both labour and financing costs – and assesses the role they have played in the Spanish economic recovery. This competitive adjustment acts as a substitute for the effect of exchange rate devaluation, insofar as both channels permit a real effective exchange rate depreciation, which is why it is commonly referred to as "internal devaluation". In Spain, the internal devaluation process began shortly after the onset of the crisis in the case of the correction of relative labour costs, and in the autumn of 2012 in the case of the improvement in relative financing costs.

The chapter focuses on the role played by competitiveness gains in the recent economic recovery in Spain

Following this introduction, the second section of the chapter describes the channels through which competitiveness gains feed through to the different components of GDP and compares the recent experience in Spain with that of the crisis of the early 1990s. Subsequently, evidence is provided of the impact of competitiveness gains in terms of relative unit labour costs on exports and the difficulties involved in identifying similar effects on the import side are noted. The fourth section analyses how the decline in labour and financing costs in the economy may have acted as a catalyst for the uptick in domestic demand, and the chapter ends with a set of conclusions.

2 Characterisation of the competitive adjustment

As the exchange rate cannot be used as an adjustment tool, the recovery in external competitiveness must be based on changes in costs and prices

During the expansionary cycle that preceded the crisis, the Spanish economy had built up a significant external imbalance, which gave rise to an extremely high negative net international investment position verging on 100% of GDP. Correcting an imbalance of that magnitude requires shifting expenditure from goods produced abroad to goods produced in Spain, which in turn requires changes in relative prices. Where the exchange rate is available as an additional instrument, nominal exchange rate depreciation helps to restore the external balance, at least in the short term, making exports cheaper and imports more expensive. However, this kind of adjustment is not viable for an economy belonging to a monetary union, where relative cuts in domestic production costs and prices compared with foreign production costs and prices must come from the economy's endogenous response to the recession, which may be reinforced by economic policy measures.

Various economic policies may encourage the internal devaluation process,…

Although the internal devaluation process is an endogenous response to the onset of the crisis, different economic policy measures may affect the intensity and the duration of that response. In particular, as analysed in detail in Box 2.1, a crisis such as that which began in Spain in 2008 drives down private agents' consumption and investment demand, giving rise to price and wage moderation in the economy. As domestic products become cheaper in relative terms, the real effective exchange rate depreciates, encouraging exports and discouraging imports. This partially offsets the fall in domestic demand and helps to mitigate the decline in activity and employment. The intensity of the internal devaluation process and, therefore, its effects on activity hinge on a wide range of factors, including, crucially, the degree of responsiveness of prices and costs to the fall in demand. Thus, economic policy measures that reinforce price and cost adjustments in the economy tend to intensify the beneficial effects of the internal devaluation process.

…including, fundamentally, reform of the labour and product markets

In particular, given the weight of labour in the production structure, labour market reforms designed to make it easier to contain labour costs play an essential role in promoting the internal devaluation process and prolonging its impact. Most especially, in light of the deterioration of the cyclical situation post-crisis, greater wage flexibility makes it easier to adjust costs and, ultimately, prices set by firms, enhancing competitiveness and prompting a stronger upturn in activity. In that respect, it is estimated that the 2010 and especially the 2012 labour reform reinforced the process of moderation of unit labour costs (ULCs) that

had been observed since the crisis began,[3] which not only had positive effects on firms' competitiveness but also reduced their need to make workforce adjustments, with the consequent favourable impact on investment and private consumption. Moreover, reforms that make the product market more competitive maximise the positive effects of wage containment, as they encourage greater pass-through of competitiveness gains from costs to prices and, therefore, its impact on external flows (see Box 2.1).

The internal devaluation process is complex and its effects on activity and employment hinge on a wide range of factors

In addition to wage flexibility, a wide range of factors condition the effects of an internal devaluation process. In particular, the greater the responsiveness of trade to competitiveness gains and the more favourable the external setting in which the internal devaluation process takes place, the greater the impact.[4] In the framework of monetary union, the positive effects of an internal devaluation may be limited if the countries that need to achieve greater competitiveness at the same time account for a high proportion of the area's GDP.[5] Furthermore, the process of price and wage adjustment may have limited effect if the zero lower bound on interest rates becomes binding.[6] In that case, using unconventional monetary policies to reduce long-term interest rates (for example, through quantitative easing or forward guidance) helps to reinforce the positive effects of an internal devaluation process.[7]

Measuring price-competitiveness developments is no easy task

An initial difficulty involved in measuring internal devaluation processes is the imperfect nature of the various indicators used to measure developments in competitiveness. Each of the different price-competitiveness measures includes different groups of products, which, for example, will not necessarily be subject to international competition in all cases or may in some instances include the effect of tax changes that distort the measurement. In addition, although labour cost indicators may be used to establish links between developments in competitiveness and the structural functioning of the economy, the information they provide on countries' relative competitiveness may be incomplete, as they reflect only one of the important elements underlying the concept of competitiveness.[8]

In any event, the indicators point to a considerable improvement in competitiveness since 2008, although uneven in scale and more pronounced in terms of ULCs...

Although the price-competitiveness indicators built using different measures of the real effective exchange rate all signal the large magnitude of the internal devaluation process that emerged in 2008, the intensity of the adjustment observed varies according to the deflator used (see Chart 2.1). The improvement in competitiveness is most visible in terms of ULCs: using that variable, by 2015 the competitive losses accumulated from the start of monetary union up to 2008 – verging on 20% – would have been almost completely corrected. That correction was initially based on a sharp uptick in apparent labour productivity, which grew at a cumulative rate

3 See M. Izquierdo, A. Lacuesta and S. Puente (2013), "The 2012 labour reform: an initial analysis of some of its effects on the labour market", *Economic Bulletin,* September, Banco de España, pp. 17-25. Similar results were found recently in R. Domenech, J.R. García and C. Ulloa (2016), *"Los efectos de la flexibilidad salarial sobre el crecimiento y el empleo",* Documento de Trabajo 1605, BBVA Research, and in European Commission (2016), *Country Report Spain 2016,* Commission Staff Working Document num. 78.

4 This is analysed in detail in J. Andrés, Ó. Arce and C. Thomas (2014), Structural reforms in a debt overhang, Working Paper 1421, Banco de España.

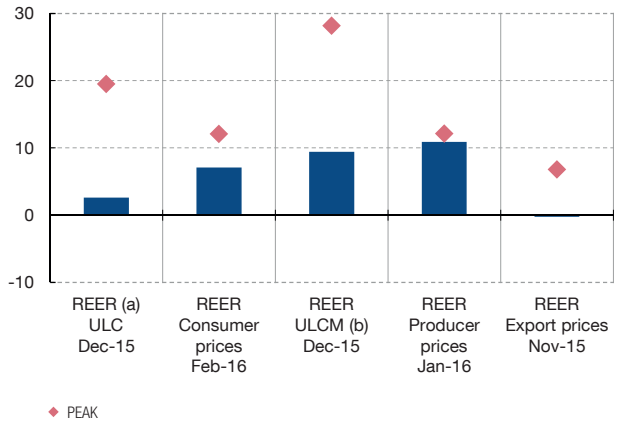
5 See, for example, J. Decressin, R. Espinoza, I. Halikias, D. Leigh, P. Loungani, P. Medas, S. Mursula, M. Schindler, A. Spilimbergo and T. Teng Xu (2015), *Wage moderation in crises: policy considerations and applications to the Euro Area,* IMF Staff Discussion Note 15/22.

6 This question is analysed in G. Eggertsson, A. Ferrero and A. Raffo (2014), "Can structural reforms help Europe?", *Journal of Monetary Economics,* vol. 61(C), pp. 2-22, and in J. Andrés, Ó. Arce and C. Thomas (2014), *Structural reforms in a debt overhang,* Working Paper 1421, Banco de España.

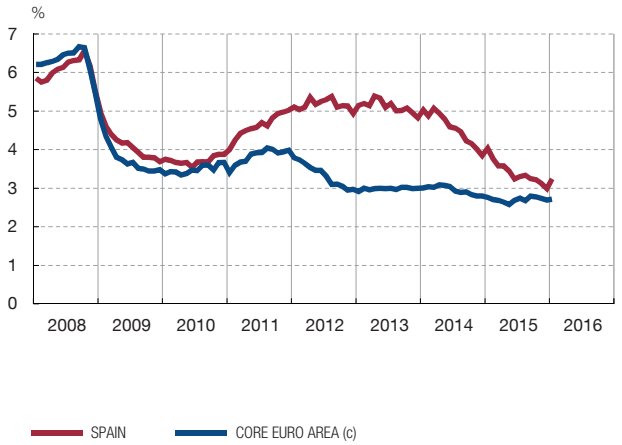
7 See Chapter 3 of this Report; Ó. Arce, S. Hurtado and C. Thomas (2015), *Policy Spillovers and Synergies in a Monetary Union,* Working Paper 1540, Banco de España; and M. Charpe and S. Kühn (2015), *Beggar or prosper-thy-neighbour? The international spillovers of labour cost,* Research Paper num. 11, International Labour Organization.

8 For more details, see Chapter 2 of the 2011 *Annual Report* or A. Crespo, G. Pérez-Quirós and R. Segura-Cayuela (2011), "Competitiveness indicators: the importance of an efficient allocation of resources", *Economic Bulletin,* January 2012, Banco de España, pp. 103-111.

1 COMPETITIVENESS INDICES VIS-À-VIS THE EURO AREA
Cumulative rates since December 1998



2 INTEREST RATES ON LOANS UNDER ONE MILLION EURO



SOURCES: ECB and Banco de España.

a REER: Real effective exchange rate.
b ULCM: Unit labour costs in manufacturing.
c Core euro area: Austria, Finland, France, Germany, Luxembourg and Netherlands.

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of 10% between 2010 and 2012, on the back of large-scale destruction of employment. Subsequently it was based chiefly on wage moderation, especially as from 2012.

...than when other measures are used

However, if the real effective exchange rate deflated by CPI or producer prices is used, the correction of the high differential built up in the period 1999-2008 is more modest.[9] In turn, throughout the period analysed the indicator that measures competitiveness based on export prices was notably more stable. This lower volatility seems to reflect the need for exporting firms to adapt to international competition, leading them to set prices in accordance with global market conditions and to adjust their margins to changes in costs, in order to remain competitive. Thus, during the pre-crisis period, when relative ULCs rose compared with the euro area, exporting firms endeavoured to transfer only part of those increases to prices, squeezing their margins. Post-crisis, when relative ULCs declined, it seems that firms did not pass the full effect through to prices, thus driving up export margins. Those higher margins could also be related, in part, to the increase in the cost of credit and the tighter credit conditions faced by Spanish firms in certain phases of the crisis. In light of those developments, non-financial corporations appear to have had greater recourse to internal funding, which not only enabled them to obtain financing at a lower cost, but also to accelerate deleveraging, with a view to enhancing their credit quality.[10]

Since 2013, competitiveness gains have been reinforced by improved financing conditions

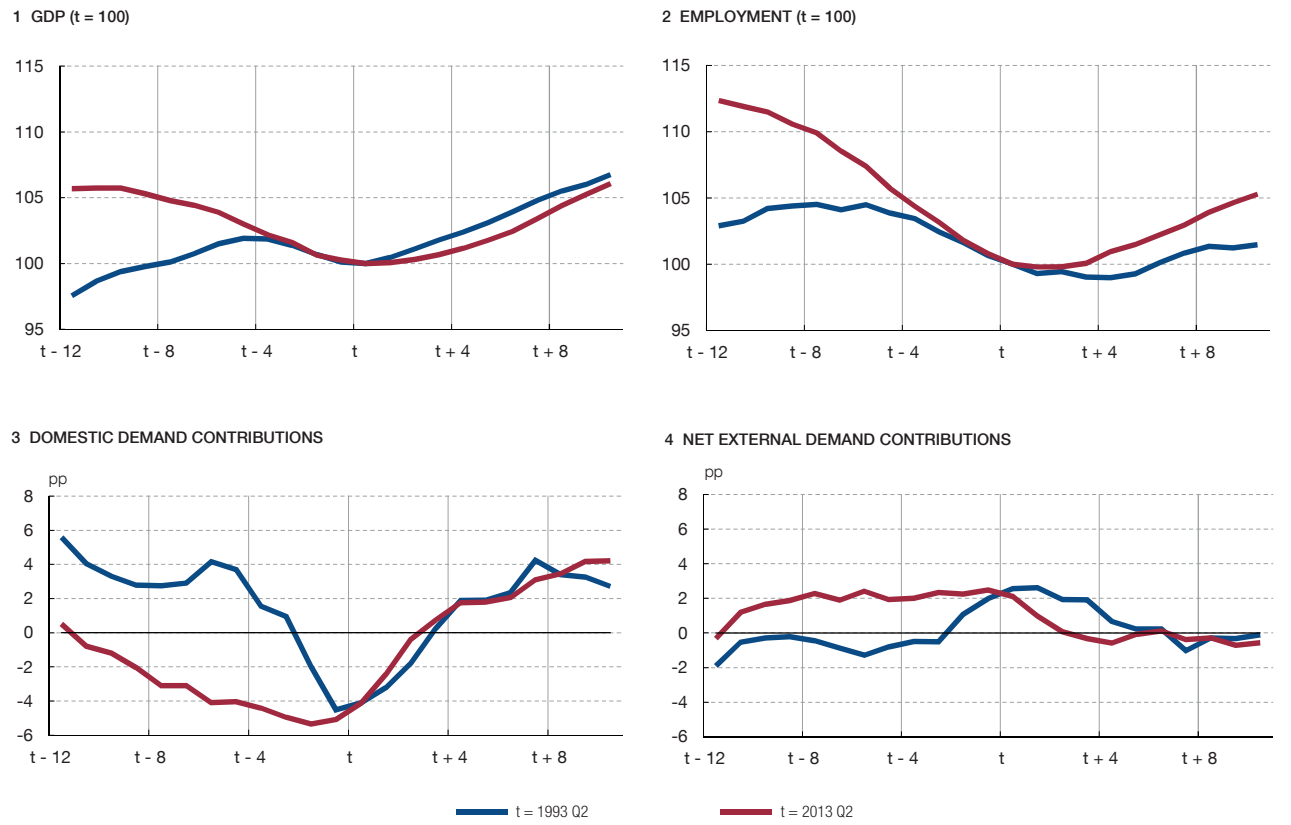
From mid-2013, competitiveness gains were strengthened by the decline in interest rates on bank lending, which, especially in some segments, were very much higher than in the core euro area. They have since converged, following the various measures taken both in Spain (restructuring of the financial system) and at a European level (ECB monetary policy

9 In the case of the CPI-deflated real effective exchange rate, the discrepancy reflects, at least in part, various factors not directly related to the internal devaluation process, such as the increase in indirect taxes and administered prices in the period.

10 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. Indeed, including credit stock in export equations shows a negative correlation between the two variables, given the deleveraging experienced by manufacturing firms post-crisis.

MAIN MACROMAGNITUDES IN THE MOST RECENT CYCLES IN SPAIN
Quarter "t" is that in which GDP reaches its cyclical trough

CHART 2.2



SOURCES: INE and Banco de España.

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measures and changes in the institutional architecture of the euro area). Specifically, the interest rate spread over the core euro area for new loans to non-financial corporations under €1 million (which tend to coincide with lending to small firms) has narrowed by 1.5 pp since mid-2013, while in the case of loans over €1 million it has narrowed by 0.5 pp (see panel 2 of Chart 2.1).[11] This decline in the cost of borrowing was accompanied by easier access to credit, as shown in the surveys both of credit institutions and borrowers and in the available data on rates of acceptance of loan applications received by credit institutions.

The profile of the current recovery in GDP shares some features with the profile of the recovery from the crisis of the early 1990s, although the recent recession lasted much longer

To characterise the current recovery of the Spanish economy, a comparison may be drawn with Spain's recovery following the crisis of the early 1990s, even though the recent recession lasted much longer and was much more severe, hindering the comparison. Chart 2.2 illustrates how GDP, employment and the contributions of domestic and external demand evolved in the two episodes.[12] In the case of GDP, the profiles of recovery from the cyclical trough are very similar, although the pick-up was slightly more pronounced in the crisis of the early 1990s. In particular, both recoveries are based on a similar upsurge in domestic demand. The differences are somewhat greater in the case of net external demand, which in the 1990s showed a positive contribution in the quarters immediately following the exchange rate depreciation but which gradually faded away after slightly more than a year. In the recent crisis, the external sector contribution was already positive in the years before the cyclical trough, in a setting in

11 In the period considered, these two interest rates fell by 1.7 pp and 0.8 pp, respectively, in Spain.

12 A. Gómez Loscos and C. Martín (2014), "Una comparación de la respuesta del sector exterior en las dos últimas recesiones", *Boletín Económico,* May, Banco de España.

which competitiveness gains resulted in sustained export growth, while domestic demand continued to make a negative contribution to GDP growth.[13] Imports rose as domestic demand recovered, so that even though sustained export growth continued, the contribution of external demand to GDP growth tended to fade. Lastly, employment generation has been stronger in the recent recovery, probably reflecting the containment of labour costs and the more flexible use of labour, in both cases related, at least in part, to the reform of the regulatory framework of the labour market.

The current process is based on gradual cost adjustments and is more long-lasting

Despite these similarities between the two episodes in terms of the profiles of recovery of GDP and the contributions of the domestic and external demand components, the external sector adjustment mechanisms were quite different in each case. In both recoveries the re-establishment of price-competitiveness favoured export growth, with a relatively similar correction in the real effective exchange rate measured using ULCs five years from the onset of each of the two crises. In the 1990s, however, that recovery in competitiveness was linked to successive exchange rate devaluations and the competitive gains were intense but they were also partly short-lived, as domestic costs and prices gradually built up a positive growth differential compared with the main European economies (see Chart 2.3). By contrast, the competitiveness gains achieved following the recent crisis are the result of a much more gradual domestic process of slow but steady adjustment of relative costs.

3 The impact of internal devaluation on Spanish exports

Since 2010, Spanish exports have been very dynamic

Since the internal devaluation process got under way, Spanish exports have been highly dynamic, more so than euro area exports as a whole, meaning that the international market shares of Spain's exporters have evolved comparatively more favourably. This dynamism explains a significant portion of the marked correction in Spain's external imbalance in recent years, as imports, which adjusted cyclically in the recession, have risen sharply since 2014, in step with final demand (analysed in more detail in Box 2.2).

This positive export performance was underpinned by enhanced competitiveness

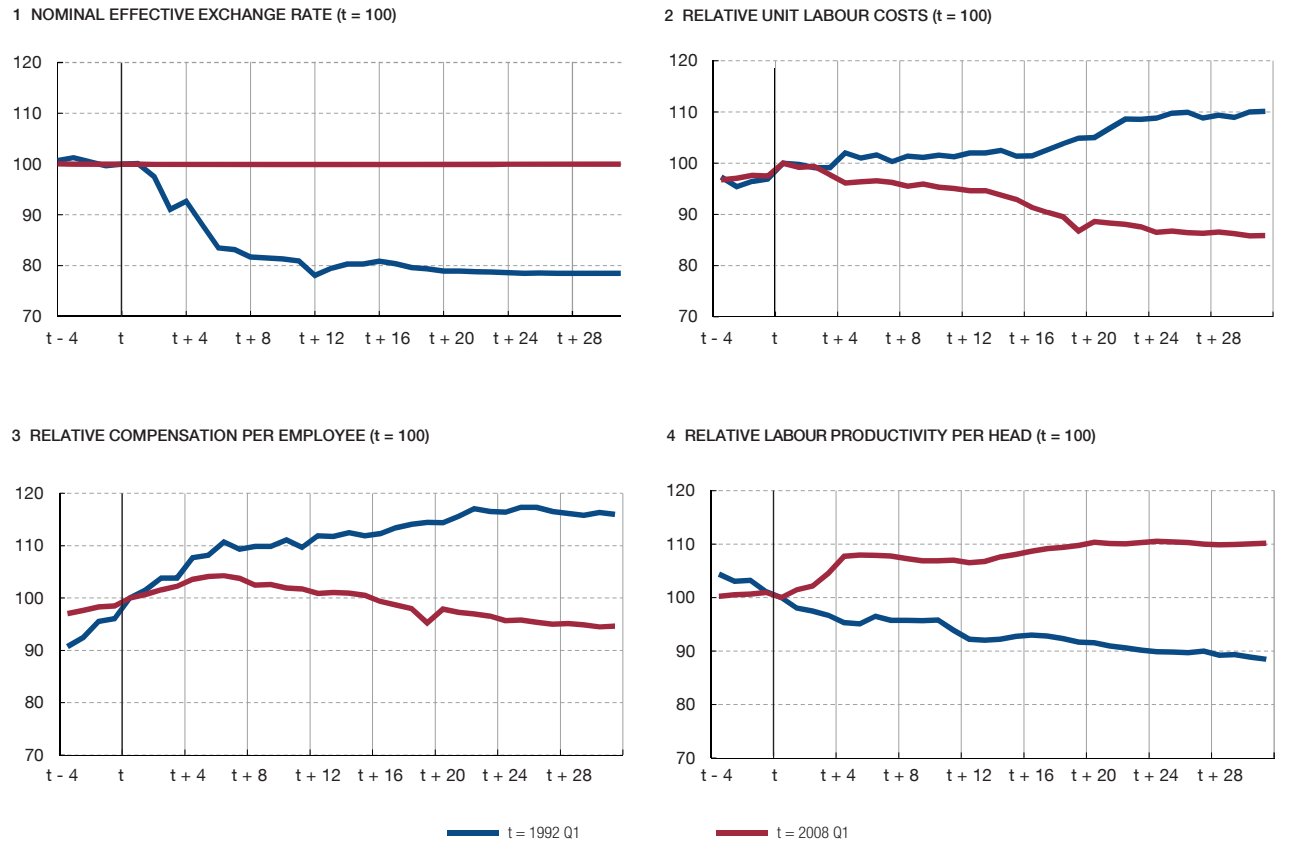
The main determinants that are usually considered to explain export performance include a scale variable that measures the external demand developments – proxied by the import volume of the countries of destination – and another that measures relative prices. Chart 2.4 shows the results of different estimates of the elasticity of Spanish exports to various competitiveness indicators, drawing a distinction between exports within the euro area and exports to the rest of the world. In general, the estimated responsiveness of exports in the long term is somewhat lower when the ULC-based indicator is used compared with other price measures. This appears to be because changes in costs are not typically passed through in full to prices, and are therefore only partially reflected in changes in margins.[14] In terms of geographical breakdown, exports beyond the euro area are more responsive to the competitiveness variable; this could be because products exported to emerging economies generally have a lower degree of differentiation, meaning that price competition may be more intense. Panels 3 and 4 of Chart 2.4 show, as is usual in estimates of this kind, that external demand is the main determinant of exports. However, in the more recent period, competitiveness gains seem to have made a

13 For a more detailed analysis of the different sub-periods of the recent crisis, see E. Ortega and J. Peñalosa (2013), *Algunas reflexiones sobre la economía española tras cinco años de crisis,* Occasional Paper 1304, Banco de España. Note that the economic cycles have been dated to coincide with the quarters in which GDP reached its cyclical trough and do not coincide exactly with the dating used by the Spanish Economic Cycle Dating Committee (CFCEE) in Asociación Española de Economía (2015), "Fechado del ciclo económico español", http://asesec.org/CFCweb/cf_index.htm.

14 In that respect, it should be precisely the exporting sectors (and other sectors where production, although essentially destined for the domestic market, is subject to competition from imports) where the pass-through to prices of changes to costs is less pronounced, given that firms in those sectors have comparatively less market power.

COMPETITIVENESS VIS-À-VIS THE EURO AREA
Quarter "t" is that previous to the start of each recession

CHART 2.3



SOURCES: INE and Banco de España.

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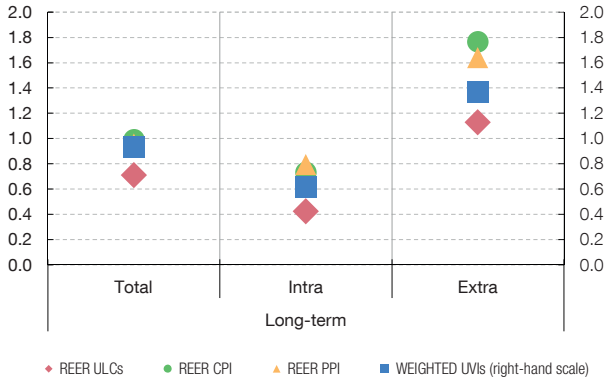
significant contribution to the explanation for export growth. Available estimates signal that between 15% and 33% of export growth in the period 2010-2015 would have come from improvements in competitiveness, according to whether it is measured by export prices or relative ULCs.[15]

External demand and competitiveness indicators do not fully explain the export performance, which signals that competitiveness is a complex concept that goes beyond prices and costs

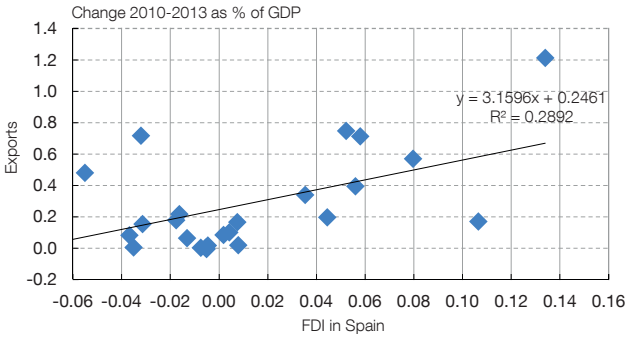
The two main determinants considered, that is, external demand and competitiveness, do not fully explain the recent dynamism of exports, as may be deduced from the residuals in the equations shown in Chart 2.4. A better explanation for the favourable export performance may be found by considering a broader concept of competitiveness, encompassing not only changes in relative prices and costs but also other factors such as the range or quality of goods and services. These additional elements are difficult to measure, which is why export market shares are often analysed as an indicator of competitiveness *ex post,* insofar as they measure the economy's ability to adapt to shifts in external demand or competition from other countries. From that standpoint, the results achieved by the Spanish economy since 2010, approximately coinciding with the start of the process of recovery of competitiveness measured by prices and costs, should be viewed positively (see panel 5 of Chart 2.4).

15 The literature generally finds that the ability of cost or price-competitiveness indicators to explain export performance is quite modest. In A. Crespo, G. Pérez-Quirós and R. Segura-Cayuela (2011), "Competitiveness indicators: the importance of an efficient allocation of resources", *Economic Bulletin,* January 2012, Banco de España, pp. 103-111, competitiveness explains almost 10% of changes in exports, compared with 80% for markets and slightly more than 10% for other factors.

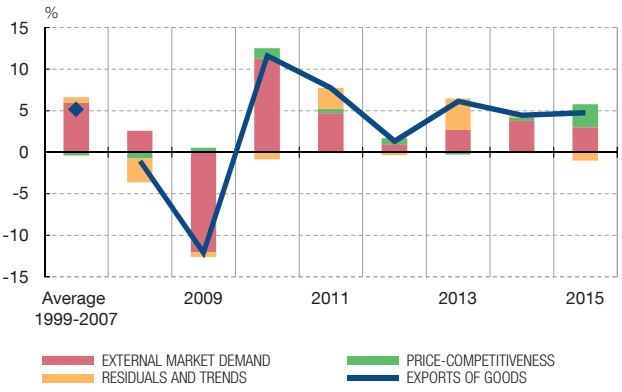
1 ELASTICITY OF SPANISH EXPORTS TO PRICES/COSTS (COMPETITIVENESS INDICES VIS-À-VIS DEVELOPED COUNTRIES) (a)



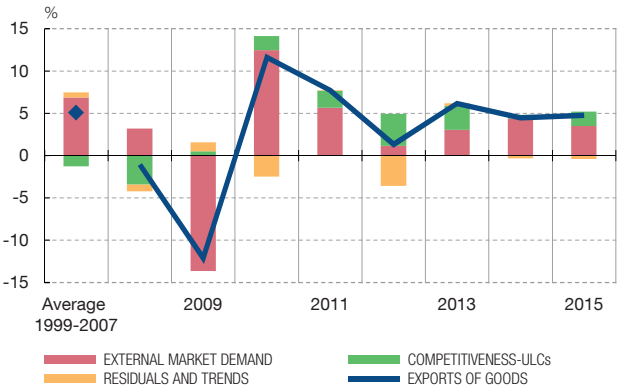
2 CORRELATION BETWEEN FDI IN SPAIN AND EXPORTS BY BRANCH OF ACTIVITY



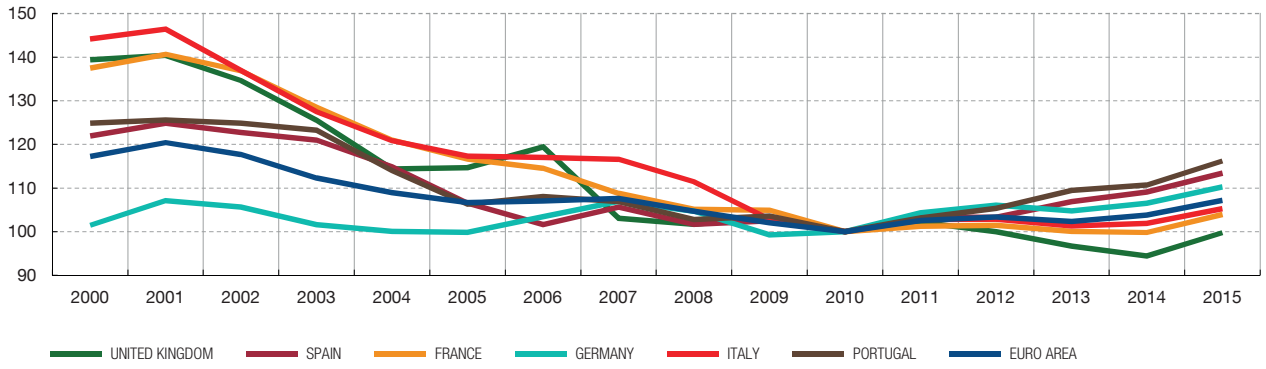
3 GOODS EXPORTS AND THEIR DETERMINANTS (COMPETITIVENESS MEASURED BY EXPORT PRICES)



4 GOODS EXPORTS AND THEIR DETERMINANTS (COMPETITIVENESS MEASURED BY UNIT LABOUR COSTS)



5 GOODS EXPORT MARKET SHARES (REAL TERMS)
Index 2010 = 100



SOURCES: Eurostat, INE, Ministry of Economic Affairs and Competitiveness and Banco de España.

a Competitiveness indices calculated vis-à-vis 22 developed countries. Sample period: 1990-2013.

The decline in domestic demand is also expected to have contributed to the recent favourable export performance as it has encouraged firms to seek new customers for their products

In addition, domestic demand weakness during the protracted recession appears to have increased the incentives for firms to redirect their sales abroad.[16] This would be reflected in higher export volumes at firms that were already exporting their products before the crisis, and in a higher number of exporting firms, which would seem to be particularly related to the role played by SMEs in export growth, an aspect that is analysed below. In this respect there is evidence, for the euro area as a whole, of a negative correlation between the likelihood of firms exporting and domestic demand performance.[17]

The increase in the export base may have been indirectly boosted by enhanced competitiveness, which may also have encouraged FDI

Not only may enhanced price-competitiveness have prompted an increase in the number of exporting firms, it may also have helped to attract foreign investment. In that respect, although the volume of foreign direct investment (FDI) in Spain has not changed significantly since the crisis, the weight of the tradable sectors as a proportion of the total has increased, triggering a certain reallocation of resources to those sectors. A more disaggregated analysis shows that those sectors, within the tradable sectors, that have received most FDI tend to coincide with those that have recorded the highest rate of export growth.[18]

A microeconomic analysis reveals a clear increase in the export base, attributable in part to SMEs

Using firm-level data it is possible to break down the aggregate export performance by number of exporting firms and average export volume by firm, commonly known, respectively, as the extensive and intensive export margins.[19] A first point to note, in this respect, is that there is a growing correlation between export activity and firm size (panel 1 of Chart 2.5). Since 2010, there has been a significant increase in the percentage of exporting firms of all sizes, most particularly among SMEs with between 50 and 199 employees and also among larger firms. In fact SMEs account for almost all the growth in the extensive margin in the period 2010-2013. In the case of the intensive margin, SMEs account for almost half of the increase in the period, a proportion that is much higher in the case of sporadic exporters, reflecting their recent entry into global markets.[20] Panel 3 of Chart 2.5 has a breakdown of aggregate export growth by intensive and extensive margin, also drawing a distinction by firm size. It shows that from 2011, the increase in the export base has gradually gained prominence as a factor behind the aggregate export performance.[21]

Exporting firms have lower labour and financing costs and substantially higher productivity than non-exporters

To analyse the differences observed between firms according to whether or not they engage in export activity, Table 2.1 sets out the results obtained from correlating the likelihood of a firm engaging in export activity with a set of characteristics. This analysis reveals that, on average, exporting firms have lower financing and labour costs, in the case of labour costs owing to their higher productivity, which allows them to pay higher wages. It also shows that the correlation between export activity and labour productivity has strengthened since 2010, making the role of ULCs even more determinant in the likelihood of a firm engaging in export activity.

16 See E. Prades and C. García (2015), "Actualización de la función de las exportaciones españolas de bienes", *Boletín Económico,* April, Banco de España, pp. 31-39.

17 See H. Vandenbussche (2014), "Firm-level productivity and exporting: diagnosing the role of financial constraints", *Product Market Review 2013: Financing the Real Economy,* European Commission.

18 For an analysis of the impact of FDI on Spanish firms, see A. Rodríguez and P. Tello (2014), "El impacto de la inversión exterior directa sobre la productividad y el empleo del sector manufacturero español (2001-2010)", *Boletín Económico,* January, Banco de España, pp. 105-115.

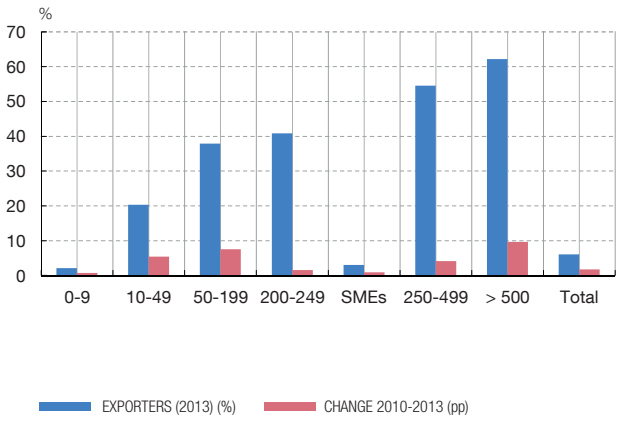
19 The information used comes from crossing data from the Balance of Payments, the Central Balance Sheet Data Office and the Annual Accounts deposited with Mercantile Registries [see C. Martín Machuca, A. Rodríguez and P. Tello (2009), "Determinantes principales de la decisión de exportar de las empresas españolas", *Boletín Económico,* December, Banco de España, pp. 30-42]. Export activity of SMEs may be under-represented as a consequence of the raising, in 2008, of the reporting threshold for the purposes of the Balance of Payments.

20 A sporadic exporter is understood to be a firm that has made sales to a specific export destination for fewer than four consecutive years.

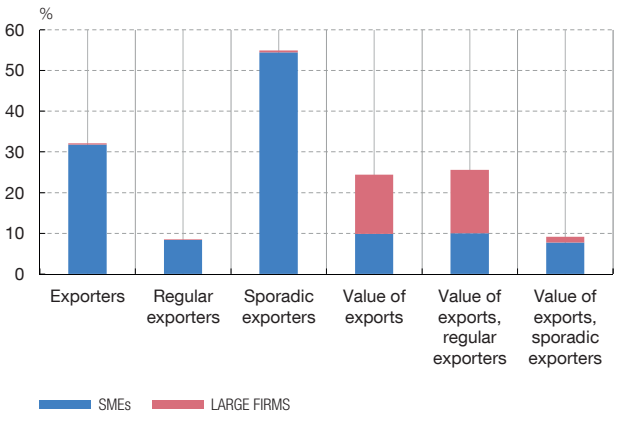
21 See M.J. González and C. Martín (2015), "The internationalisation of Spanish SMEs: main developments and their determinants", *Economic Bulletin,* December, Banco de España, pp. 13-22.

SPANISH EXPORTS OF GOODS: EXTENSIVE AND INTENSIVE MARGINS CHART 2.5

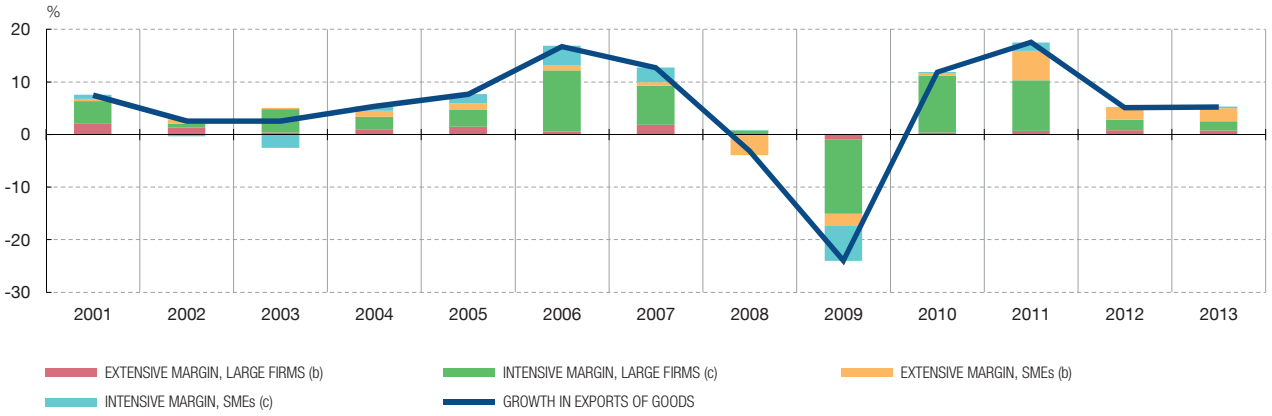
1 PROPORTION OF EXPORTING FIRMS BY SIZE GROUP
Percentage of total firms



2 CONTRIBUTIONS OF SMEs AND LARGE FIRMS TO CHANGES IN EXPORT BASE AND EXPORTS
Changes from 2010 to 2013



3 EXTENSIVE AND INTENSIVE MARGIN: CONTRIBUTION TO CHANGE IN EXPORTS (a)
2001-2013



SOURCES: Banco de España, based on Balance of Payments, CBA and Mercantile Registry statistics.

a Margins calculated for firms whose size is known. Large firms include those with 250 or more employees.
b Extensive margin is defined as the contribution to the increase (decrease) in the value of exports resulting from an increase (decrease) in the number of countries to which a firm exports or with which it has "firm-country of destination" trade relations.
c Intensive margin is defined as the contribution to the increase (decrease) in the value of exports resulting from an increase (decrease) in the amount exported by each firm to each country.

At firm level, there is a significant responsiveness of exports to competitiveness developments

Table 2.2 illustrates the results of an analysis based on a set of regressions correlating labour and financing costs at firm level with export growth, drawing a distinction between different sub-periods. The upper panel shows how a decline of 1% in a firm's ULCs is associated with an increase of 0.6% in its exports in the period 2002-2007, and with a slightly higher increase as from 2010. In addition, a drop of 1 pp in a firm's financing costs prompts an increase of 0.4% in its exports, although in this case a decline is observed in the more recent period, possibly owing to the growing importance of other factors that condition access to funding in a crisis setting. Regarding the impact of a firm's costs on the intensive margin and the likelihood of a firm starting to engage in export activity, Table 2.2 also shows how an increase in ULCs tends to reduce the proportion of total sales bound for export markets in the medium term. At the same time, the adjustment in labour costs appears to have played a significant part in encouraging export activity at

CHARACTERISTICS OF SPANISH EXPORTING FIRMS (a) TABLE 2.1

	Period 2001-2007	Period 2010-2013
Size (by number of employees)	1.4000*** (0.005)	1.861*** (0.008)
Capital/labour ratio	0.646*** (0.007)	0.832*** (0.013)
Labour productivity	0.702*** (0.004)	0.897*** (0.006)
Average wage	0.180*** (0.002)	0.191*** (0.004)
Unit labour costs (ULCs)	-0.522*** (0.003)	-0.705*** (0.006)
Indebtedness	-0.018*** (0.001)	-0.007*** (0.002)
Financial returns	0.032*** (0.006)	0.198*** (0.011)
Financial costs	-0.011*** (0.0004)	-0.076*** (0.001)

SOURCE: Banco de España.

a A total of 157,312 manufacturing sector firms (excluding manufacturers of coke and refined petroleum products) were analysed. Variables expressed in logarithms. Standard deviation in brackets. *, **, *** denote statistical significance at 10%, 5% and 1%, respectively. The table reflects ratios of estimates according to the ordinary least squares of a dummy variable that has a value of 1 for exporting firms and of 0 for non-exporting firms.

CORRELATION BETWEEN EXPORTS AND CHANGES IN LABOUR AND FINANCING COSTS AT FIRM LEVEL (a) (b) TABLE 2.2

	Dependent variables		
	Exports (year-on-year rate) (c)		
Regressors	2002-2013	2002-2007	2010-2013
ULCs (year-on-year rate)	-0.58***	-0.55***	-0.63***
Financing costs (year-on-year rate)	-0.36***	-0.72***	-0.40***

	Exports, intensive margin (year-on-year rate) (d)		
	2002-2013	2002-2007	2010-2013
ULCs (year-on-year rate)	-0.02	-0.05**	-0.09***
Financing costs (year-on-year rate)	-0.04	-0.09	-0.07

	Likelihood of starting to engage in export activity (e)	
	2010-2013 compared with 2001-2007	
ULCs (year-on-year rate)	-0.2***	-0.2***
Financing costs (year-on-year rate)	–	-1.2
SMEs	-2.4***	-1.9***

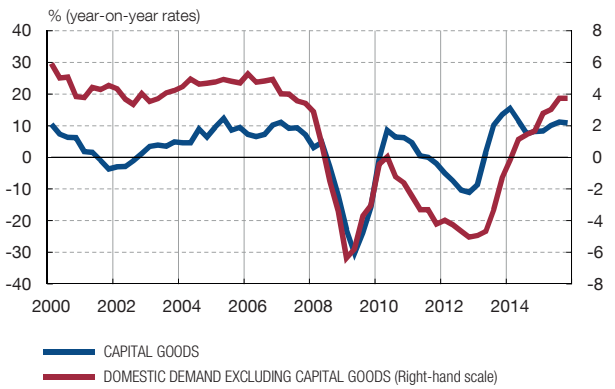
SOURCES: Microdata of Banco de España's CBSO and Balance of Payments.

a Regressions include dummy sector and year variables.
*, **, *** denote statistical significance at 10%, 5% and 1%, respectively.
b Firm-level financial costs are proxied as the result of multiplying the stock of debt of each firm by average interest rates on the total stock of lending to non-financial corporations, drawing a distinction between amounts under €1 million (SMEs) and amounts over €1 million (large firms).
c Includes 25,697 manufacturing sector firms (excluding manufacturers of coke and refined petroleum products).
d Increase in exports to a given destination. Includes 27,547 manufacturing sector firms (excluding manufacturers of coke and refined petroleum products).
e Includes 91,549 manufacturing sector firms (excluding manufacturers of coke and refined petroleum products).

RELATIONSHIP BETWEEN INVESTMENT IN CAPITAL GOODS AND DEMAND CHART 2.6

1 RELATIONSHIP BETWEEN INVESTMENT IN CAPITAL GOODS AND EXTERNAL DEMAND

2 RELATIONSHIP BETWEEN INVESTMENT IN CAPITAL GOODS AND DOMESTIC DEMAND



SOURCE: INE.

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firms whose sales in the previous expansionary period were concentrated on the domestic market.[22]

4 The competitive adjustment and the recovery in investment, employment and private consumption

The deep adjustment observed during the crisis has been followed by a strong recovery in capital goods investment

After falling by more than 30% between 2008 and 2013, in the current recovery phase investment in capital goods is rising fast, posting growth of more than 10% in the last two years and now standing just 5% below the pre-crisis level.[23] Improved financial conditions, lower uncertainty and, from a demand standpoint, export strength and, more recently, household consumption momentum, have all underpinned this investment buoyancy. In particular, it seems that competitiveness gains from relative costs and prices, through their positive impact on exports, have helped to revitalise investment, especially during the recession and in the first stages of the present recovery. The simulations made using the Banco de España's Quarterly Macroeconometric Model show that wage moderation of 1% prompts growth in private productive investment, after two years, of between 0.4 pp and 1 pp, subject to the responsiveness of prices to wage moderation.[24] Chart 2.6 shows how, from among final demand components, investment in capital goods has tracked exports much closer than it has tracked domestic demand (excluding investment in capital goods) since the crisis.

The improvement in firms' financial positions has also underpinned the upsurge in investment

The financial position of Spanish firms has improved significantly in recent years: debt ratios have fallen by more than 30 pp and debt burdens by more than 15 pp from their respective highs in mid-2010 and end-2008. A microeconomic analysis reveals the correlation between these variables relating to the financial position of firms and their demand for factors of production. Specifically, the firms making the most investment efforts are those that have higher profitability levels and lower debt ratios and debt burdens (see Chart 2.7).[25] This correlation appears to have intensified during the crisis

22 As analysed in S. Decramer, C. Fuss and J. Konings (2014), *How do exporters react to changes in cost competitiveness?,* ECB Working Paper Series num. 1752, these results are subject to the endogeneity bias for ULCs, as wages and output are jointly determined by firms. However, when instrumental variables are used to solve this problem (specifically, the second and third lags of the explanatory variables), the results are similar.

23 By comparison, in the euro area as a whole, at end-2015 this variable was still 15% below its level at the start of 2008.

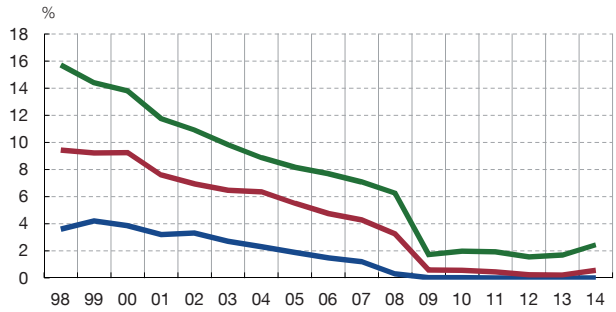
24 The pass-through to investment of the positive effects of wage moderation is greater when prices respond to wage containment in the same proportion, which is explained by the greater responsiveness of exports.

25 Debt burden, debt ratio and profitability are defined, respectively, as the ratio between interest payments on financing received and gross income, the debt-to-assets ratio and the ratio between a firm's gross income and its average volume of assets in the period considered.

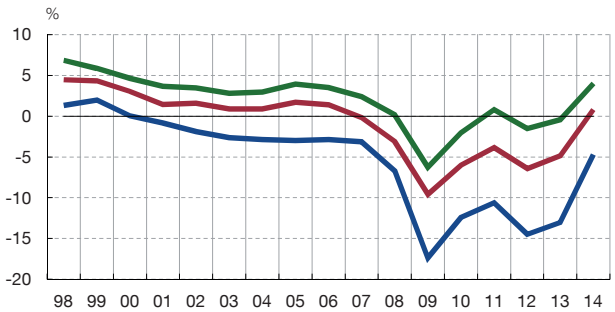
FINANCIAL POSITION AND LEVEL OF ACTIVITY (a)

CHART 2.7

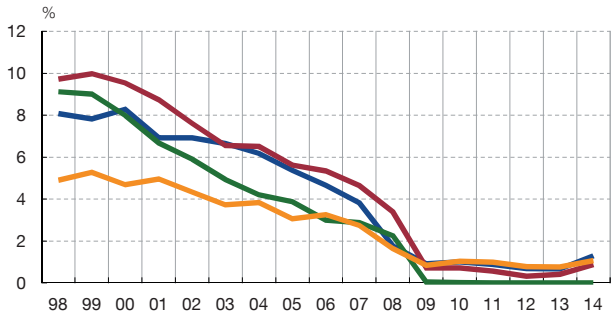
1 INVESTMENT - PROFITABILITY



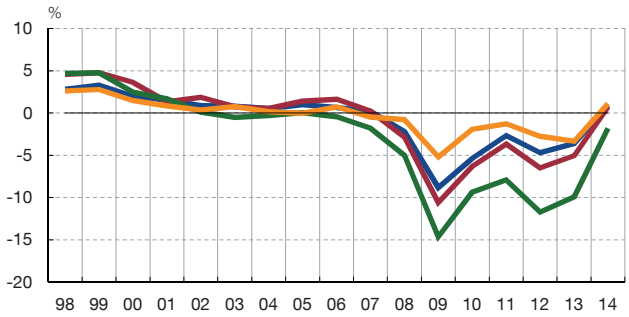
2 EMPLOYMENT GROWTH - PROFITABILITY



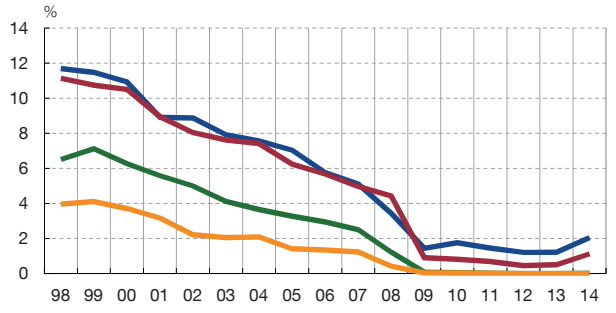
3 INVESTMENT - NET DEBT RATIO



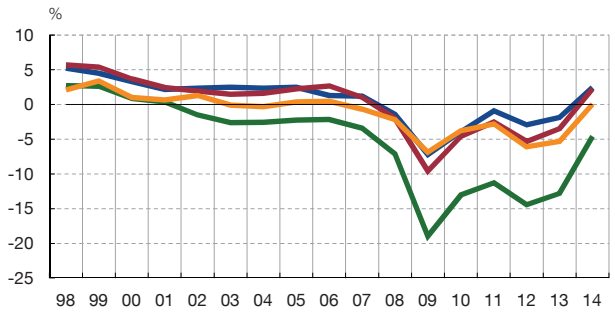
4 EMPLOYMENT GROWTH - NET DEBT RATIO



5 INVESTMENT - INTEREST BURDEN



6 EMPLOYMENT GROWTH - INTEREST BURDEN



SOURCE: Banco de España.

a Each panel depicts the median value of the rate of investment in fixed capital or of the rate of growth in employment for three sets of firms, corresponding to the two extreme quartiles of the distribution and firms with an intermediate financial position (between percentiles 40 and 60) in terms of the relevant financial variable (profitability, debt ratio net of liquid assets and debt burden). Debt burden is defined as the ratio between interest payments on financing received and gross income (sum of gross operating profit and financial revenue); debt ratio, as the the debt-to-assets ratio (net of liquid assets); and profitability, as the ratio between a firm's gross income and its average volume of assets in the period considered. Investment is the ratio between gross fixed capital formation and the stock of capital at the start of the period.

IMPACT OF THE FINANCIAL POSITION OF FIRMS ON THEIR RATES OF INVESTMENT AND LEVELS OF EMPLOYMENT (a) (b) (c) TABLE 2.3

	Impact on rate of investment			Impact on employment		
	Profitability $_{t-1}$	Debt ratio $_{t-1}$	Debt burden $_{t-1}$	Profitability $_{t-1}$	Debt ratio $_{t-1}$	Debt burden $_{t-1}$
Profitability $_{it-1}$ year <2008; >2012	0.162***			0.184**		
Profitability $_{it-1}$ 2008-2012	0.158**			0.313***		
Financial pressure $_{it-1}$ >p75; year <2008; >2012 (d)		-0.024	-0.011**		-0.009	-0.076***
Financial pressure $_{it-1}$ >p75; 2008-2012 (d)		-0.066***	-0.014***		-0.071***	-0.093***
Sargan	0.112	0.094	0.120	0.331	0.420	0.179
AR1	0.000	0.000	0.000	0.000	0.000	0.000
AR2	0.283	0.301	0.290	0.535	0.632	0.192

SOURCE: Banco de España.

a Impacts obtained by estimating standard investment and employment equations, using the generalized momentum method (GMM), based on the CBSO database. Integrated for the period 1997-2014. *, ** and *** denote significance for confidence levels of 90%, 95% and 99%, respectively.
b Profitability is defined as the ratio between a firm's gross income and its average volume of assets in the period considered; debt ratio, as the debt-to-assets ratio (net of liquid assets); and debt burden, as the ratio between interest payments on financing received and gross income (sum of gross operating profit and financial revenue).
c Number of firms: 92,780; number of observations: 387,125.
d The degree of financial pressure is established according to the debt ratio and debt burden indicators [see Note (b)]. p75 denotes percentile 75 of the distribution of those indicators.

when, against a backdrop of higher risk aversion, credit institutions when granting loans seem to have drawn greater distinctions between borrowers according to their financial solvency.[26] In addition, the correlation intensifies when financial pressure crosses a certain threshold, above which firms present considerably lower investment rates, especially during the crisis.

The normalisation of financial conditions that began at the end of 2012 played an important part in reviving investment

The impact of a firm's financial position on its demand for factors of production may be quantified by model estimates that differentiate between the pre- and post-crisis incidence of the variables used to measure firms' financial strength. The results obtained using a methodology that allows this kind of distinction to be drawn are set out in Table 2.3. It shows that a higher net debt ratio or higher debt burden have a negative impact on investment and hiring at firms (although only over a certain threshold),[27] while higher profitability has a positive impact. Based on these estimates, the effect of the fall in the cost of credit on investment at non-financial corporations may be tentatively estimated at 4% in cumulative terms for the period 2014-2015.

The severe employment adjustment prompted sharp falls in private consumption in the first phase of the crisis

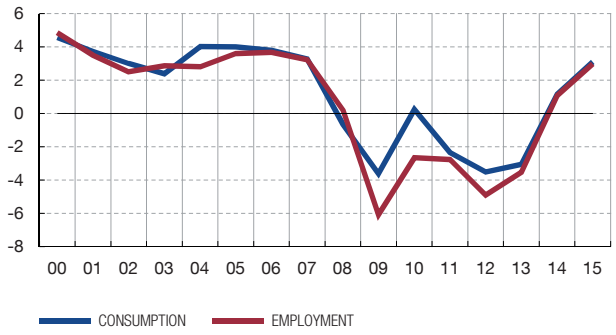
The competitiveness recovery that began in 2008 was initially based on the increase in apparent labour productivity arising from the severe employment adjustment, with no initial response from wages to the abrupt about-turn in the business cycle. These developments triggered a very pronounced adjustment in agents' consumption, as a result of the significant decline in labour income and the increase in precautionary saving in light of the perceived rise in aggregate uncertainty. Thus, in 2009, employment fell by more than 6%, which prompted – despite the high wage increase (4.4%) – a very marked slide (-3.7%) in private consumption (see panel 1 of Chart 2.8). At the same time, the household saving rate rose sharply – by more than 5 pp – to reach 13.4% of gross disposable household income.

26 See Box 5.2 of the 2014 *Annual Report*.
27 As Table 2.3 shows, the negative impact of those variables on investment and employment is only material in the second sub-period.

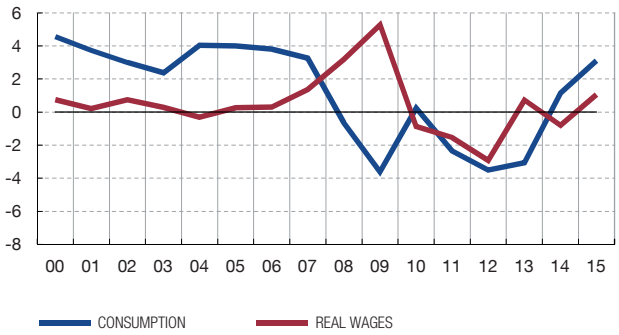
CONSUMPTION, EMPLOYMENT AND WAGES

CHART 2.8

1 CONSUMPTION AND EMPLOYMENT



2 CONSUMPTION AND REAL WAGES (a)



SOURCES: INE and Banco de España.

a Real wages are calculated based on compensation per employee (QNA, INE) and the private consumption deflator.

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Since 2012 the wage moderation process has intensified, driving the recovery in employment…

The protracted negative impact of the crisis on employment and the successive labour reforms approved altered this pattern, as a larger proportion of the adjustment at troubled firms began to be shouldered by wages. This is shown in Font *et al.* (2015) which finds evidence as from 2012 of greater wage responsiveness to unemployment compared with the first phase of the crisis.[28] This greater wage flexibility would seem to have reduced the need for layoffs; in the quarters following the labour reform, the destruction of permanent jobs moderated and, overall, the employment performance was better than expected given the economic situation.[29] Accordingly, the process of wage moderation appears to have encouraged job creation. Moreover, improved financial conditions have also given a further boost to firms' demand for labour; specifically it is estimated that the decline in the cost of credit since mid-2013 may explain 0.8 pp of the employment growth observed in the period 2014-2015 (see Table 2.3).

…and also in private consumption

In turn, job creation seems to have encouraged consumption growth, offsetting a possible negative effect of wage moderation on household spending in the short term.[30] Indeed it is reasonable to believe that if both households and firms factor in the beneficial medium-term effects of the containment of labour costs on investment and employment, the expansionary effects of higher household and business spending will outdo the contractive effects of wage moderation even in the short term (see simulations in Box 2.1).

In the recovery period, the explanatory power of the

The main determinants of private consumption usually considered in the literature are disposable income, wealth and interest rates. In the case of the recent recovery of the

28 See P. Font, M. Izquierdo and S. Puente (2015), *Real wage responsiveness in Spain: asymmetries along the business cycle,* Working Paper 1504, Banco de España.

29 In M. Izquierdo, A. Lacuesta and S. Puente (2013), "The 2012 labour reform: an initial analysis of some of its effects on the labour market", *Economic Bulletin,* September, Banco de España, pp. 17-25, it is shown that positive residuals exist in an "Okun law" type correlation between employment and changes in GDP. Assessments of the effects of the labour reform published by other institutions (such as the OECD or, more recently, the European Commission) coincide in identifying a positive impact on net job creation of the greater wage moderation observed since 2012. See European Commission (2016), *Country Report Spain 2016,* Commission Staff Working Document num. 78, and OECD (2013), *The 2012 labour market reform in Spain: a preliminary assessment,* December.

30 In 2014-2015, a further factor behind private consumption growth was the expansionary effect of the drop in oil prices, which gave rise to a more expansionary performance of real labour income, in a setting of continued nominal wage moderation.

traditional determinants of private consumption increases significantly when labour market variables are included

Spanish economy, the equations that include those variables are not sufficient to fully explain the recent strength of private consumption; this is largely remedied when labour market variables such as changes in employment, the unemployment rate or outflows from employment to unemployment are included. This observation signals the importance of the improved labour market situation to explain the dynamism of household spending in the period.

There is some evidence of the beneficial effects of wage moderation,…

The ability of the usual quantitative tools to explain recent changes in consumption increases when households' disposable income is broken down by employment, real wages and real non-labour income, allowing the marginal propensity to consume to differentiate between those three components of household income.[31] This breakdown by income source permits simulation of how consumption would have reacted had the recent recovery in labour income been based on wage rises, given a constant level of employment. The exercise shows that private consumption would have risen – in this scenario of higher wage increases but stable employment – by just 0.5% in 2014 and 1.1% in 2015, compared with the actual increases of 1.2% and 3.1%, respectively, based on strong employment creation and virtual wage stability in real terms.[32]

…through recovery in consumption among persons taking up employment and a decline in savings on the back of improved employment prospects

A quantitative analysis of the mechanisms of the relationship between consumption and employment may be made by analysing disaggregated consumer behaviour. Panel 1 of Chart 2.9 depicts the rates of change in consumption between 2009 and 2014 according to the employment situation of household heads. The improvement in the economic outlook between the two years prompted a recovery in spending among households where the household head had found employment, seemingly illustrating the direct channel through which an increase in income arising from new employment passes through to a higher level of consumption. Moreover, household spending was higher in 2014, even among households that lost jobs or whose employment situation was unchanged. This seems to show that precautionary saving declined among those households in the most recent period, in light of the general improvement in the labour market situation, even if their own situation did not necessarily improve, as they believed they were less likely to lose their employment or more likely to find employment.[33] Panels 2 and 3 of Chart 2.9 present an additional exercise that depicts the scale of those effects. In particular, they illustrate how consumption performs according to the likelihood of loss of employment in 2009 and 2014, reflecting greater adjustment among households whose heads anticipated that they were less likely to keep their jobs, prompting an increase in saving at the start of the crisis.[34]

---

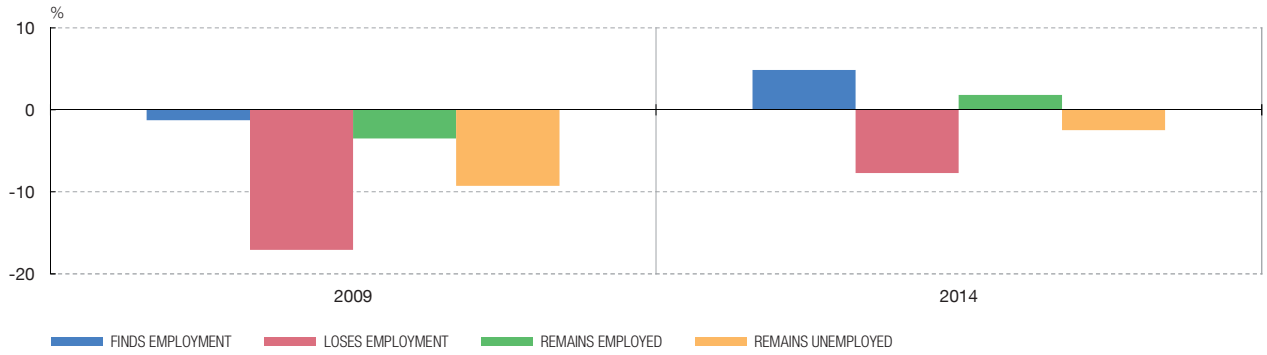
31 Intuitively, households in general will conceivably increase their spending more when they receive an additional unit of money in income from employment growth than when that additional euro of income comes from a wage increase. This is not only because households that find employment spend a larger proportion of that euro compared with households that receive wage rises in the same amount, but also because labour market improvements encourage households that already have employment to reduce their precautionary saving.

32 The difference between the two patterns represents a lower bound to the impact of wage moderation on private consumption, since this partial equilibrium exercise takes no account of other possible negative effects of the lack of containment of labour costs.

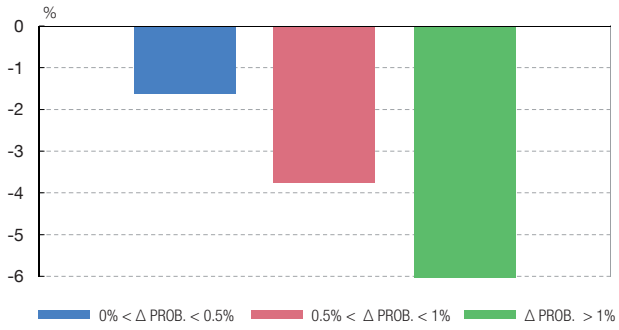
33 Precautionary saving in light of a possible risk of job loss has been documented for the case of Spain by R.G. Campos and I. Reggio (2015), "Consumption in the shadow of unemployment", *European Economic Review,* 78, pp. 39-54, and by C. Barceló and E. Villanueva (2016), "The response of household wealth to the risk of job loss: evidence from differences in severance payments", *Labour Economics,* 39, pp. 35-54. In particular, these articles find that households that are most exposed to job losses reduce their level of consumption and build up their financial wealth until that risk or uncertainty fades. For the United States, see C.D. Carroll, K.E. Dynan and S.D. Krane (2003), "Unemployment risk and precautionary wealth: evidence from households' balance sheets", *Review of Economics and Statistics,* 85, pp. 586-604.

34 See P. Bunn and J.M. Casado (2016), *Precautionary savings and uncertainty during the financial crisis,* forthcoming Working Paper, Banco de España.

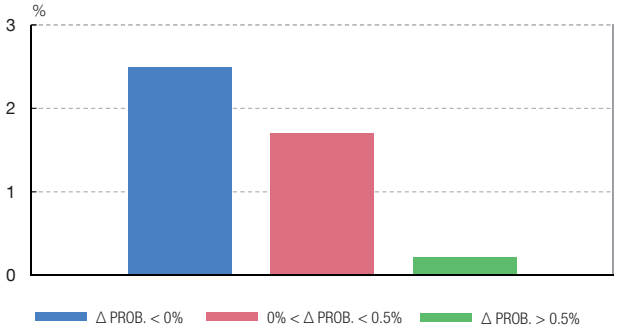
1 GROWTH IN CONSUMPTION (MEDIAN) BY EMPLOYMENT STATUS OF HEAD OF HOUSEHOLD



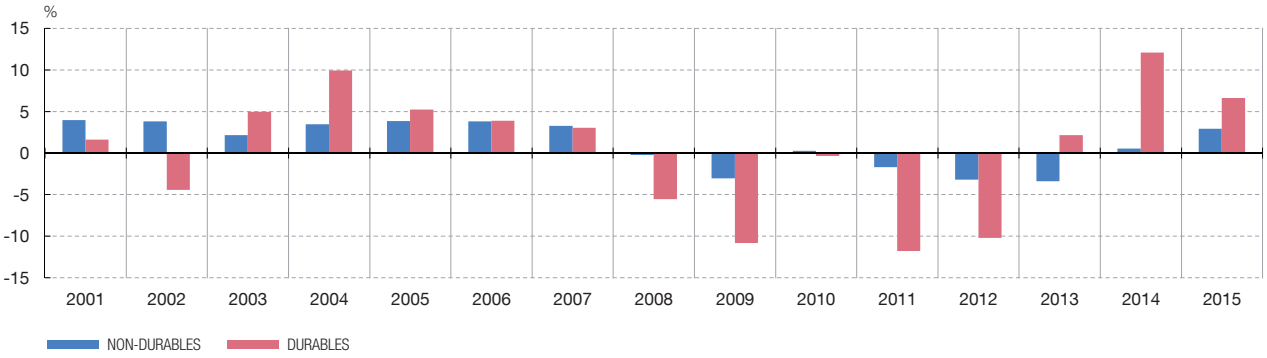
2 RATE OF CHANGE OF CONSUMPTION (by change in likelihood of losing employment) 2009 (a)



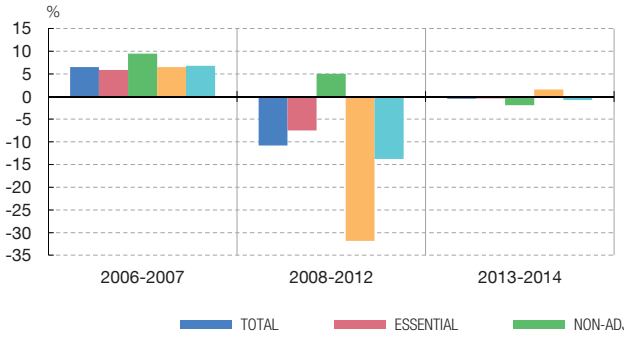
3 RATE OF CHANGE OF CONSUMPTION (by change in likelihood of losing employment) 2014



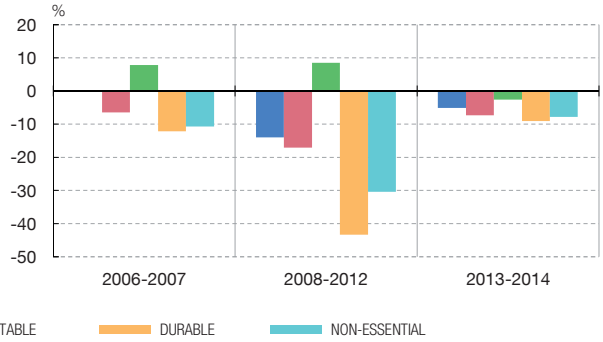
4 RATES OF CHANGE OF CONSUMPTION, DURABLES AND NON-DURABLES



5 CHANGE IN CONSUMPTION BY PERIOD AND TYPE OF GOODS. HEAD OF HOUSEHOLD EMPLOYED



6 CHANGE IN CONSUMPTION BY PERIOD AND TYPE OF GOODS. HEAD OF HOUSEHOLD UNEMPLOYED



SOURCES: INE and Banco de España.

a The likelihood of losing employment is calculated based on the Spanish Labour Force Survery (EPA), while the change in consumption is obtained from Household Expenditure Survey data [see Bunn and Casado (2016) for more details].

Other short-term factors have also underpinned consumption

Lastly, the improvement in consumption in the period 2014-2015 is also underpinned by various other short-term factors relating to spending decisions that were postponed during the recession.[35] In keeping with economic theory, the decline in consumption in Spain during the crisis was uneven between different types of goods and services. In particular, shifting (easily adjustable) demand for durables and non-durables into the future seems to have led to spending decisions being put on hold, giving rise, in the case of durable goods, to a need to rebuild stocks after the deep adjustment that took place during the recession (see panel 4 of Chart 2.9). A more disaggregated analysis shows that, between 2008 and 2012, the adjustment in consumption of different kinds of goods was considerably more pronounced among households where the household head was unemployed (see panels 5 and 6 of Chart 2.9). In addition, in the absence of data for 2015, the recovery in consumption in the economic upturn is proving to be more marked among households where the household head is employed, which are already increasing their spending on durable goods.

5 Conclusions

The competitive adjustment process is important to explain the Spanish economic recovery…

In mid-2013 the Spanish economy began to overcome the consequences of a crisis that has had a profound impact both on activity and employment. The recovery is the result of a combination of highly diverse factors, including the positive effects of policies applied both in Spain and at a European level, together with other more recent, more short-lived and predominantly exogenous factors. One crucial aspect that explains not only the current recovery but also the prospect that it may continue in the medium term is the process of enhanced competitiveness that began with the crisis. This chapter examines the role played by this process when it comes to explaining the present phase of the cycle, through its impact on foreign trade flows and on the various components of private domestic demand. The analysis performed considers two different sources of adjustment compared with the competing economies: on the one hand, relative prices of goods and services, and on the other, production costs, including both labour and financing costs, compared with other European economies.

…that started in external demand developments and subsequently spread to spending by private domestic agents

The positive impact of competitiveness gains on the external imbalance of the economy is first revealed through their ability to boost exports. By contrast, on the import side, the pattern reflects a high degree of synchrony with changes in final demand, with no conclusive evidence found to demonstrate that purchases abroad are being replaced by domestic production. The strength of exports has driven up demand for factors of production, allowing the upturn in external demand to permeate through to domestic spending components, fomenting business investment and employment. In turn, the process of job creation observed over the last three years, which has benefitted from the advantage of it being easier to tailor labour costs and the flexible use of labour to different sector- and firm-specific conditions, has underpinned the recovery in private consumption.

The competitive adjustment process provides considerable support for the medium-term outlook, but it is far from complete

As a result of the relative price adjustment, significant progress has been made in re-establishing the macro-financial equilibrium of the Spanish economy. However, as indicated in Chapter 1 of this Report, this progress is far from sufficient. The external surpluses recorded are based in part on short-term developments and the improvements in cross-border financial flows are still not sufficient to make a significant dent in Spain's high net external debt, which is a source of vulnerability. Lastly, those positive balances with the rest of the world have been achieved in a setting in which, despite the significant progress made in reducing unemployment, full utilisation of productive resources, including labour, is still a

35 See J. González Mínguez and A. Urtasun (2015), "Consumption dynamics in Spain by product type", *Economic Bulletin,* September, Banco de España, pp. 29-37.

very distant target. In order to achieve external surpluses and, at the same time, further reductions in unemployment, the competitive advantages gained in recent years will have to be maintained and further competitive advantages obtained in those areas where there is still room for improvement. In this setting, relative price adjustments are essential to allow resources to be reallocated to sectors with more capacity to generate added value and employment and successfully compete in international and domestic markets.

In the longer term, an ambitious reform agenda is needed to address the challenges outstanding

Moreover, from a long-term perspective, lasting competitive advantages will have to come from enhanced productivity, which in turn hinges on the structural labour and product market reforms analysed in Chapters 1 and 4 of this Report. In addition, this reform agenda is essential to ensure the efficiency of the process of price and cost formation in the economy and to underpin the productive reallocation of resources among firms and sectors and the reduction in the high unemployment rate.

Both the severe economic crisis in the period 2008-2013, which tempered production costs and prices, and the 2010 and, especially, the 2012 labour reforms, designed to allow labour costs to adjust more efficiently to the macroeconomic situation, have helped the Spanish economy to regain competitiveness in recent years. However, the difference between these two factors suggests that it is important to determine which transmission channels operate in each case and their respective impact on economic activity and employment.

The dynamic general equilibrium model developed by Andrés, Arce and Thomas (2014) may be used to illustrate the macroeconomic effects of various shocks and policies that have a moderating impact on production costs and prices.[1] Broadly speaking, this is a model of a small open economy belonging to a monetary union in which both firms and households take on long-term debt to fund their spending and investment decisions.[2] The model simulates two price and cost moderation scenarios: the first resulting from an economic and financial crisis similar to that experienced in Spain since 2008, and the second from reforms in price and wage-setting mechanisms.

In the first scenario, the effects of a negative financial shock leading to tight credit conditions for firms and households[3] are simulated. The blue lines in Chart 1 depict the response of the main macroeconomic variables to the financial shock, which produces a severe contraction in new lending and sets in motion a protracted deleveraging phase that obliges firms and households to cut their consumption and investment spending, at the same time as they gradually pay off their previous debts. The fall in domestic demand gives rise to a sharp contraction in GDP and employment, which translates into a decline in real wages that is partly passed through to producer and consumer prices. As domestic products become cheaper, the terms of foreign trade decline, encouraging exports and import substitution; in addition, purchases abroad are further reduced by lower domestic demand. Accordingly, a negative demand shock similar to that experienced in Spain at the start of the financial crisis gives rise in that setting to a process of persistent decline in domestic costs and prices, fomenting an increase in net exports.

Subsequently, based on the previous scenario, a reform of the wage-setting mechanism that makes the labour market more efficient and nominal wages more flexible is included. This *labour reform* aims to proxy (albeit imperfectly) Spain's 2012 reform.[4] The red lines in Chart 1 depict the response of the economy in that scenario; accordingly, the difference between the red and blue lines measures the impact of the reform. As the chart shows, the reform triggers a further fall in real wages and, therefore, in producer prices and in the terms of trade. This decline in costs and prices has an expansionary effect on demand for goods produced in Spain, in terms both of domestic demand (import substitution) and export demand.[5] Moreover, GDP growth in the medium and long term foments higher investment spending in the short term, insofar as firms anticipate higher future demand. Lastly, the reform also boosts private consumption, largely because its positive impact on employment more than offsets the drop in real wages, with the consequent increase in labour income. In short, the introduction of a supply-side policy such as that analysed here may foment economic activity and employment even in the short term, against the backdrop of an economy hit by recession, with private sector deleveraging resulting from a financial crisis. The beneficial effects of internal devaluation on competitiveness are often weighed against the risk of delaying the deleveraging process and, in consequence, the recovery from recession, owing to the deflationary nature of reforms such as those analysed here. Interestingly, in the context of the model used, even in a highly indebted economy the labour reform considered does not have an overall negative impact on private sector deleveraging. There are two reasons for this: first, the net positive effect of the reform on wage income mentioned earlier, and second, the fact that, as there are long-term nominal debt agreements in place, the deflationary effect of the reform gives rise to only a moderate reduction in agents' current real spending power, since the increase in the real value of debt payments as a result of lower inflation is inversely proportional to the maturity of principal.[6]

As indicated, external competitiveness gains are an important channel for transmission of the expansionary effects of an internal devaluation prompted by a labour reform. A crucial determinant of these gains is the speed at which production costs, and especially wage costs,

1 J. Andrés, Ó. Arce and C. Thomas, *Structural reforms in a debt overhang,* Working Paper 1421, Banco de España,

2 This implies the lack of response by the common monetary policy to the specific developments of that small economy.

3 Specifically, a lasting reduction in loan-to-value (LTV) ratios of loans granted to firms and households.

4 In particular, higher efficiency is instrumented by reducing the mark-ups that workers apply to their wages over and above the level they would have under perfect competition. The decline in these mark-ups has been calibrated so that the reform has an impact of -0.9 pp on the year-on-year rate of growth of nominal wages in the seven quarters following its implementation, which is consistent with the effect of the 2012 labour reform estimated in own calculations by Banco de España staff. In addition, greater nominal wage flexibility is instrumented as a decline in the average duration of nominal wage agreements from four to three quarters.

5 Note that the reform has a scant impact on real imports as a result of two opposite effects: goods produced in Spain become relatively cheaper, which encourages import substitution, while higher domestic demand on the back of the reform drives up purchases abroad.

6 As shown by Andrés, Arce and Thomas (2014), *op. cit.* in footnote 1, where there are nominal debt agreements in place with similar maturities to those observed in Spain in mortgage loans to households and firms, interest payments and repayments of principal made in each period (in the model, in each quarter) are a relatively small portion of total payments throughout the life of the loan. In consequence, in the model, the fall in inflation as a result of the labour reform has a minor impact on the real value of those payments and, therefore, on the spending power of households and firms.

Chart 1
EFFECTS OF TWO INTERNAL DEVALUATION SCENARIOS

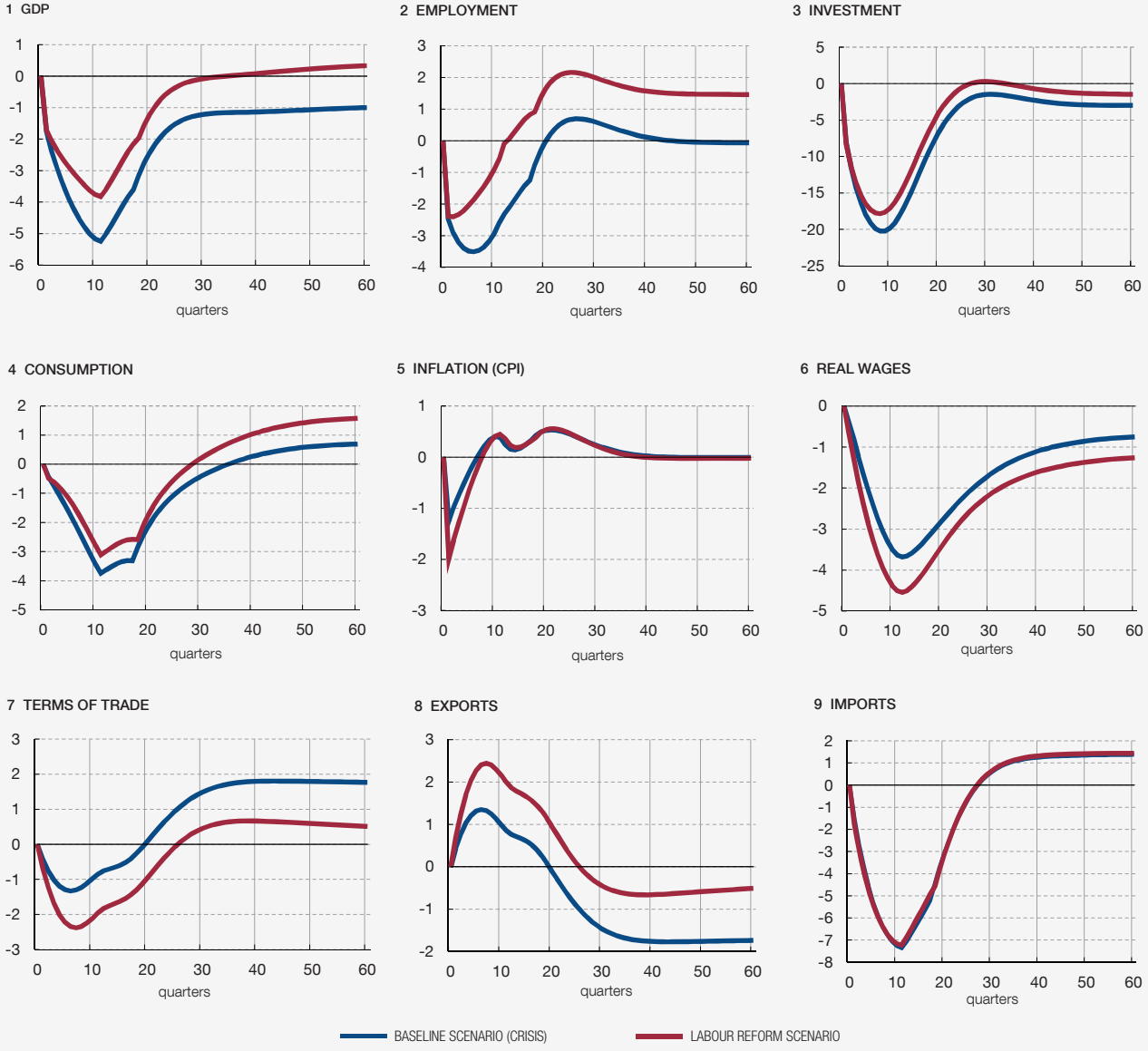


Table 1
SHORT-TERM EFFECTS OF AN INTERNAL DEVALUATION BASED ON STRUCTURAL REFORM (a)

	GDP		Employment	
	Year 1	Year 2	Year 1	Year 2
Base calibration	0.4	1.2	0.7	1.8
Labour reform with no increased wage flexibility	-0.1	0.3	-0.1	0.4
Export elasticity = 0.5	-0.4	0.7	-0.4	1.1
Import elasticity = 0.5	0.1	1.0	0.2	1.5
Labour market reform + goods and services market reform	2.4	3.1	3.6	4.3

SOURCE: Banco de España.

a The table shows annual average effects compared with the no-reform scenario (the baseline "crisis" scenario in the chart). In the "base calibration" scenario, the labour reform includes increased nominal wage flexibility and elasticities both of exports and imports to the terms of trade are unitary.

adjust. To illustrate the importance of this factor, Table 1 compares the effects of the reform described above ("base calibration") with those of a reform that does *not* include increased flexibility of nominal wages. As the table shows, the absence of increased flexibility significantly reduces the expansionary effects of the reform, which may even become contractive in the very short term.

Another determinant of the short-term impact of the labour reform is the degree to which competitiveness gains are passed through to trade flows. In the base calibration of the model, both imports and exports have unit elasticity to the terms of trade, which is consistent with the evidence available for the Spanish economy.[7] As Table 1 shows, against a background of lower elasticity, net exports would appear to be less responsive to wage and price moderation, considerably diminishing the impact of the reform, which could even be negative in the first year.[8] In consequence, for the reform to be successful in the short term in terms of activity and employment, the resultant real effective exchange rate depreciation would have to have a sufficient impact on foreign trade flows, boosting both import substitution and export sales. Otherwise, the improvement in trade flows in the short term will be too feeble to generate sufficient employment to offset, in terms of total labour income, the impact of wage moderation.

Lastly, although to date the analysis has been limited to labour market reforms, simulation of the effects of reforms designed to achieve greater competitiveness in product markets is also relevant. The last line of Table 1 shows the effects of implementing the labour reform described above in conjunction with a reform of product markets, reducing firms' mark-ups between the sale price of their products and the marginal production cost.[9] As shown, including this reform significantly heightens the GDP and employment gains in the short term, largely through the competitiveness channel described earlier. Part of this additional positive effect in the short term is also explained by the fact that, despite its initial impact on inflation, the product market reform helps to shorten the duration of the severe deleveraging process among households and firms, facilitating faster recovery from recession.[10] These results suggest that it is important to complement labour reforms with additional measures in the product markets.

7 See C. García, E. Gordo, J. Martínez-Martín and P. Tello (2009), "Una actualización de las funciones de exportación e importación de la economía española", Occasional Paper 0905, Banco de España.

8 In any event, the expansionary effects as from the second year are robust to low elasticity.

9 The size of the reduction in mark-ups is calibrated so that its impact on competitiveness (measured by the terms of trade) is approximately equivalent to that of the labour reform.

10 See Andrés, Arce and Thomas (2014), *op. cit.* in footnote 1, for a detailed discussion of the similarities and differences between the transmission channels of labour and product market reforms.

The correction of the Spanish economy's external trade imbalance that was first observed at the start of the crisis was essentially linked to the strong export performance. On the import side, there was first a marked adjustment, which lasted throughout the recession. In 2014, however, imports headed sharply upwards, in step with the growth in final demand (see Chart 1). Indeed, the expansionary behaviour of Spanish imports in the period 2014-2015 resulted in the net external balance making a slightly negative contribution to GDP growth. This suggests that the lower import penetration vis-à-vis the pre-crisis level could essentially be a result of the adverse business cycle up to 2013, compared with the secondary role that may have been played by other more structural factors, in particular, the competitive adjustment of the economy.

The literature suggests that the strength of imports throughout the economic cycle is affected by the composition of GDP growth from the demand standpoint, given the differences in terms of import content of the various GDP headings. Specifically in the case of the current economic recovery in Spain, the most dynamic demand components, namely exports and certain sub-components of private domestic demand, are characterised by their high import content (see Chart 2).[1] This would help to explain the strong rate of growth of imports observed in the last two years, making it difficult to identify the opposite effects that the competitiveness gains described in the second section of this chapter may have had.

The importance of the composition of the recovery from the standpoint of demand aggregates when it comes to explaining the strength of imports in the last two years is confirmed by the analysis of purchases abroad from the standpoint of the branches of activity most closely related to the import process, such as those belonging to the manufacturing industry. In particular, there is a very high correlation between the propensity to import and the propensity to export in the industrial sectors (see Chart 3).[2]

The importance of the role of imports in meeting growing demand is confirmed by the fact that fluctuations in demand for finished goods within a specific sector tend to lead to commensurate changes in imports of finished products (see Chart 4), which possibly indicates that not all types of goods are manufactured in Spain. Moreover, the correlation between recent changes in imports by branch of activity and change in relative prices, although positive, is lower (see Chart 5), which suggests that price-competitiveness could also explain part of the changes in imports by branch of activity.

To make a quantitative assessment of the response of imports to the enhanced competitiveness recorded since the crisis, an equation has been estimated that allows the coefficients of the determinants of purchases abroad to change over time. This analysis shows that the response of imports to final demand has changed in recent years, declining at the start of the crisis and then subsequently recovering (see Chart 6). Moreover, the elasticity of imports to relative prices, which was slightly positive throughout the previous expansionary cycle, has been negative since the start of the recession (see Chart 7). This may be interpreted as a first sign that, in the more recent period, purchases abroad may have started to become more sensitive to competitiveness developments.

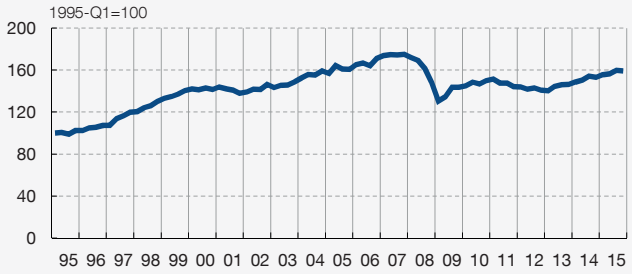
When changes over time in purchases abroad at firm-level are analysed, some additional evidence is found in favour of a certain level of import substitution in recent years, albeit to date still on a very modest scale. In particular, it seems that the composition of Spanish firms' purchases of intermediate goods began to change as from 2012, coinciding with the heightened intensity of the wage moderation process, with a small increase observed in the weight of purchases of goods produced in Spain, to the detriment of those coming from the euro area, while at the same time the proportion of inputs from the rest of the world appears to have steadied (see Chart 8). This is further underpinned by the fact that the increase in the weight of inputs produced in Spain tends to be more pronounced in branches of activity where wage growth has been more moderate.

This evidence of the start of an import substitution process in the Spanish economy is highly tentative, indicating that, for the time being, the scale of the process is limited. The developments observed reflect the fact that reducing reliance on imports is a complex process that requires, by its very nature, a protracted period, even when it is accompanied by competitive advantages that foment the process. In particular, for that process to become widespread and to intensify, the range of goods produced must increase, and especially the proportion of high added value goods, which have relatively high import propensity. However, for that to happen, other ingredients are needed, such as a more highly-skilled workforce and greater capacity for the development of technology innovation, and for implementation of existing technology, which are aspects where progress is expected to be achieved only gradually.

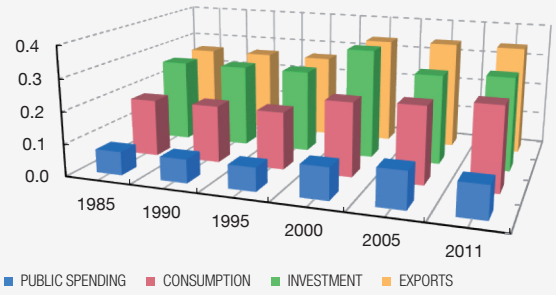
1 The chart depicts the import content of overall investment. Estimates made using the input-output tables show that the import content of the sub-component relating to investment in capital goods is even higher. See J. Martínez-Martin (2016), Breaking down world trade elasticities: a panel ECM approach, forthcoming Working Paper, Banco de España.

2 This correlation may be explained, for instance, by the growing importance of global value chains or the high reliance on purchases abroad for certain products (especially, high technology products) for which there is no domestic market substitute.

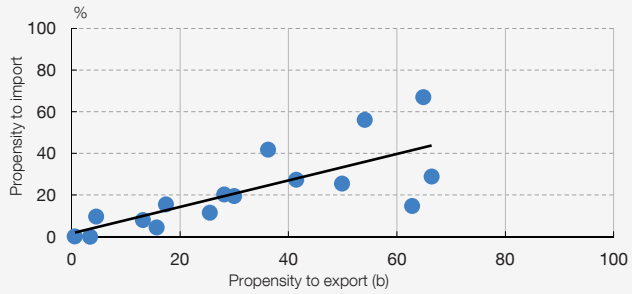
1 IMPORTS / GDP RATIO, SPAIN



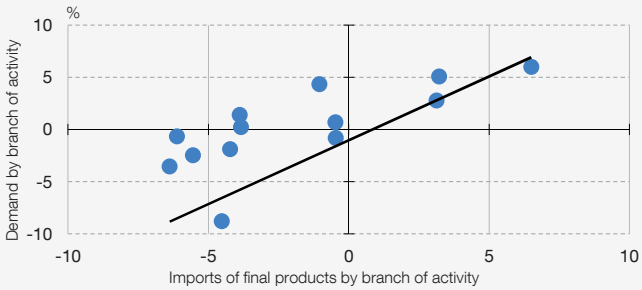
2 IMPORT CONTENT OF GDP COMPONENTS
(based on the OECD's input-output tables)



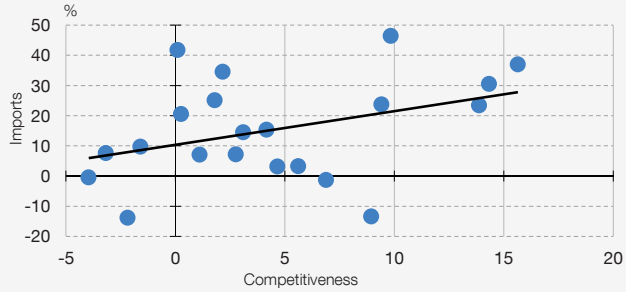
3 PROPENSITY TO IMPORT INTERMEDIATE GOODS: CORRELATION WITH THE PROPENSITY TO EXPORT IN THE POST-CRISIS PERIOD (2009-2013) (a)



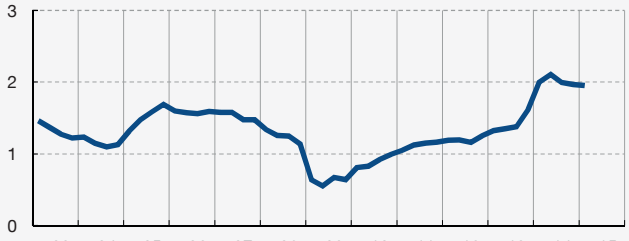
4 CORRELATION BY BRANCH OF ACTIVITY BETWEEN DEMAND AND FINAL IMPORTS
Rates of change in the post-crisis period (2009-2013) (a)



5 IMPORTS OF FINISHED GOODS AND COMPETITIVENESS
Rates of change in the post-crisis period (2009-2013) (a)

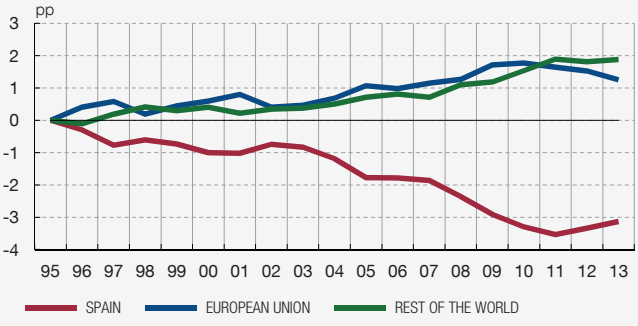


6 ELASTICITY TO DEMAND (LONG TERM)



7 ELASTICITY TO PRICES (LONG TERM)

8 DISTRIBUTION OF INPUTS USED BY SPANISH FIRMS BY GEOGRAPHICAL ORIGIN (c)
Differential since 1995



SOURCES: OECD, INE, Ministry of Economic Affairs and Competitiveness and Banco de España.

a The panels denote different aggregations of the manufacturing branches.
b Propensity to export is defined as the ratio of exports over production.
c Panel of firms for which there are observations for the entire period (estimation with time dummy variables, without fixed effects).

3 THE EFFECT OF THE ECB'S MONETARY POLICIES IN THE RECENT PERIOD

Since spring 2014 the Governing Council of the ECB has deployed a broad raft of monetary policy actions to avoid the materialisation of risks arising from a situation of excessively low inflation over an extended period. The actions revolved around four broad strategic lines which include: setting a negative interest rate on the deposit facility; forward guidance on the future path of policy rates; the use of specific programmes directed at the transmission channels operating through bank intermediaries and the credit supply; and the implementation of a quantitative easing programme involving the large-scale purchase of private and public assets – for an amount equivalent to around 17 percentage points (pp) of euro area GDP during its first two years in operation.

This chapter provides evidence that shows how the ECB's actions have been effective in providing the monetary stimulus required by the demanding macroeconomic situation. It has done so by easing the financial conditions faced by economic agents both in the euro area as a whole and in the Spanish economy. In particular, it is estimated that the ECB's measures have been responsible for the reduction of around 100 basis points (bp) in average euro area long-term sovereign debt yields and of 130 bp in the case of Spain. By using different quantitative tools, the chapter assesses the contribution of the ECB's policies to GDP growth and inflation during 2015 and 2016, identifying some asymmetry in the strength of the effects by country. For the euro area as a whole, it is estimated that the ECB's actions have contributed to raising the level of GDP and of prices by around 1.4 pp and 1.2 pp, respectively, at end-2016. In the case of the Spanish economy, the estimated impact would be close to 1.2 pp on GDP and around 0.9 pp on prices.

Despite the extraordinarily accommodative monetary policy stance, the growth outlook for the area remains modest and medium-term inflation expectations are clearly below the benchmark of 2%. To reduce the risks of a protracted scenario of low economic growth and overly low inflation, and to lay the foundations for a stronger and sounder recovery of activity and employment, there is an ever pressing need for the involvement of other economic policies – particularly in the fiscal and structural arenas and in the area of strengthening the institutional arrangements of economic and monetary union.

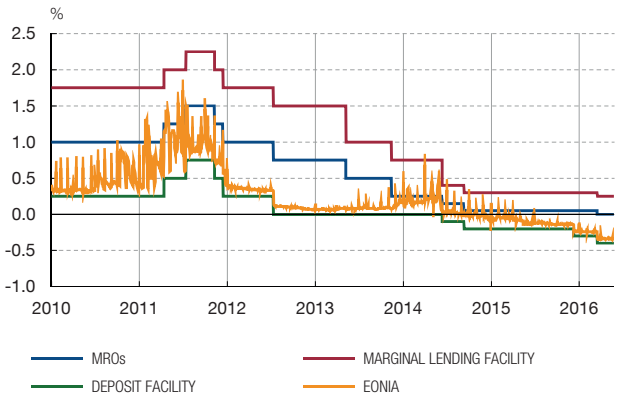
1 Introduction

Against a background of weak recovery in the euro area economy and excessively low inflation, the ECB embarked on a new expansionary phase in its monetary policy in 2014.

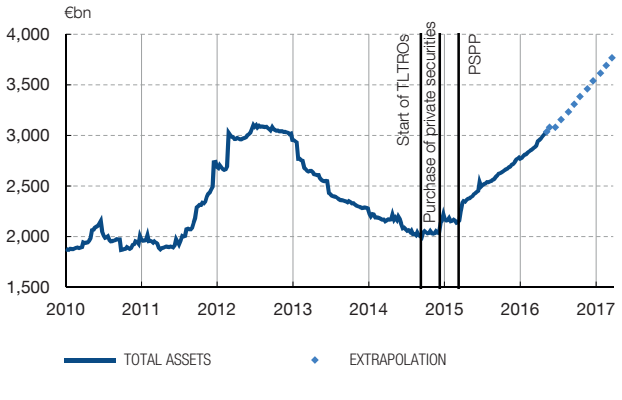
In 2014 the ECB embarked on a new expansionary phase in its monetary policy against a background of weak recovery in the euro area economy and excessively low inflation. The situation required the implementation of a broad raft of actions to overcome the restrictions arising from the increasingly narrow margin for reducing nominal interest rates. In addition to introducing a slightly negative interest rate on the deposit facility, the ECB stepped up the monetary impulse by providing long-term funding to the banking system and in 2015 took the historic step of introducing a large-scale Asset Purchase Programme. The worsening of the outlook for inflation last year and at the start of this year made it necessary to strengthen the stimulus from these measures and to fine-tune them.

This chapter analyses the latest expansionary phase of ECB monetary policy, paying particular attention to the Asset Purchase Programme and its transmission mechanisms, since this is the most novel feature in the recent implementation of monetary policy in the euro area. This chapter analyses the main effects of the central bank's various actions since mid-2014 on financial and credit conditions as well as the impact on economic activity and inflation for the euro area and Spanish economies.

1 OFFICIAL INTEREST RATES AND EONIA



2 EUROSYSTEM BALANCE SHEET (a)



SOURCES: Datastream and ECB.

a For the extrapolation, the last-observed value in the balance sheet is increased monthly taking into account the acquisitions of securities envisaged in the expanded Asset Purchase Programme, while maintaining the pace of decline observed in the securities portfolio of the inactive programmes (SMP, CBPP and CBPP2).

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2 A new phase in ECB actions

In 2015, the ECB embarked on a quantitative easing programme...

At the start of 2015, the ECB Governing Council decided to expand the Asset Purchase Programmes then in place to include government debt securities. This measure was adopted in the context of a new phase of ECB actions initiated in mid-2014, in which the size and composition of the balance sheet would become the main tool for setting the monetary policy stance, since there was practically no room for manoeuvre left in the conventional sphere. The initial calibration of the expanded Asset Purchase Programme envisaged monthly purchases of euro-denominated public and private securities[1] for €60 billion, until the inflation rate returned to a sustained convergence path in line with the medium-term objective, or at least until September 2016. This entailed a liquidity injection of more than €1,100 billion (around 11% of euro area GDP), so that the ECB balance sheet, which accounted for around 20% of GDP at the beginning of 2015, would expand to slightly more than 30% of GDP by the end of the minimum 19-month programme period (see Chart 3.1).

...which marked a quantum leap in the actions that the ECB had been adopting until then.

The decision to buy public debt marked a quantum leap in the actions adopted by the ECB since the summer of 2014. Thus, on the one hand, the Governing Council reduced official interest rates, bringing the rate for main refinancing operations down to 0.05% and credit and deposit facility rates to 0.30% and -0.20%, respectively, in September 2014. In a setting of excess liquidity, in which the main refinancing operations are conducted with full allotment, the remuneration on the deposit facility becomes the main reference determining yields in the money markets and shaping expectations about interest rates. On the other, the decision was taken to create a new, longer-term, bank financing facility linked to the size and growth of banks' loan portfolios, the so-called "targeted longer-term refinancing operations" (TLTRO). In a context of very timid credit growth, this specific measure aimed to strengthen the monetary transmission channel that operates through bank intermediation. Furthermore, two private Asset Purchase Programmes were launched in the corresponding financing markets for banks

1 To take account of the specific institutional features of the Monetary Union, where monetary policy exists alongside the fiscal policies of 19 Member States, a partial financial risk-sharing system was set up for the government debt securities portfolio, whereby only 20% of potential losses would be shared.

ECB EXPANDED ASSET PURCHASE PROGRAMMES TABLE 3.1

	CBPP3	ABSPP	PSPP	CSPP
	Covered bond purchase programme	Asset-backed securities purchase programme	Public sector purchase programme	Corporate sector purchase programme
Type of security	Private debt	Private debt	Public debt	Private debt
	Covered bonds	Simple transparent securitisations whose underlying assets are loans to the non-financial private sector	Bonds issued by central government and by supranational agencies and institutions in the euro area. Programme extended in December 2015 to regional and local government issues in the euro area	Non-bank corporate bonds
Market	Primary/secondary		Secondary	Primary (a) /secondary
Announcement/start	September/October 2014	September/December 2014	January/March 2015	March/June 2016
Running to	March 2017 at least (extended in December 2015 relative to the initial date of September 2016)			
Volume of purchases	€60 bn monthly from March 2015 to March 2016, €80 bn from April 2016			
Reinvestment policy	Redeemed amounts are re-invested for as long as is necessary			
Volume purchaased (€bn)				
End 2014	30	2	—	—
End 2015	143	15	491	—
April 2016	172	19	727	—

SOURCES: ECB and Banco de España.

a Issues of entities with the status of a public corporation may not be purchased on the primary market.

in the euro area: the programme known as CBPP3, for covered bonds (such as *cédulas hipotecarias* in Spain), and the ABSPP, for simple and transparent securitisations whose underlying assets include loans to households and corporations in the euro area. Both programmes, announced in September 2014, were launched in the final quarter of that year, with purchases both in primary and secondary markets (see Table 3.1).

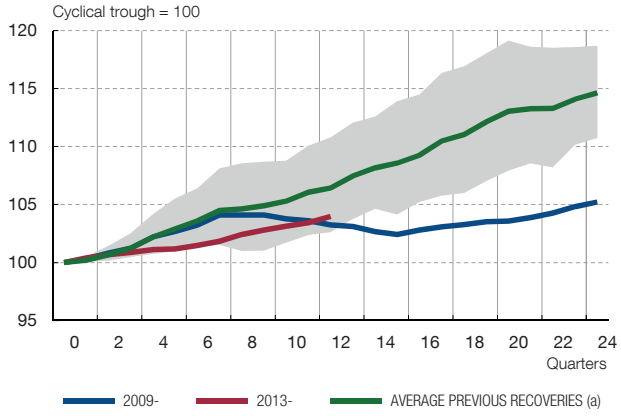
The Asset Purchase Programme stemmed from a context of weak growth and inflation prospects that were far removed from the medium-term monetary policy objective.

The large-scale Asset Purchase Programme was the Council's response to the challenge of ensuring the gradual return of the inflation rate, negative at the time, to levels closer to the reference value of 2%.[2] This challenge had to be addressed in a particularly complex macroeconomic setting, characterised by a very weak economic recovery and a slightly contractionary fiscal policy in the euro area as a whole (see Chart 3.2). Although the fall in inflation provided a stimulus for the economy in the short term by improving agents' purchasing power, the prospect of an inflation rate that remained too low for a prolonged period would eventually constrain aggregate demand, already weakened in some countries by the ongoing deleveraging process, with a rise in real financing costs and the debt burden. Furthermore, this prospect jeopardised the proper anchoring of inflation expectations, and the very credibility of the monetary policy objective. With nominal rigidities in prices and wages, a scenario of excessively low inflation also hampered the ongoing absorption of the imbalances in terms of competitiveness in some euro area countries.[3]

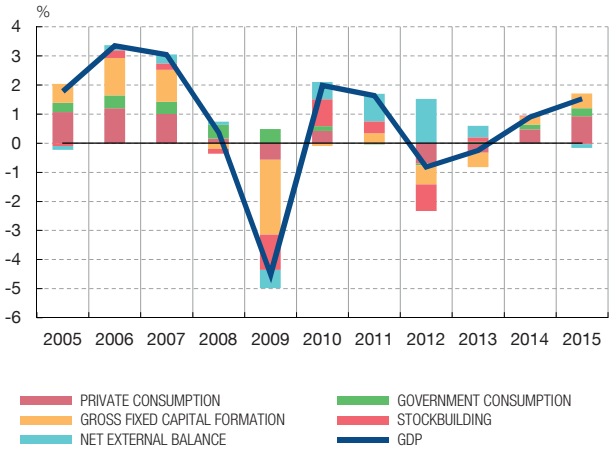
2 See Chapter 2 of the 2014 *Annual Report* of the Banco de España for a more detailed description of these measures.

3 See Chapter 4 of the 2014 *Annual Report* of the Banco de España for an analysis of the channels through which de-anchoring of inflation expectations has negative effects at the aggregate level.

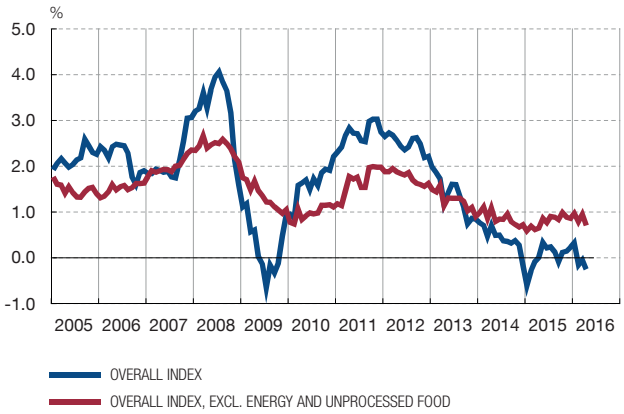
1 REAL GDP. DEVELOPMENTS RECENTLY AND IN PREVIOUS RECOVERIES



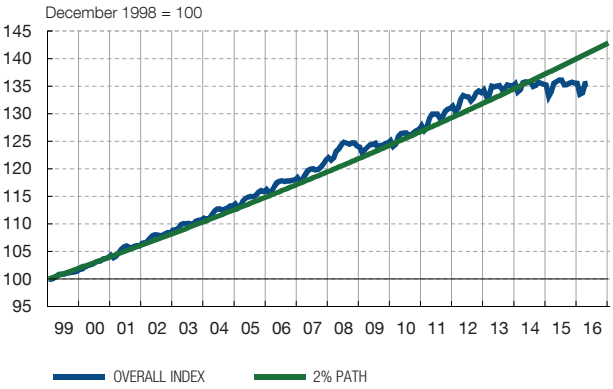
2 GDP AND CONTRIBUTION OF ITS COMPONENTS
Year-on-year growth



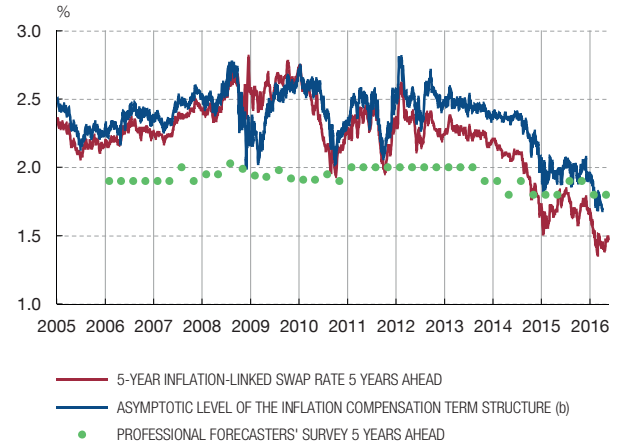
3 HARMONISED INDICES OF CONSUMER PRICES (HICP)
Year-on-year rates of change



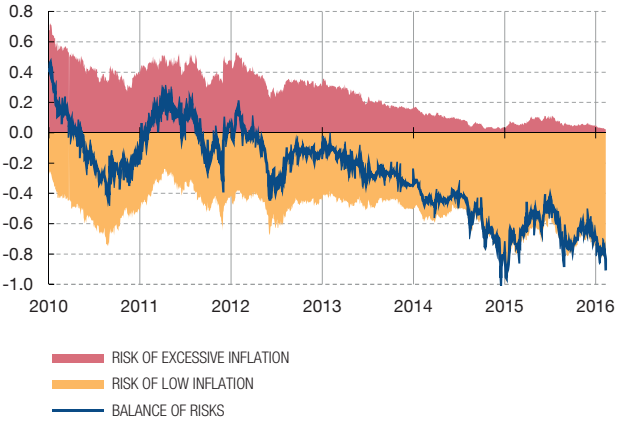
4 HARMONISED INDICES OF CONSUMER PRICES (HICP)



5 MEDIUM AND LONG-TERM INFLATION EXPECTATIONS



6 BALANCE OF RISKS TO PRICE STABILITY (c)



SOURCES: ECB, European Commission, Datastream, OECD and Banco de España.

a Average for recoveries initiated in 1975, 1980 and 1993. The shaded area indicates the GDP low and high attained in these recoveries.
b Estimate by R. Gimeno and E. Ortega (2016), *The Evolution of Inflation Expectations in Euro Area Markets,* Working Paper, Banco de España, forthcoming.
c The indicator is constructed for a parametrisation of price stability defined by the interval (1.8%-2%) following L. Killian and S. Manganelli (2007), "Quantifying the Risk of Deflation", *Journal of Money, Credit and Banking,* Vol. 39, No. 2/3, pp. 561-590. The probability that inflation is situated outside this interval is calculated using option and inflation swap prices in accordance with the methdology of R. Gimeno and A. Ibáñez (2016), *The Eurozone (Expected) Inflation: An Option's Eyes View,* Working Paper, Banco de España, forthcoming.

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The announcement and implementation of the programme helped to boost internal demand, due to the favourable effect it had on financial conditions

As analysed in greater detail in the following sections, the announcement and implementation of the Asset Purchase Programme contributed to easing financial conditions in the early months of 2015 and helped the economy in the euro area to gradually consolidate its recovery. Economic growth relied increasingly on the contribution of domestic demand and, particularly, of private consumption, underpinned by improved consumer confidence and higher purchasing power arising from job creation and cheaper energy prices. Investment, which had been notably subdued and weighed down by the weak prospects for growth in demand, experienced a muted improvement, despite the fact that financing costs, business confidence, profits and capacity utilisation performed favourably.

However, the economic recovery lost momentum as a result of the worsening global growth outlook after the summer months...

In the second half of 2015 and the early months of 2016, it became clear that global growth was not immune to the signs of slowdown observed in the emerging economies since the summer. The global implications of a slowdown in the pace of growth of the Chinese economy and the readjustment in its growth pattern, along with the marked downward path of oil prices, also gave rise to episodes of instability in international financial markets and capital flows, leading to a widespread downward revision of global growth projections and a moderation of the expected pace of normalisation of the Federal Reserve's monetary policy stance. These events were reflected in the euro area, where lower dynamism in exports was only partially offset by the fall in oil prices. Notwithstanding the above, GDP continued on a path of moderate recovery and rose by 1.5% in the whole of 2015, as compared with 0.9% in 2014.

...which reduced the rate of inflation, strongly influenced by the changes in energy prices...

The sharp fall in oil prices, which began in mid-2014 and became more marked from May 2015 on, affected euro area inflation more than expected, the latter remaining close to zero in the second half of 2015 and start of 2016. In parallel, private analysts and international organisations significantly scaled back their forecasts for 2016. In the case of the Eurosystem, the inflation forecast for this year based on their macroeconomic projection exercises fell from 1.5% in March 2015 to 0.1% a year later.

...and had a very negative impact on the prospects of the inflation rate making a sustained return to levels closer to the medium-term reference rate of 2%...

Beyond the obvious direct effects of falling oil prices on the general price index, as 2015 progressed, the medium- and long-term inflation expectation indicators dropped to very low levels, below those observed before the launch of the Programme. Moreover, the correlation between these indicators and those referring to shorter-term inflation expectations pointed to possible problems regarding the anchoring of inflation expectations. The March 2016 ECB staff macroeconomic projections foresaw the inflation for 2017 and 2018 at 1.3% and 1.6%, respectively, clearly far from the medium-term objective of monetary policy.

...which prompted the ECB Governing Council to adopt additional stimulus measures in December 2015 and March 2016

The worsening global macroeconomic outlook from mid-2015 led to a substantial increase in risks regarding compliance with the medium-term target set for price stability, as shown in the balance of risks indicator in Chart 3.2. This situation led to the ECB Governing Council announcing, in October 2015, its intention to review the monetary policy stance so as to ensure that it was appropriate for the new macroeconomic setting. Thus, in December 2015 and March 2016, it adopted a broad package of additional stimulus measures which affected official interest rates on one hand, and the size and composition of the ECB's balance sheet on the other, through a dual channel: the expansion of the Asset Purchase Programme and a new TLTRO series, aimed at strengthening monetary policy transmission through the credit channel.

The ECB Governing Council reduced official interest rates,...

The ECB reduced the deposit facility rate by 10 bp, both in December and in March, to leave it standing at -0.40%. Also, in March, the rate of main refinancing operations and the marginal lending facility rate were reduced by 5 bp, to 0% and 0.25%, respectively. As part

of the communication policy on the future stance of monetary policy, the Council also indicated that official interest rates would remain at those, or lower, levels for a prolonged period and, in any event, beyond the time frame of the net acquisitions envisaged under the Asset Purchase Programme. With this communication strategy, the ECB tried to ensure that short-term interest rate movements passed more efficiently through to the rest of the yield curve.

...expanded the Asset Purchase Programme, both in terms of duration and amount and type of eligible assets...

With respect to the Asset Purchase Programme, the Council recalibrated certain parameters in order to boost its effects. In December 2015, it extended the programme by six months, until March 2017, conditional upon the Council observing a sustained change in the inflation rate to levels approaching 2%. It was also announced that maturing securities purchased under the programme would be reinvested for as long as required. The longer time frame and the reinvestment policy will lead to a significant increase in liquidity until 2019, of around €680 billion (6.5% of GDP). Also, the universe of eligible government assets was adjusted to include debt issued by regional and local governments in the euro area, provided that they meet the remaining eligibility criteria, such as a minimum credit rating.

In March 2016, the Council decided to increase the volume of monthly purchases to €80 billion and to include as eligible assets under the programme bonds from the non-banking corporate sector, by means of the new Corporate Sector Purchase Programme ("CSPP"; see Table 3.1). The CSPP aims to contribute to reducing the cost of corporate bond issues and, insofar as there is a shift in larger firms' financing decisions towards the fixed income markets, it is also expected to have a positive side-effect on the supply of bank loans to smaller firms.

... and introduced a new series of longer-term refinancing operations

Also with the aim of strengthening the transmission channel which operates through the supply of bank loans, in March the Council announced a new series of four targeted longer-term refinancing operations (known as TLTRO-II), to be implemented as from June 2016. These operations will have a four-year maturity and the same fixed rate as the main refinancing operations, which could be brought down to the level of the deposit facility rate if the loan portfolio exceeds a reference benchmark.

3 Transmission channels for quantitative easing measures

3.1 TRANSMISSION TO FINANCIAL CONDITIONS

Asset purchase programmes affect long-term interest rates, mainly through two channels: the signalling channel, which strengthens the central bank's communication policy...

In a setting where the scope for reducing short-term interest is limited, large-scale Asset Purchase Programmes are an effective tool to stimulate aggregate demand, since they affect long-term interest rates, prices and asset returns. The literature based on recent experience highlights two key mechanisms in the transmission process[4].

The first of these is known as the "signalling channel", which capture the effect of these measures on agents' expectations over the future monetary policy stance. The prospect of lower official interest rates or of rates kept at low levels over a more prolonged period immediately influences longer-term rates, insofar as the yield on a long-term bond reflects, among other things, the expected short-term rates throughout the life of the instrument[5]. The signalling channel reinforces the effects of other measures which also have an impact

4 For a broader discussion of these and other channels, see, for example, Krishnamurthy and A. Vissing-Jorgensen (2011), *The effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy,* Brookings Papers on Economic Activity, Autumn, pp. 215-287.

5 Moreover, as the uncertainty over possible changes in official interest rates is reduced, a certain decline may be expected in the term premium, that is, the excess yield demanded by investors for investing in the longer-term, as compensation for possible fluctuations in bond prices in the event of unexpected changes in interest rates.

on official interest-rate expectations[6], such as the publication of guidelines on the future path of monetary policy ("forward guidance")[7].

...and the portfolio rebalancing channel

Quantitative easing measures are also transmitted to asset prices through the adjustments they bring about in investor portfolios. This is known as the "portfolio rebalancing channel". When the central bank purchases securities, it does so against central bank reserves, which are often not perfect substitutes for the assets purchased. Consequently, investors seek to rebalance their portfolios to reinvest this liquidity, either by purchasing the same type of asset as that sold or other close substitutes, which tends to bring down returns on assets on the whole (and push up the price)[8]. The size of the effects will depend on the specific characteristics of the assets purchased, such as credit risk and duration. The effect of euro-denominated asset purchases on the exchange rate also forms an integral part of this channel. The exchange rate will tend to depreciate, either due to the increase in the demand for assets denominated in foreign currencies by euro area investors as a result of the portfolio rebalancing process, or to the decrease in the holdings of euro-denominated assets by foreign investors in a context of falling returns.

The expansionary effects are reinforced by the negative remuneration on the deposit facility

In the case of the ECB, reducing the deposit facility rate to negative levels has served to reinforce the effects of the Asset Purchase Programme in two ways. On one hand, the decrease in the remuneration on the deposit facility directly affects current interbank market rates and interest rate expectations, compressing longer-term rates. On the other, the higher cost of maintaining excess liquidity in the Eurosystem provides an incentive for reinvesting in alternative assets and for bank lending. This innovation, shared with other central banks in Europe and Japan, has shown that the lower bound of nominal interest rates is not necessarily 0%, since cash holdings can yield negative returns once the storage, distribution and insurance costs have been taken into account. However, the capacity to generate additional impulses by pushing negative official rates further down is limited. Below a certain negative value, not easy to identify, the difficulty of passing through negative rates to retail deposits could prevent them from being transmitted to the cost of lending transactions or lead to a narrowing of margins which would hamper banks' intermediation capacity.

Empirical evidence finds that asset purchase programmes have positive effects on long-term interest rates, although there is uncertainty as to the scale of these effects

Recent experience has allowed for empirical evidence to be gathered on the effects of Asset Purchase Programmes on long-term interest rates. However, the broad range of available estimates illustrates the difficulties involved in empirical exercises and the specific features of the different programmes. In the case of the United States Federal Reserve, Williams (2014)[9] estimates that $600 billion of asset purchases (approximately 3% of GDP) would lower ten-year yields by around 15 bp to 25 bp. According to the author,

---

6 Studies highlighting the importance of this channel compared with others in the case of the Federal Reserve include J. Christensen and G. D. Rudebush (2012), "The response of interest rates to US and UK quantitative easing", *Economic Journal,* November, nº 122, pp. 385-414, and M. Bauer and G. Rudebusch (2014), "The signaling channel for Federal Reserve bond purchases", *International Journal of Central Banking,* nº 10, pp. 233-289.

7 For more details see, for example, S. López and P. del Río (2013), "El uso de la orientación de expectativas o *forward guidance* como instrumento de política monetaria", *Boletín Económico,* December, Banco de España.

8 For this effect to occur, certain financial market imperfections must be present to allow for interest rates to react to the supply of bonds available to private investors. Specifically, the literature identifies a liquidity shortage channel where, in the presence of investors with a preferred environment (such as pension funds or insurance companies with a more conservative and long-term investment profile), the demand for the assets purchased by the central bank does not decline, thus pushing up the prices. Alternatively, the effect on the price can also be explained by the fact that the central bank's asset purchases lower the risk level of private investor portfolios (for example, duration risk), exerting downward pressure on risk premia.

9 J. C. Williams (2014), "Monetary Policy at the Zero Lower Bound. Putting Theory into Practice", *Hutchins Center on Fiscal & Monetary Policy at Brookings,* January.

this would be the equivalent of a cut in the federal funds rate of around 75 bp to 100 bp. In the case of the United Kingdom, Joyce *et al.*[10] (2011) estimate that the Asset Purchase Programme of the Bank of England, amounting to £200 billion or 11% of GDP, contributed to reducing long-term interest rates by around 100 bp. In Japan, a review by the central bank itself suggests that the programme launched in April 2014 lowered ten-year rates by 30 bp in the first two years since its introduction, 80 bp in real terms, taking into account the upward revision of inflation expectations[11].

3.2 TRANSMISSION TO AGGREGATE DEMAND AND PRICES

Changes in financial conditions contribute to countering deflationary tensions through the usual transmission channels

The changes described in financial conditions contribute to combating possible deflationary tensions by boosting demand through the usual transmission channels of conventional monetary stimulus. Thus, lower real interest rates favour the bringing forward of current consumption decisions and expand spending on investment and durable consumption since they reduce the user cost of capital. There is also an impact in disposable income[12] and positive wealth effects[13] through asset revaluations. The scale of these effects depends on the size and composition of agents' balance sheets and on the distribution of financial assets among the population. In the case of the public sector, savings in financing costs, and the consequent freeing up of funds, should facilitate the ongoing consolidation processes.

The credit and exchange rate channels are particularly important in the euro area

Given the high presence of banks in the euro area, the effects of monetary policy measures are expected to occur largely through changes in the availability and cost of loans. The fall in interest rates reduces the cost of funding for banks and allows them to apply lower interest rates on new loans, stimulating demand for financing and, consequently, spending. Furthermore, the rise in asset prices contributes to strengthening the net worth of banks, which will experience an increase in their lending capacity, and that of their borrowers, which will see the value of their collateral grow. From the supply standpoint, a backdrop of low returns encourages portfolio rebalancing towards higher-risk assets which should stimulate lending.

Exchange rate depreciation improves price competitiveness of goods produced in the euro area and increases net exports, with expansionary effects on aggregate demand and inflation. It also has a direct effect on inflation insofar as it raises the prices of imported goods and services, whether these relate to final consumption or intermediate goods.

Empirical evidence of the macroeconomic impact of quantitative easing measures is not very extensive

The available studies, focusing especially on the experience of the United States and the United Kingdom, generally identify that this type of programmes has a positive effect on activity and prices. However, the disparity in the magnitude of their estimated effects reveals a very high degree of uncertainty which is even greater than in the case of financial variables. The various approaches in the empirical literature differ in very significant aspects such as the assumptions which permit the identification of what constitutes an exogenous monetary policy stimulus in the non-conventional sphere.

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10 M. A. Joyce, A. Lasaosa, I. Stevens, y M. Tong (2011), "The financial market reaction of quantitative easing in the United Kingdom". *International Journal of Central Banking,* Vol. 7, nº 3, pp 113-161.

11 This is the impact of a programme involving 110,000 billion yen, the amount by which the central bank's holdings of government debt securities increased to December 2014. See Bank of Japan (2015), *Quantitative and Qualitative Monetary Easing: assessment of its effects in the two years since its introduction,* Bank of Japan Review, May.

12 In general, there will be a positive effect for net debtors insofar as lower interest rates feed through to debt servicing costs, increasing their spending capacity. In the case of creditors, however, the future earnings on their assets will fall, with a contractionary effect on their gross disposable income.

13 These effects will foreseeably be less powerful in the euro area than in the United States owing to the smaller holdings of financial assets whose valuation fluctuates according to market conditions, such as bonds and, in particular, shares. See, for example, OECD (2015), "Quantitative easing and household wealth" Box 1.4 *Economic Outlook* Vol. 1.

According to the summary in Constâncio (2015)[14], the available studies for the United States estimate effects of between 0.2% and 1.7% on the level of GDP and between 0 pp and 1.7 pp on the level of inflation per every $1,000 billion of purchases (equivalent to 5.5% of the country's GDP). More recent studies, such as that by Engen *et al.* (2015)[15], have estimated that the size of these effects is slightly lower. In the case of the United Kingdom, it is estimated that the Bank of England's programme has had a positive effect ranging from 1% to 3% on the level of GDP and from 0.2 pp to 2.5 pp for inflation. However, the hypothetical adverse effects which would have occurred if these measures had not been applied were not estimated in any of these studies.

4 An estimation of the effects of the ECB monetary policy on financial and credit conditions

4.1 THE EFFECTS ON THE EURO AREA AS A WHOLE

Since spring 2014, financing conditions in the euro area as a whole have eased significantly

Since May 2014[16], nominal interest rates in the euro area have decreased along the entire yield curve. This decrease was sharper at the longer end of the curve, with interest rates ultimately turning negative even at relatively long maturities (see Chart 3.3). For instance, the interest rate curve based on euro area sovereign debt yields – for all issuers – decreased notably and levelled off significantly. For maturities of three and ten years the reduction was around 75 bp and 150 bp during the two-year period analysed and stood at 0.2% and 1%, respectively, at the cut-off date of this report. This decline was not uniform across countries. While ten-year German *Bund* yields declined by around 130 bp to below 0.2%, Spanish sovereign debt yields decreased by approximately 140 bp to 1.6% and in the case of Italy they fell about 150 bp to 1.5%. The yield on covered bonds issued in the euro area experienced a fall of some 120 bp. Other financing instruments also seem to have benefited from these trends. The exchange rate depreciated notably (by around 20% against the dollar), influenced by the increasingly different monetary policy stance of the Eurosystem and the Federal Reserve which in the case of the latter is less accommodative.

The fall in inflation expectations meant, however, that the easing of financial conditions was lower in real terms than in nominal terms. For example, the decline of around 100 bp in the real yield on ten-year bonds, which stood at levels close to 1%, is 50 bp lower than the nominal decline. In this respect panel 2 of Chart 3.3 shows the downward shift and levelling-off in the term structure of real interest rates as from May 2014.

The analysis of the response of asset prices to monetary policy announcements is not without difficulties...

It is very difficult to isolate the effect on financial markets of a specific monetary policy decision compared with effects caused by other factors such as revisions of the outlook for growth or inflation, changes in the perceived solvency of various institutional sectors, reforms undertaken by certain Member States or progress made in European governance. A commonly used approach to isolate this impact on financial variables is to analyse the response of respective asset prices to different announcements of monetary policy actions. The core assumption is that market prices would react relatively rapidly to central bank announcements, whereas flows of purchases, insofar as they do not provide additional information, would not generate additional expansionary effects on their own. The use of this methodology called *event study* is not without practical difficulties. In particular, it requires selecting the size of the time window during which changes in prices are measured. A very short time span will probably tend to underestimate the effects; however, extending it increases the possibility that the measurement will be biased by the occurrence of other factors. The simultaneous announcement of several measures also raises specific

14 V. Constâncio (2015), *US Monetary Policy Forum Panel discussion on Central Banking with Large Balance Sheets,* presentation in New York, 27 February.

15 E. M. Engen, T. Laubach and D. Reifschneider (2015), "The Macroeconomic Effects of the Federal Reserve's Unconventional Monetary Policies", *Finance and Economics Discussion Series* 2015-005, Washington, Board of Governors of the Federal Reserve System.

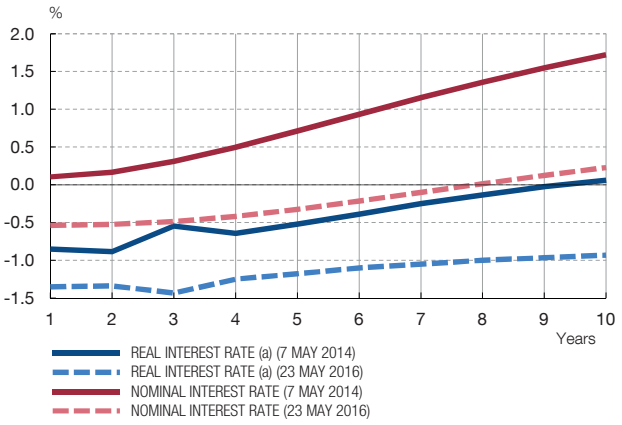
16 The period considered is from 7 May 2014, the day before the Governing Council meeting at which the ECB indicated the need to adjust the monetary policy stance, to 23 May 2016, the cut-off date of this report.

EURO AREA. FINANCIAL CONDITIONS

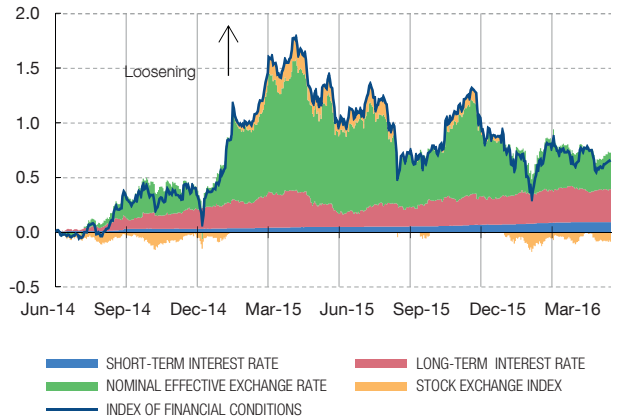
CHART 3.3

1 INTEREST RATES

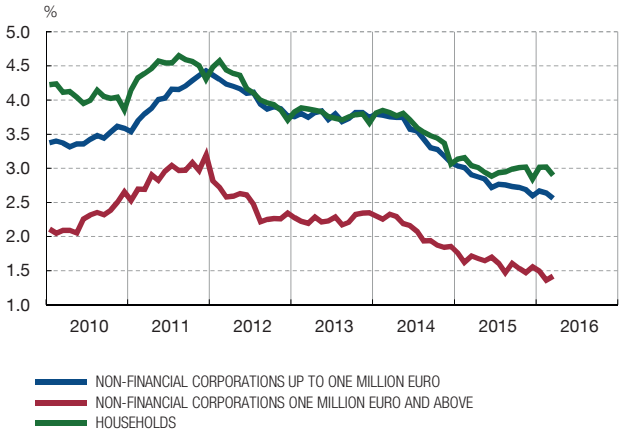
2 YIELD CURVE BY MATURITY. GOVERNMENT DEBT. AAA ISSUERS



3 FINANCIAL CONDITIONS INDEX (b)



4 INTEREST RATES ON BANK LOANS



SOURCES: ECB and Banco de España.

a Calculated as the difference between the nominal interest rate and inflation expected for the corresponding maturity, obtained using inflation swaps.

b Daily frequency index incorporating the four variables represented in the chart, to which the weightings included in the following article are applied: J. Martínez Pagés and E. Ortega Eslava (2000), "Una evaluación de la situación monetaria y financiera en España a partir de un índice de condiciones monetaria", *Boletín Económico,* February, Banco de España.Specifically, 0.18 is used for the short-term interest rate, 0.23 for the long-term rate, 0.10 for the exchange rate and 0.012 for the stock exchange — the first three are included in the index with a negative sign. Given that the changes observed in the variables are not only the result of genuine shocks affecting them, but also of their endogenous performance, the value of the financial conditions index cannot be interpreted directly as an indicator of the monetary policy stance.

problems since it prevents the corresponding effects from being identified separately, as in the case of the ECB with TLTROs, Asset Purchase Programmes, official interest rate decisions and various refinements of its communications policy. Finally, a further difficulty lies in the fact that financial markets usually anticipate the effects of possible subsequent official announcements where the publication of macroeconomic data or public speeches by monetary policy-makers fuel expectations that the central bank will act. Measuring the impact of the decisions taken, for example, in December 2015 and in March 2016 is particularly complicated owing to the presence of considerable anticipatory effects in a context of high volatility in financial markets

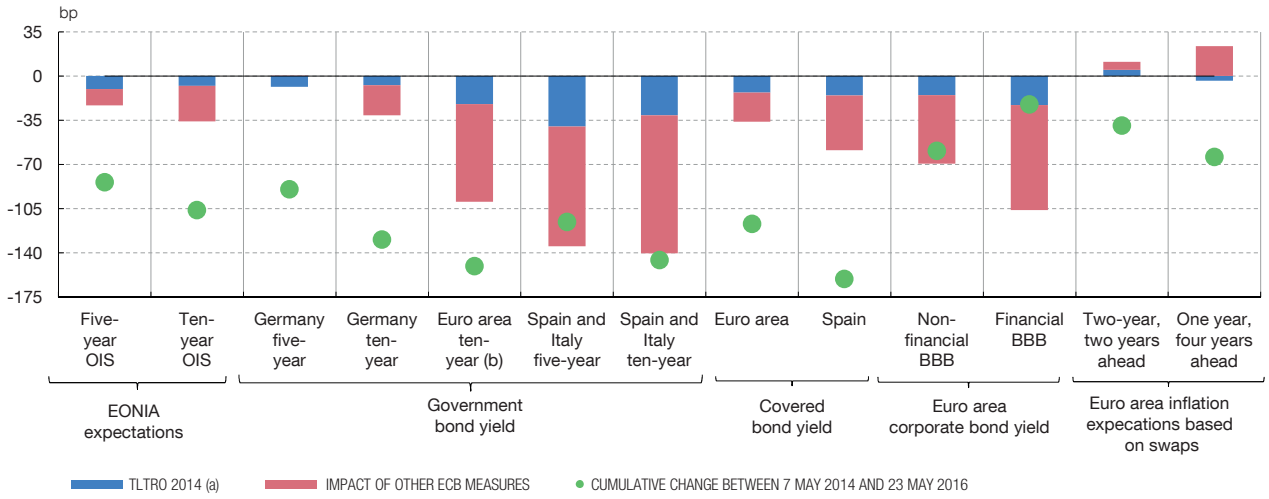
…however, with certain caveats, it attributes a large share of the easing of financial conditions to monetary policy…

With these caveats, this *event study* methodology was used to approximate the impact of the monetary policy decisions of the ECB Governing Council as from May 2014. The exercise is conducted by considering a two-day time window – namely, between the close of the day before and that of the day after the announcement of the measures – for a total

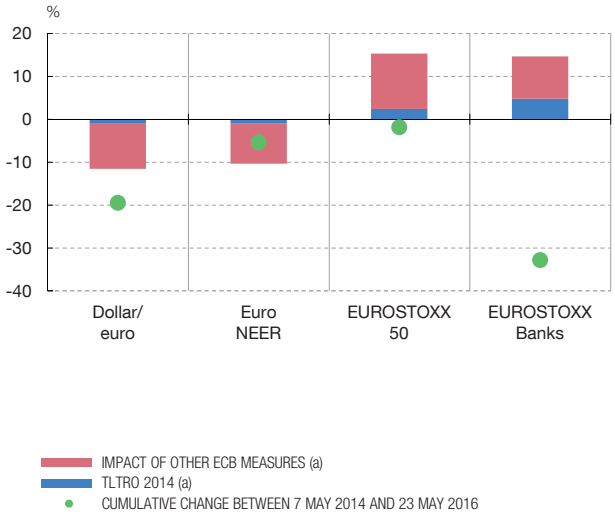
CHANGES IN FINANCIAL VARIABLES DURING THE RECENT PHASE OF ECB ACTION

CHART 3.4

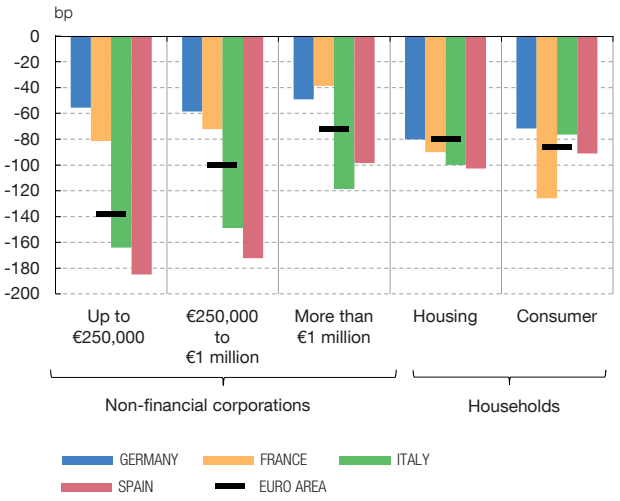
1 CHANGES IN CERTAIN FINANCIAL VARIABLES SINCE MAY 2014 AND CONTRIBUTION OF MONETARY POLICY DECISIONS



2 EXCHANGE RATE AND EQUITIES MARKETS



3 CHANGE IN INTEREST RATES ON BANK LOANS (MAY 2014 TO MARCH 2016)



SOURCES: ECB, Dealogic and Banco de España.

a Event study considering the change in prices with a two-day window around 36 dates when the Governing Council of the ECB announced measures, accounts of its meetings were published or speeches were made by distinguished members of the Council that allowed the possibility of actions being adopted shortly (see footnote 17 to the text) to be anticipated. The TLTRO caption includes the meetings of the Govering Council of the ECB of 8 May and 5 June 2014.

b Estimation made by the ECB using national data.

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of 36 dates when the Council announced measures, accounts of meetings were published or speeches were made by distinguished members of the Council that anticipated the possibility of actions being adopted shortly.[17]

The results of the exercise, presented in Chart 3.4 indicate that monetary policy measures have made an appreciable contribution to the easing of financial conditions in the euro area

17 Until March 2015, the dates were selected in accordance with ECB (2015), *The transmission of the ECB's recent non-standard monetary policy measures,* Economic Bulletin, No 7 and C. Altavilla, G. Carboni and R. Motto (2015), *Asset purchase programmes and financial markets: lessons from the euro area,* Working Paper, No 1864, November, European Central Bank. Other dates considered relevant were added to the aforementioned ones so that the exercise is extended until the Governing Council meeting in March 2016.

since May 2014. The impacts estimated are higher in the case of assets included in the purchase programme – government debt and covered bonds[18] – and the longer the maturity and the higher the risk level, the greater the impacts. Thus, it is estimated that the ECB's measures would be responsible for around 100 bp of the reduction in euro area long-term sovereign debt yields, although this effect would be higher for the securities which initially had higher risk premia: approximately 130 bp and 150 bp for Spanish and Italian sovereign debt, respectively, compared with 30 bp in the case of the German Bund. It is estimated that the effect on covered bond yields was around 40 bp, whereas in the case of yields on the BBB bonds of non-financial and financial corporations it was approximately 70 bp and 110 bp, respectively.

…including stock market gains and a depreciation of the exchange rate,…

Despite the losses posted by stock market indices since May 2014, the Eurosystem's expansionary monetary policy is estimated to have contributed to raising equity prices by more than 15% in the case of the EUROSTOXX index, according to the estimations of the exercise. The analysis seems to indicate that as a result of the ECB's measures, the nominal effective exchange rate depreciated 10% and the exchange rate against the dollar declined by around 12%.

…and a modest improvement in medium-term inflation expectations

Lastly, it should be emphasised that medium-term inflation expectations of market indicators had a positive, albeit modest, reaction to the announcements of the ECB's measures. For example, the exercise estimates that the latter would have increased two-year inflation expectations two years ahead based on inflation swaps by 10 bp. In any event, the size of the estimated effect is insufficient to offset the tightening of financial conditions in real terms which has involved a cumulative fall of 40 bp by the indicator since May 2014.

The loosening of financial conditions resulted in a reduction in the costs of liabilities for euro area banks...

The banks in the euro area also took advantage of the widespread loosening of financial conditions which resulted in the lower cost of debt issuance in capital markets against a backdrop where they had the possibility of accessing long-term central bank funding at very low interest rates through the TLTROs. In turn, retail deposits rates were also subject to downward pressure on account of the levels of money market interest rates, some of which were even negative.

...which the latter passed through in the form of better terms and conditions for bank loans...

On the asset side, banks passed through the rate reduction to the interest rates on loan transactions. As shown in Chart 3.4, the sharpest fall was in the loans extended to corporations for an amount of less than one million euro, targeted mainly at SMEs. The qualitative indicators of the Bank Lending Survey (BLS) and the Survey on the Access to Finance of Enterprises (SAFE) in the euro area also indicate that access to credit has improved. According to the BLS, banks reported that both TLTROs and the Asset Purchase Programme seem to have contributed significantly to the easing of credit conditions, whereas the impact of these programmes on lending standards seems to have been more limited.

...and it triggered a slight recovery in credit

These circumstances fostered the gradual recovery in lending to the private sector in the euro area during 2015 and in 2016 to date. Although the improvement was widespread by country, the respective rates of increase diverged considerably as a result of the deleveraging processes under way in several euro area countries. Thus, lending to the private sector halted its decline, which was still visible at end-2014, and

18 The scant buoyancy of primary securitisation markets, still feeling the toll of regulatory uncertainty, among other factors, prevented the ABSPP purchase programme from being ambitiously deployed.

is currently expanding at a year-on-year rate of around 1% in the area as a whole. The stock of loans to households and non-financial corporations continued to decrease in year-on-year terms in countries such as Spain, the Netherlands, Greece, Portugal and Ireland.

In conclusion, the available evidence suggests that the raft of monetary policy actions applied by the ECB in the last two years has contributed to a considerable loosening of credit conditions

In line with the available evidence for the euro area and other geographical areas, the analysis performed suggests that the monetary policy actions adopted by the ECB have had a considerable impact on financial conditions in the euro area. This impact occurred despite the fact that the ECB took these decisions at a time when, having overcome the most acute bouts of financial instability which affected the euro area in 2011-2012, financing conditions had already loosened considerably. The fact that purchases by the Eurosystem targeted securities with longer maturities and covered a broad range of credit ratings seems to have resulted in the programme being more effective and having a stronger impact on term premia and credit risk premia.

4.2 THE EFFECTS ON FINANCIAL AND CREDIT CONDITIONS IN THE SPANISH ECONOMY

The financial conditions of the Spanish economy followed a similar pattern to those described for the euro area with sharp falls in financing costs...

The financial conditions of the Spanish economy followed a similar pattern to those described for the euro area, although interest rates fell slightly more sharply in Spain. For instance, among the instruments included in the Eurosystem's purchase programme, the nominal yield on ten-year government debt has decreased by approximately 140 bp since May 2014 to levels of around 1.6% while that on long-term covered bonds has declined by more than 160 bp and that on long-term bond issues of non-financial corporations (NFCs) has fallen by around 145 bp. This trend fed through to varying degrees to other financial instruments not included in the programme. It is estimated that the cost of equity[19] of NFCs decreased by around 120 bp in this period. Given that long-term inflation expectations fell during these two years, the real reduction in financing costs seems to have ranged, according to the maturity of the instrument, from 50 bp to 60 bp[20] which is more moderate than the nominal change.

...partly as a result of the Eurosystem's expansionary monetary policy

The impact attributable to monetary policy actions in the reduction of financing costs in the case of the Spanish economy is greater than for the euro area as a whole. In fact, by using the event study methodology in the previous section, these impacts, in nominal terms, are calculated to be around 130 bp for ten-year government debt, approximately 60 bp for covered bonds, almost 90 bp for the cost of long-term bond issues of NFCs and slightly more than 80 bp for the sector's equity[21] (see panel 2 of Chart 3.5). In real terms, the impacts estimated seem to have been only marginally higher, given the modest reaction of inflation expectations to the ECB's measures. The effect on stock market prices during this period was also significant, amounting to more than 15% in the case of the Madrid Stock Exchange General Index, in line with what was seen for the EUROSTOXX index.

Credit institutions passed through the decline in their funding costs to interest rates on loans...

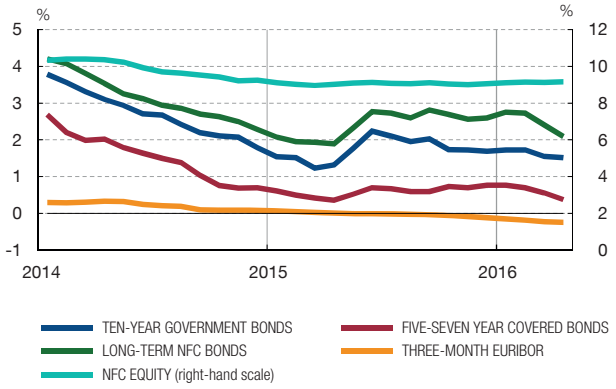
As shown in panel 3 of Chart 3.5, the widespread reduction in interest rates was also reflected in the cost of bank deposits which represent the bulk of their liabilities. Banks which also had access to TLTRO funds passed the lower funding costs through to interest rates on loans. As in the euro area, the decline was across all segments, albeit sharper in

19 The cost of equity is estimated using Gordon's dividend discount model.

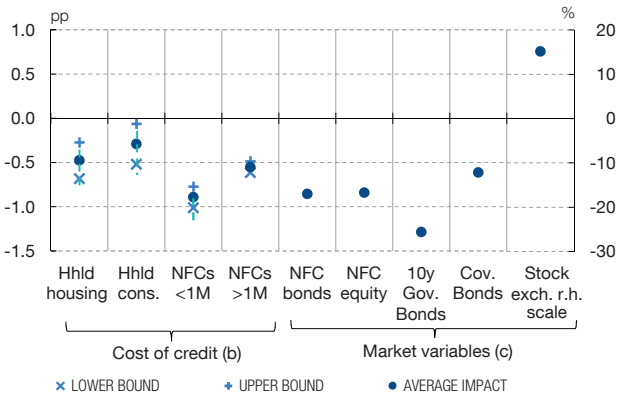
20 Inflation expectations are approximated using inflation swaps.

21 In this case, the estimate probably represents the lower bound of the true impact which was calculated under the assumption that monetary policy has no effect on dividend growth. In particular, Gordon's dividend discount model shows that the change in the cost of corporations' equity is approximately the same as the difference between the dividend yield ratio and the dividend growth rate. Consequently, assuming that this variable does not change, the variation in the cost of equity coincides approximately with the change in the dividend yield ratio. This ratio was calculated using the available information on Spanish listed non-financial corporations.

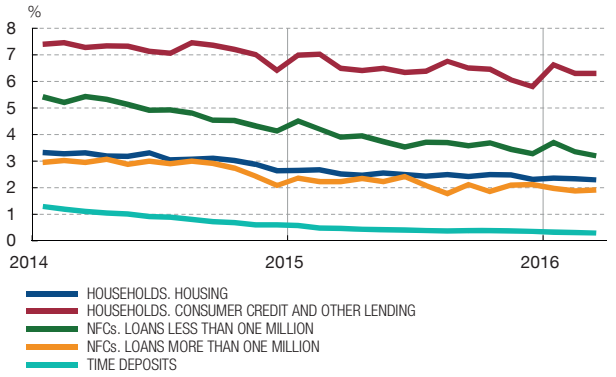
1 FINANCING COSTS



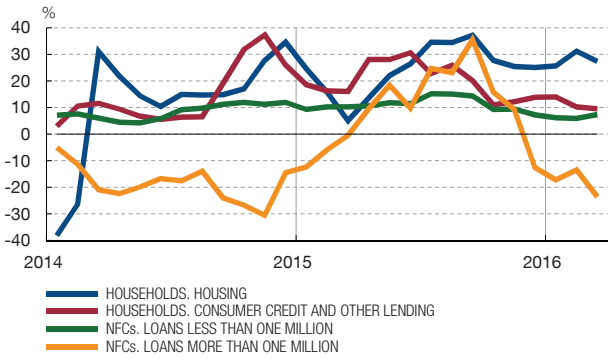
2 EFFECTS OF MONETARY POLICY ON FINANCIAL CONDITIONS (a)



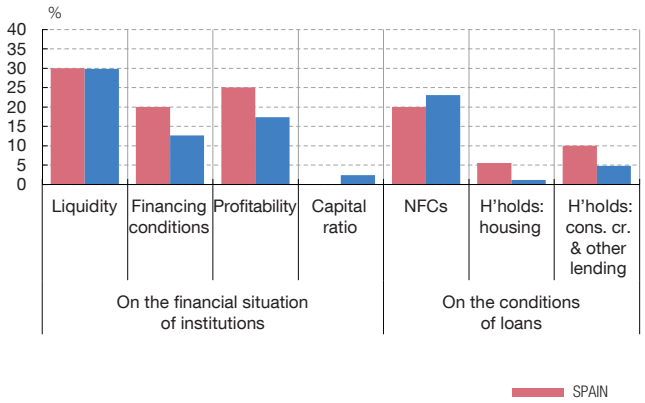
3 INTEREST RATES ON CREDIT AND DEPOSITS



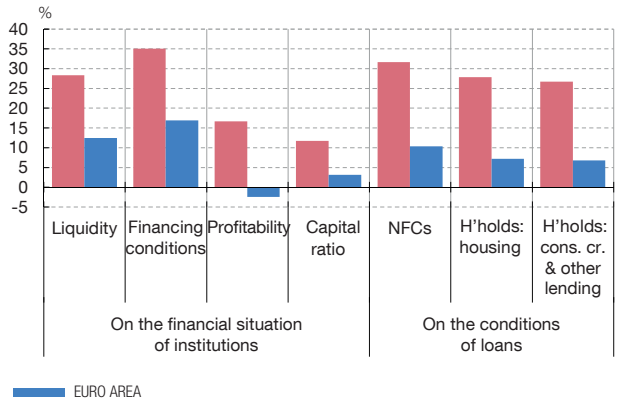
4 NEW LENDING (d)
Year-on-year growth rates. Three-month moving average



5 IMPACT OF THE TLTROs (e) (f)



6 IMPACT OF THE EUROSYSTEM ASSET PURCHASE PROGRAMME (f) (g)



SOURCES: ECB, Dealogic and Banco de España.

a Cumulative effect between May 2014 and March 2016.
b Interest rates on housing loans to households (Hhld. housing), consumer credit and other lending to households (Hhld. cons.), loans to non-financial corporations for less than one million euro (NFCs <1M) and to non-financial corporations for more than one million euro (NFCs >1M).
c NFC bonds: yields on non-financial corporations' bonds; NFC equity: cost of equity of non-financial corporations; 10y Gov. bonds: yield on ten-year government bonds; Cov. bonds: covered bond yields; Stock exch: Madrid Stock Exchange General Index.
d In the housing and consumer credit and other lending segments, as from January 2015, the rate is calculated excluding the restructured loans (the data have only been available for these two segments since December 2014).
e Calculated using the responses to an ad hoc question included in the January 2016 Bank Lending Survey.
f Indicator: percentage of institutions which indicate that the TLTROs or the Eurosystem's asset purchase programme have contributed or will contribute considerably to improving the financial situation or to easing the conditions on loans × 1 + percentage of institutions which indicate that they have contributed or will contribute to a certain extent × 1/2.
g Calculated using the average of the responses to an ad hoc question included in the Bank Lending Survey of April 2015, October 2015 and April 2016.

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higher risk ones such as loans to NFCs for an amount of less than one million euro, where transactions with SMEs are concentrated, and lending to households for consumption and other purposes. In both cases, the cost of these funds started out from considerably higher levels than those observed in the core euro area countries

... and relaxed lending standards

In addition to the decrease in the cost of bank credit, available evidence points to an improvement in access to this type of financing during the period analysed. This is also indicated, for example, by the qualitative findings of the BLS and, to a greater extent, by those of the SAFE and also by the quantitative information of the Central Credit Register of the Banco de España.[22]

The available evidence suggests that part of the improvement in credit conditions is attributable to the Eurosystem's expansionary monetary policy

The responses of Spanish banks participating in the BLS confirm that both the TLTROs and the Asset Purchase Programme seem to have contributed to the improvement in their liquidity and profitability situation and to the decline in their financing costs, seemingly to a greater degree than in the euro area as a whole[23] (see panels 5 and 6 of Chart 3.5). Spanish banks also pointed out that these two actions contributed to the easing of credit conditions and that this, once again, occurred to a greater degree in Spain than in the euro area. The microeconomic evidence presented in Box 3.1 suggests that these effects were slightly stronger in the case of Spanish banks, which started out from less generous funding conditions and participated more intensively in the TLTROs, particularly those for loans to NFCs.

In order to approximate the portion of the decline in the cost of bank credit attributable to conventional and non-conventional monetary policy measures, several econometric models available at the Banco de España were used. These models relate the level of lending rates in each segment to variables such as interbank interest rates (which approximate market interest rates), the unemployment rate (which includes the effect of the economic cycle through credit risk premia) and the spread between Spanish ten-year government debt and the swap rate at the same term[24]. On the basis of these equations, lending rates in the absence of monetary policy measures[25] were projected, which allows the effect of the measures to be estimated as the difference in relation to said projection. The results of this exercise are shown in the form of ranges in panel 2 of Chart 3.5. The average effect estimated ranged from 30 bp to 90 bp and was highest in the segment of loans to firms for amounts of less than one million euro.

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22 For more details on the results of the SAFE, see the Box "Evolución reciente del acceso de las pymes españolas a la financiación externa de acuerdo con la encuesta semestral del BCE", in the "Informe trimestral de la economía española", *Boletín Económico,* December 2015. For the BLS, see, M. García-Posada (2016), "Encuesta sobre préstamos bancarios en España: enero de 2016", *Boletín Económico,* January, Banco de España. The indicator on access to credit based on the Central Credit Register can be found in the *Financial Stability Report* of the Banco de España, November 2015, p. 31.

23 Compared with the euro area, note that the participation of Spanish banks in TLTROs was above the euro area average and that the indicators provided in panel 5 of Chart 3.5 are calculated only on the basis of the responses of the institutions that participated in this programme. Consequently, where the level of the indicator is the same in the two areas, the effect on the banking system will be higher in Spain given that these impacts affect a greater proportion of institutions.

24 Specifically, error correction models were estimated in which the above-mentioned variables are included in the long-term relationship. The estimation was performed with data from the period January 2003-April 2014.

25 The path of interest rates in the absence of measures is constructed under the following assumptions. First, it is considered that interbank rates would have remained constant, therefore attributing the full change in them to monetary policy measures. Second, the effects attributable to the central bank's action based on the event study in the previous section were discounted from the other financial variables. Third, for the unemployment rate, we use the results of a first estimate of the effects of monetary policy, according to the methodology described in the next section which did not take into account the effect of the fall in the unemployment rate on interest rates on credit.

5 A quantification of the macroeconomic impact of monetary policy

5.1 THE EFFECTS IN THE EURO AREA

The available empirical evidence on the macroeconomic effects of non-conventional monetary policy measures deployed recently by the ECB and, in particular, of the Asset Purchase Programme currently under way, is still very limited. According to Constâncio (2016)[26], ECB experts have estimated that, without the monetary policy measures, euro area inflation would have been around 0.3 pp lower in 2015 and would be at very negative levels during 2016. Likewise, he attributes approximately 0.7 pp of growth recorded in the last two years to monetary policy.

Evidence on the macroeconomic effects of the expansionary measures introduced since 2014 is still limited

The estimates made suggest that the ECB balance sheet expansion has had significant positive effects on growth and inflation in the euro area...

A recent attempt to estimate the impact of the ECB's quantitative easing measures on the euro ares economy has been developed at the Banco de España in Burriel and Galesi (2016)[27], which is explained in detail in Box 3.2. The results confirm that the ECB's quantitative easing policy is seemingly having a positive impact on economic activity in the euro area, thus contributing to countering the deflationary trends that have recently affected the area.

The macroeconomic impact of the ECB's Asset Purchase Programme[28] can be simulated on the basis of the above-mentioned study. Taken with due caution and considering the estimation difficulties discussed in the box, the positive contribution of the Asset Purchase Programme to the GDP growth rate and to inflation in the euro area in 2015 is estimated to be 0.7 pp and 0.3 pp, respectively (see Chart 3.6). The impact projected for 2016, which is surrounded by greater uncertainty, is approximately 0.7 pp for GDP growth and 0.8 pp for the inflation rate. This measurement is of a comparable order of magnitude to that referred to in Constâncio (2016), although the estimation exercises are not fully comparable. It is necessary to point out that this type of approach does not usually consider other potentially very significant effects of central bank action geared towards eliminating or substantially reducing the probability of adverse risk scenarios that are difficult to quantify and with potentially very high costs for the economy, such as a hypothetical scenario of a persistent widespread fall in prices.

...with certain cross-country differences...

The estimation presented in Box 3.2 also suggests two results of interest regarding the transmission channels of the quantitative easing programme. First, the portfolio rebalancing channel which operates through the increase in the relative pricing of private assets and the depreciation of the exchange rate contributes most to explaining the total effects. Second, the estimations reveal some differences in the strength of the credit channel across the various countries in the period under analysis; this channel was stronger in the so-called core euro area countries than in the more vulnerable ones. This asymmetry would explain that, although the improvement in financing conditions during the period analysed was greater in the second group of countries, the response of activity

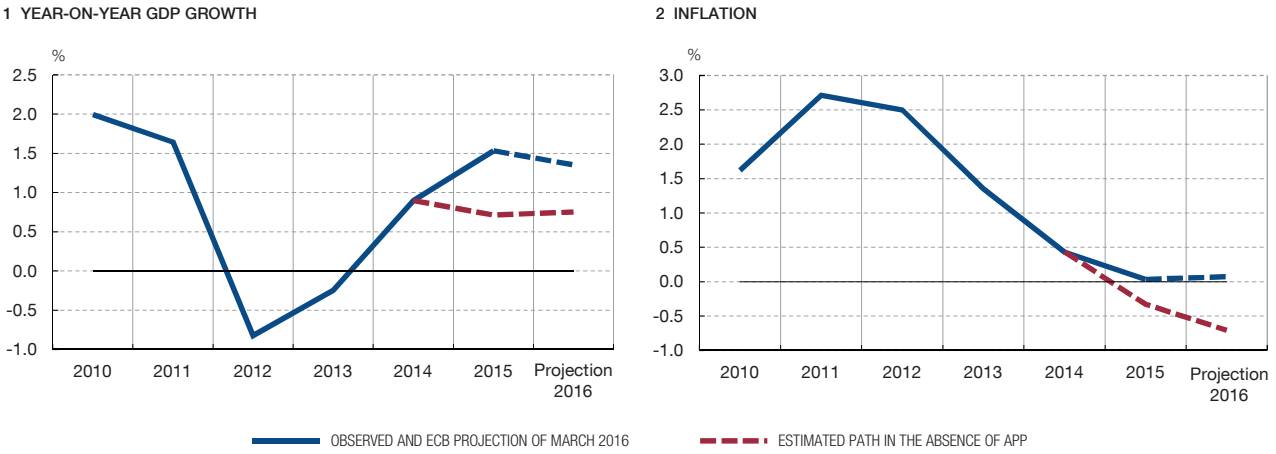
26 V. Constâncio (2016), *In defence of monetary policy,* Opinion piece, 11 March, European Central Bank.

27 They used a global structural vector autoregressive (GSVAR) econometric model estimated with monthly data as from 2008 in which the ECB monetary policy stimulus is identified from the performance of the central bank's balance sheet. See P. Burriel and A. Galesi (2016), *Unconventional monetary policies in the euro area: a global VAR analysis,* mimeo.

28 Using a baseline scenario excluding the purchase programme – in which the balance sheet follows the path marked by the model in the absence of shocks – a scenario with a purchase programme is constructed where the programme's regular purchases according to the decision of December 2015 (€60 billion per month until March 2017) are added to the central bank's balance sheet. The decision of March 2016 to increase the volume of purchases to €80 billion as from April 2016 is considered separately. The exercise does not include, consequently, the effects of, or the interaction with, other measures such as the decrease in the deposit facility rate and does not take into account relevant characteristics in the programme such as the asset class acquired.

IMPACT OF THE ASSET PURCHASE PROGRAMME (APP) ON GDP AND INFLATION IN THE EURO AREA (a)

CHART 3.6



SOURCES: ECB and Banco de España.

a Estimation in accordance with Burriel and Galesi (2016). The ECB March projection exercise does not include the effects of the measures adopted at the March meeting of the Governing Council. For this reason, in order to construct the counterfactual path in the absence of APP, only the effects of the measures adopted until December are considered.

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to the monetary stimulus could have been slightly higher in the core countries of the area.[29]

...given the bottlenecks in the transmission mechanism in certain countries

The latter result is analysed in detail within the framework of a theoretical macroeconomic model developed at the Banco de España by Arce, Hurtado and Thomas (2015) (see Box 3.3). In this model the bottlenecks in the monetary transmission mechanism in the most vulnerable countries occur due to the negative effect of pre-existing excessive indebtedness levels on new credit flows. Thus, the positive impact of the ECB's quantitative easing programme on asset values results in a sharper increase in credit and private spending in the core countries of the monetary union than in those of corporations and households in the more vulnerable economies which have greater indebtedness levels and are immersed in a deleveraging process.

Another possible source of asymmetry in the strength of the credit channel would be the greater weakness shown by the financial system in the more vulnerable countries, especially during the early stages of the crisis, which could have limited their capacity to increase lending[30]. Accordingly, the improvement in the balance sheet position of the banks, resulting from the restructuring of the financial sector or the lower financial fragmentation arising from progress in the banking union process, should tend to bolster the expansionary effects of monetary policy on the economic activity of the area as a whole.

29 For more details on asymmetries in the transmission of monetary policy, see M. Ciccarelli, A. Maddaloni and J. L. Peydró (2013), "Heterogeneous Transmission Mechanism: Monetary Policy and Financial Fragility in the Euro Area", *Economic Policy,* July, Vol. 28-75, pp. 459-512; L. Gambacorta, B. Hofmann and G. Peersman (2014), "Effectiveness of unconventional monetary policy at the zero lower bound: a cross-country analysis", *Journal of Money, Credit and Banking,* 46(4), pp 615-642; and M. Mandler, M. Scharnargl and U. Volz (2016), *Heterogeneity in euro-area monetary policy transmission: results from a large multi-country BVAR model,* Discussion Paper No. 03/2016, Deutsche Bundesbank.

30 For evidence of this channel, see J. Boeckx, M. Dossche and G. Peersman (2014), *Effectiveness and Transmission of the ECB's Balance Sheet Policies,* Woking Paper No 4907, CESifo.

SPAIN. EFFECTS OF THE ECB MONETARY POLICY MEASURES (a) TABLE 3.2

	2015	2016
Financing conditions		
Three-month EURIBOR	-0.4	-0.5
Ten-year government bonds	-1.1	-1.3
Interest rates on housing loans to households	-0.4	-0.5
Total cost of financing NFCs	-0.4	-0.7
Conditions of consumer credit and other lending to households	-3.8	-5.0
Conditions of housing loans to households	-2.8	-5.6
Conditions of loans to corporations	-2.5	-2.5
Stock exchange	7.5	15.1
Euro exchange rate	-10.1	-10.4
GDP of other euro area countries	0.7	1.4
Imports of other euro area countries	1.4	2.8
GDP	0.6	1.2
Private consumption	0.2	0.7
Private productive investment	2.0	3.8
Residential investment	0.5	2.5
Goods and services exports	1.6	2.9
Goods and services imports	1.2	2.4
Contributions to GDP growth		
National demand (excl. change in inventories)	0.4	1.1
Net exports	0.2	0.2
CPI excluding unprocessed food and energy	0.1	0.4
HICP	0.6	0.9

SOURCE: Banco de España.

a Percentage deviations from the baseline scenario levels. The lower panel estimates the effect of the changes described in the upper panel with the Quarterly Model of Banco de España. See S. Hurtado, P. Manzano, E. Ortega and A. Urtasun (2014), *Update and re-estimation of the Quarterly Model of Banco de España (MTBE),* Occasional Paper, No. 1403, Banco de España.

5.2 THE EFFECTS ON THE SPANISH ECONOMY

The Quarterly Model of Banco de España estimates the effects of monetary policy on the Spanish economy through various channels

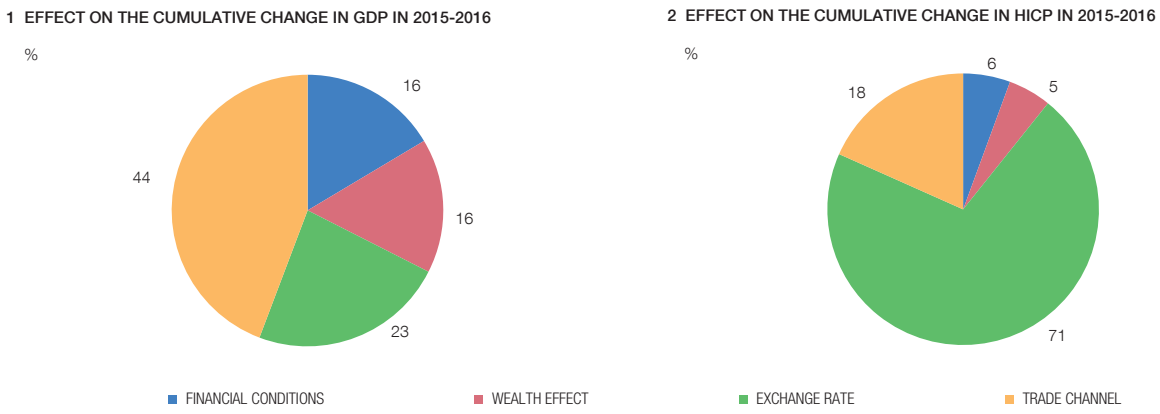
The Quarterly Model of Banco de España (MTBE, by its Spanish abbreviation)[31] allows the impact on the Spanish economy during 2015 and 2016 of the measures adopted by the ECB Governing Council as from spring 2014 to be approximately estimated. The monetary policy stimulus operates through the various channels discussed in Section 4.2 and also comprises the trade channel, which includes the expansionary effect on the euro area economy and its boost to Spanish exports.

The upper panel of Table 3.2 summarises the changes in the exogenous variables of the model which were used to estimate the effects. Specifically, for the three-month EURIBOR and lending standards, the change since spring 2014 is used, implicitly assuming therefore, that the whole of this change is attributable to monetary policy[32]. For the other financial variables and the exchange rate, the calibration is based on the

31 The MTBE is a large-scale macroeconometric model used to make medium-term projections of the Spanish economy and to simulate alternative scenarios. It represents the Spanish economy as a small open economy which is integrated into a monetary union and whose performance is essentially determined by the demand side, especially in the short term. For more details, see A. Estrada, J. L. Fernández, E. Moral and A. V. Regil (2004), *A quarterly macroeconometric model of the Spanish economy,* Working Paper, No. 0413, Banco de España and S. Hurtado, P. Manzano, E. Ortega and A. Urtasun (2014), *Update and re-estimation of the quarterly model of Banco de España (MTBE),* Occasional Paper, No. 1403, Banco de España.

32 The effects estimated should be interpreted, consequently, as upper limits on the real effects which could be expected in practice.

ESTIMATED EFFECT OF ECB MONETARY POLICY MEASURES ON THE SPANISH ECONOMY. BREAKDOWN BY CHANNEL (a) CHART 3.7



SOURCE: Banco de España.

a Estimation of the effect of the change in variables described in the upper panel of Table 3.2 with the Quarterly Model of Banco de España. See S. Hurtado, P. Manzano, E. Ortega and A. Urtasun (2014), *Update and re-estimation of the Quarterly Model of Banco de España (MTBE),* Occasional Paper, No. 1403, Banco de España.

analysis performed in Section 4[33]. Lastly, the effects are estimated for euro area GDP and the imports of the other countries in the area, using the exercise in Box 3.2.

The estimates suggest that the monetary policy stimulus contributed to a cumulative increase in GDP of around 1.2 pp in the period 2015-2016...

The lower panel of Table 3.2 includes the overall effect of these changes in financial and external conditions on the average annual growth rates of the main aggregates of the Spanish economy in the period 2015-2016. The greatest expansionary effects are observed in private productive investment by corporations, which benefit from a higher estimated reduction in their cost of borrowing and respond to the better outlook for the Spanish and European economies as a result of the monetary stimulus, and in exports, owing to the growth of activity of Spain's trading partners in the euro area and on account of the depreciation vis-à-vis trading partners outside the euro area. Imports also reacted to the final demand stimulus with the result that the contribution of net exports to GDP growth is lower than that of domestic demand. According to the results, the ECB's monetary policy measures contributed to raising the level of GDP by around 1.2 pp at the end of the simulation period.

...mainly on account of its impact on the growth of our trading partners and the nominal effective exchange rate of the euro...

As shown in Chart 3.7, which breaks down the estimated total effects on GDP, the most important contribution stems from the trade channel through the growth induced in the euro area and its effect on our exports. Specifically, this would explain 44% of the cumulative increase in activity at end-2016. For its part, the exchange rate channel also played a significant role, explaining up to 23% of the total effect. Finally, the wealth effect (stock market gains) and the improvement in financing conditions (lower rates and more favourable supply terms) would each explain 16%.

...and a cumulative increase in prices of 1 pp until 2016

On the prices side, it is estimated that monetary policy actions in this period contributed to raising the annual average inflation rate of the HICP by 0.6 pp in 2015 and a further 0.3 pp in 2016. The main channel of transmission to prices over the two years was the increase induced by the depreciation of the euro in the cost of imports, especially energy imports.

33 The middle of the estimated range was used in the case of interest rates on credit.

6 Conclusions and challenges

Since spring 2014, the Governing Council of the ECB has used a broad raft of conventional and non-conventional measures available to it,...

Beginning in spring 2014, there were increasing signs of the existence of downward risks to maintaining the medium-term price stability target. Since then, the Governing Council of the ECB has used, within its mandate, a broad raft of conventional and non-conventional measures to avoid the adverse consequences which would arise from a protracted period of excessively low inflation for the euro area as a whole. As analysed in this chapter, the ECB's action was effective in providing the monetary stimulus required by the demanding macroeconomic environment and appreciably eased the financing conditions of the economy. Considered overall, this action will help to sustain the economic recovery of the euro area and will quicken, therefore, the gradual return of inflation to rates more in line with the medium-term monetary policy reference.

...which are comparable with those of other central banks

From a more general standpoint, the actions of the Governing Council have demonstrated that despite the specific institutional features of the euro area, the ECB has a broad raft of monetary policy instruments, comparable with that available to the central banks of other developed economies. As shown by international experience, the capacity to deploy flexibly this set of instruments is essential for ensuring that monetary policy remains effective when official interest rates are close to the zero lower bound, thus guaranteeing the correct anchoring of inflation expectations around values which are in line with the medium-term target.

Despite the accommodative monetary policy stance, the euro area economy continues to recover very moderately, with inflation rates far from the medium-term objective

Despite the extraordinarily accommodative monetary policy stance and the momentum from cheaper energy prices, the pace of recovery in the euro area remains modest, weighed down by persistently high levels of unemployment and public and private indebtedness. Economic growth has been based on the strength of private consumption, while private productive investment has failed to take off, affected by the high uncertainty and growing risks about changes in external demand. While it is foreseeable that in the short term the growth rate of consumer prices will rise gradually as the direct effects of the drop in oil prices are diluted, weak aggregate demand, excess capacity and moderate wage developments will continue to exert negative pressure on euro area inflation. Under these circumstances, ensuring that inflation gradually returns to values close to the benchmark of 2% is the main challenge for ECB monetary policy.

These circumstances pose considerable challenges in various areas such as financial stability...

Encouraging spending and investment decisions, which necessarily involve risk, is an essential part of the monetary policy transmission mechanism under the current circumstances. In this setting, it cannot be ruled out that situations may arise in certain parts of the economic and financial system which prompt resources to be allocated inefficiently and which possibly cause financial stability problems. Notwithstanding the fact that in the current situation no risk factors of this type have been detected for the euro area as a whole, ensuring the synergic action of monetary and macroprudential policy is shaping up as one of the major challenges for the coming years. The pressure exerted by the setting of low nominal growth and very low interest rates on the returns of financial intermediation and, in particular, the banking business[34] should be monitored.

...and should be tackled with the involvement of other economic policies, including the use of fiscal and structural measures as well as those to strengthen the institutional arrangements of the economic and monetary union

Similarly, under the current circumstances, laying the foundations for a sound and lasting recovery of activity, productive investment and employment in the euro area requires the involvement of other economic policies – particularly in the fiscal and structural arenas and in the area of strengthening the institutional arrangements of the economic and monetary union. Thus, euro area countries should use the room for manoeuvre afforded by the Stability and Growth Pact, depending on the specific situation of their public finances, to

34 See the *Financial Stability Report* of the Banco de España and the *Financial Stability Review* of the European Central Bank, both of May 2016.

apply policies to support aggregate demand and activity. Likewise, it is important for governments to recommence the reform drive,[35] to introduce improvements in the functioning of product and factor markets and in the business environment, and to complete the European governance framework.

35 See M. Draghi (2015), *Monetary policy and structural reforms in the euro area,* speech of 14 December 2015, and Chapter 4 of the *2014 Annual Report* of the Banco de España. Ó. Arce, S. Hurtado and C. Thomas (2015), *Policy Spillovers and Synergies in a Monetary Union,* Working Paper, No. 1540, Banco de España, analyse the synergies arising from the joint application of non-conventional monetary policies with structural reforms and fiscal measures in the framework of an asymmetrical monetary union.

The various measures implemented by the Eurosystem over the last two years have led to more favourable financing conditions for Spanish banks overall, and also to improving their liquidity situation. As discussed in the main text of this chapter, it is estimated that these measures contributed to increasing credit supply, mainly as a result of the lower cost of lending. This box provides empirical evidence of these effects and their asymmetric impact on different credit institutions. For this purpose, the various estimates presented in this box link the relative performance of various Spanish institutions since the Eurosystem's new measures were launched in June 2014 with their starting point, in terms of their financing costs and the extent to which they have used the new facilities.

In the case of TLTROs, as the chart below (panel 1) shows, there is a marked heterogeneity as regards the extent to which Spanish banks have had recourse to them.[1] An analysis based on simple correlations shows that the amount requested in the first five bids (between September 2014 and September 2015), as a proportion of total assets, is positively correlated with various individual characteristics, such as the size, the net debtor position in the interbank market, the weight of financing other than deposits from Spanish households and non-financial corporations and the non-performing loans ratio.

The positive correlation with the interbank debtor position and with the weight of wholesale funding may be related to the higher relative cost of this type of funding when set against retail funding. Lastly, the non-performing loans ratio could be indicative of the marginal cost for institutions of accessing new funds, i.e. the higher the cost, the stronger the incentive to resort to TLTROs.[2]

A multivariate regression analysis shows that the two most explanatory variables are non-performing loans and the weight in the balance sheet of the recourse to the Eurosystem before TLTROs were introduced, which jointly explain almost three quarters of the variability across institutions. These results would support the assumption that it was precisely the institutions which had the highest relative costs of access to finance which made the greatest use of the new facilities.

In the case of the securities purchase programme, it is estimated that the most significant effects on institutions arose as a result of the pass-through of lower government bond yields to other instruments traded in the financial markets, including securities issued by financial institutions. This is likely to have particularly benefited the banks with the greatest weight of market-based financing, measured, for example, using the loan-deposit ratio,[3] which, as shown in panel 2 of the chart below, also revealed considerable heterogeneity between institutions in December 2014, before the expansion of the programme to include public debt was announced.

More generally, the set of measures implemented by the Eurosystem since June 2014 would be expected to have had a greater expansionary effect on the supply of bank credit of institutions facing higher financing costs before that date and, consequently, also applying higher interest rates on credit. In keeping with this, available evidence points to a negative correlation between the interest rates applied by Spanish banks to their customers in May 2014 and later developments. Thus, the institutions which had less favourable financing conditions and consequently faced higher average interest rates on term deposits, were those which were subsequently able to reduce the rates to a greater degree (see panel 3 of the chart below). Likewise, the institutions with the highest interest rates on new loans to non-financial corporations are also those which would be expected to have lowered them the most following implementation of the new measures (see panel 4 of the chart below).

The Table below shows the relationship between the different variables indicating the financial position of institutions in May 2014 or their participation in the TLTROs and subsequent performance of lending and the cost at which new loans are granted. The first two columns show that the institutions which had the greatest recourse to TLTRO funds were also those which reduced their interest rates the most on lending to non-financial corporations, including smaller-volume loans, generally relating to loans to SMEs. However, the effects on interest rates of credit to households do not differ significantly considering the extent to which TLTROs were used, nor were notable differences detected in the recent behaviour of lending.[4]

Considering the remaining variables analysed which attempt to approximate, in one way or another, the degree of difficulty of access to finance faced by institutions before the programmes were

1 The results shown in this box are based on a sample of Spanish banks (excluding the subsidiaries of other Spanish or foreign banks), which have provided information on the interest rates on their new lending business with customers. The institutions which have participated jointly in the Eurosystem's TLTRO bids are considered as a single institution. The result is a sample of 20 institutions, representing 85 % of total credit in Spain and 95 % of TLTRO applications.

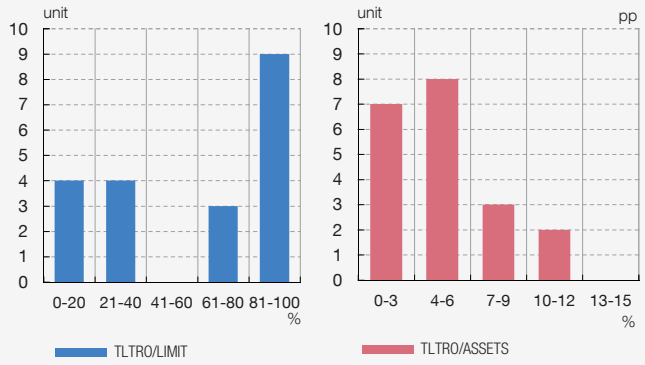
2 This marginal cost is difficult to measure. For institutions participating in the financial markets and issuing securities listed on exchanges, this cost can be measured by the value of the associated CDSs. However, the Spanish banks in this situation are too few to allow for a reliable statistical analysis. The costs of term deposits could be considered an alternative approximation. However, these vary from one institution to another, not only due to the different marginal costs, but also depending on the idiosyncratic features of their customers and the financing strategies in place at each bank.

3 The higher the ratio, the lower the proportion of credit financed with retail funds (deposits) and, therefore, the higher the proportion of credit financed through other channels, mainly the markets.

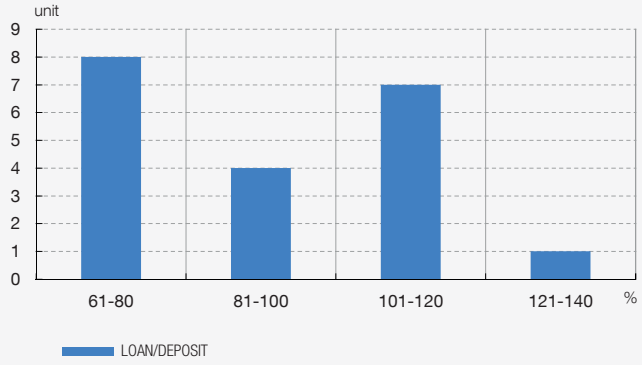
4 Various regression analyses have been conducted, based on specific supply and demand variables and including an analysis of credit supply at bank-firm level using data from the Central Credit Register. However, the results are not reliable, owing to the relatively small number of observations available and the difficulty of adequately measuring the different channels (direct and indirect) through which the Eurosystem measures may have had a bearing on institutions.

Chart 1
MONETARY POLICY MEASURES AND THEIR IMPACT ON SPANISH CREDIT INSTITUTIONS (a)

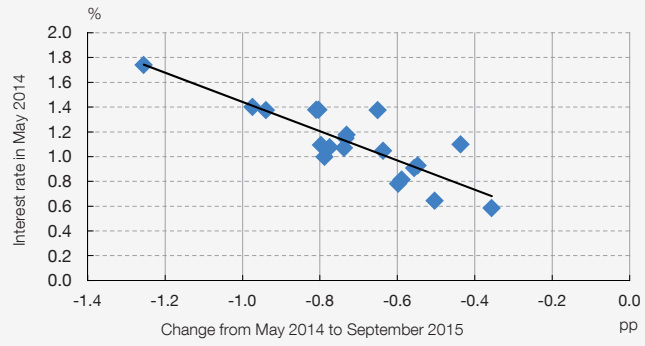
1 DISTRIBUTION OF BIDS IN TLTROS (b)



2 DISTRIBUTION OF THE LOAN-DEPOSIT RATIO AT DECEMBER 2014



3 CHANGE IN INTEREST RATE ON TERM DEPOSITS



4 CHANGE IN INTEREST RATE ON LOANS TO NFCs

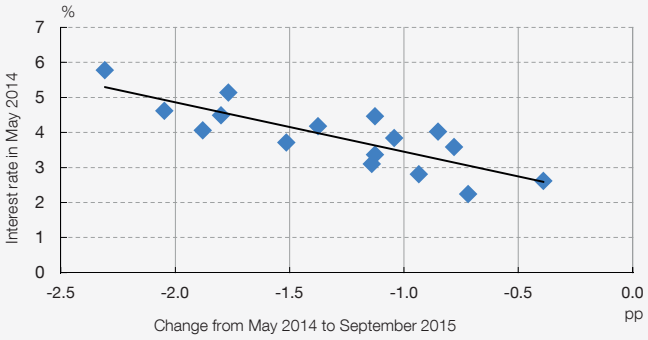


Table 1
CORRELATIONS BETWEEN BANK VARIABLES AND SUBSEQUENT BEHAVIOUR OF CREDIT

Change in interest rates between May-14 and Sep-15	TLTRO/TA (c)		Term-deposit int. rate (d)		NPL ratio (d)		Loan-deposit ratio (d)	
	Simple	Weighted (e)	Simple	Weighted (e)	Simple	Weighted (e)	Simple	Weighted (e)
Housing loans	-0.04	0.03	0.09	0.33	0.17	0.28	0.25	0.40 *
Consumer loans and other lending	-0.08	-0.19	0.37	-0.21	-0.05	-0.40 *	-0.12	-0.12
Loans to NFCs	-0.59 **	-0.62 **	-0.23	-0.52 **	-0.55 **	-0.65 ***	-0.13	-0.43 *
Loans to NFCs <250,000 euros	-0.61 ***	-0.40 *	0.11	-0.51 **	-0.48 **	-0.60 ***	-0.33	-0.40 *
Year-on-year growth of loans in Sep-15								
Housing loans	-0.39 *	-0.14	0.27	0.09	-0.47 **	-0.23	-0.34	-0.22
Consumer loans and other lending	0.33	0.16	-0.31	-0.16	0.38 *	0.33	0.40 *	0.14
Loans to NFCs	0.10	0.17	-0.17	0.34	-0.06	0.06	0.32	0.55 **
Eligible loans in TLTROs	0.31	0.20	-0.11	0.29	0.27	0.13	0.50 **	0.60 ***
Total loans to households and NFCs	-0.12	0.17	0.31	0.42 *	-0.21	0.11	0.17	0.48 **

SOURCE: Banco de España.
NOTE: *, **, *** indicate a correlation ratio which is significantly different from zero, at a confidence level of 10 %, 5 % and 1 %, respectively.

a Corresponding to a sample of 20 institutions representing 85 % of total credit in Spain and 95% of TLTRO applications. It excludes Spanish and foreign subsidiaries and considers all those institutions which jointly submitted bids for TLTRO funds as a single institution.
b Accumulated in the first five bids (September 2014 to September 2015).
c Total volume requested in the first five TLTRO bids as a proportion of total assets.
d In May 2014.
e Correlation calculated by means of weighting observations by the total volume of lending to customers.

announced and, consequently, the likely impact of these programmes on them, a significant effect in the same direction can be observed on the interest rates on credit to non-financial corporations, but not in the case of credit to households. As regards the changes in the amount of lending, there is some evidence of positive correlations in certain segments and in respect of certain variables, such as the loan-deposit ratio. This result suggest that the amount of lending of institutions which had a higher loan-deposit ratio, and which in principle would have benefited more from a reduction of market-based financing costs, tended to perform more dynamically than that of the other intermediaries.

Overall, the results shown in this box are consistent with the positive impact of the Eurosystem measures on credit supply conditions in Spain, particularly visible in the case of loans to non-financial corporations. It is estimated that these effects were more marked at institutions which had started out from less generous funding conditions.

This box simulates the macroeconomic impact of a quantitative easing programme similar to that implemented by the ECB, using a global structural vector autoregressive model developed in Burriel and Galesi (2016). The model efficiently combines aggregate euro area data on changes in monetary policy instruments[1] with other national data on economic activity and the financial position of each member state, with monthly data covering the period 2008-2015. In addition to GDP and consumer prices, the national variables include others that allow a distinction to be drawn by transmission channel. Along with the exchange rate, the model considers a measure of credit risk premium[2] and new lending to capture transmission through the credit channel, as well as an asset price variable to reflect the portfolio readjustment channel.

Estimating the macroeconomic effects of the ECB's quantitative easing measures is a complex exercise. There is no precedent for the extent to which central banks have used non-standard instruments since the onset of the financial crisis in 2007, which means that the empirical analysis must be concentrated on a relatively short period. An added difficulty is the wide range of non-standard measures that the ECB has used in the various phases of the crisis.

In line with the most recent literature, the model uses the change in the Eurosystem balance sheet as a variable to capture the interventions of the monetary authority. In particular, non-standard monetary policy decisions are identified by exogenous balance sheet expansion: that is, an expansion that is not a response to heightened financial tightening and that, at the same time, increases the negative spread between very short-term interbank rates and the interest rate on the main refinancing operations. The first condition excludes changes in the ECB's balance sheet that arise from banking system liquidity requirements in the face of stress situations. This is especially relevant in a setting in which the monetary authority has kept to its liquidity-providing policy with full allotment of the demand for liquidity. The second condition identifies measures that actually increase the level of banks' excess reserves, which should bring very short-term money market rates (Eonia) closer to the ECB's deposit facility rate.

To illustrate the effects, the chart shows the response functions of the model's main variables to an exogenous shock to the size of the central bank's balance sheet (equivalent to a standard deviation of that size). The monetary impulse significantly increases economic activity and prices in the euro area as a whole, through several channels: the portfolio rebalancing channel, by means of the increase in the relative price of private assets; the exchange rate channel, through a real depreciation of the euro; and the credit channel. In the latter case, the decline in the risk premium on lending to non-financial corporations is significant for the euro area as a whole, while the growth in new lending is only significant for non-vulnerable countries. In the case of inflation expectations, although they respond in the expected direction, the estimated impact is not statistically significant.

From a disaggregated standpoint, these results point to certain possible differences in the effect of non-standard monetary policy between different groups of euro area countries. In fact, the estimated impact on growth is greater in the core countries than in the more vulnerable ones, while in the case of inflation the opposite is the case, although the limited length of the period analysed means that it is not possible to conclude that these differences are statistically significant.[3] Analysis of the various transmission channels reveals a relative degree of homogeneity across countries, except in the functioning of the credit channel. In that case, new lending only increases significantly in certain countries (Germany and France), even though the decline in firms' risk premium is on a similar scale. There are two, possibly complementary, explanations for this. First, the high indebtedness of households and firms in the more vulnerable countries may make it difficult for the improvement in credit conditions prompted by a more expansionary monetary policy stance to pass through to an increase in new lending (see exercise in Box 3.3). Moreover, it is in general in the more vulnerable countries where banks have displayed most fragility, especially during the initial phases of the crisis, which may have limited their ability to increase credit.[4]

To sum up, the empirical evidence analysed suggests that the quantitative easing measures taken by the ECB are helping to invigorate aggregate demand and activity and, therefore, to combat the deflationary trends affecting the euro area. One of the main reasons for their effectiveness seems to rely on the fact that measures of this kind, together with the progress made in the Banking Union process and other steps taken at a national level, such as the restructuring of banking sectors, have helped to reduce financial fragmentation in the euro area. This progress, together with other measures still pending in the field of Banking Union and the Capital Markets Union, should prompt a more uniform credit flow among the euro area countries and should, therefore, make common monetary policy more effective.

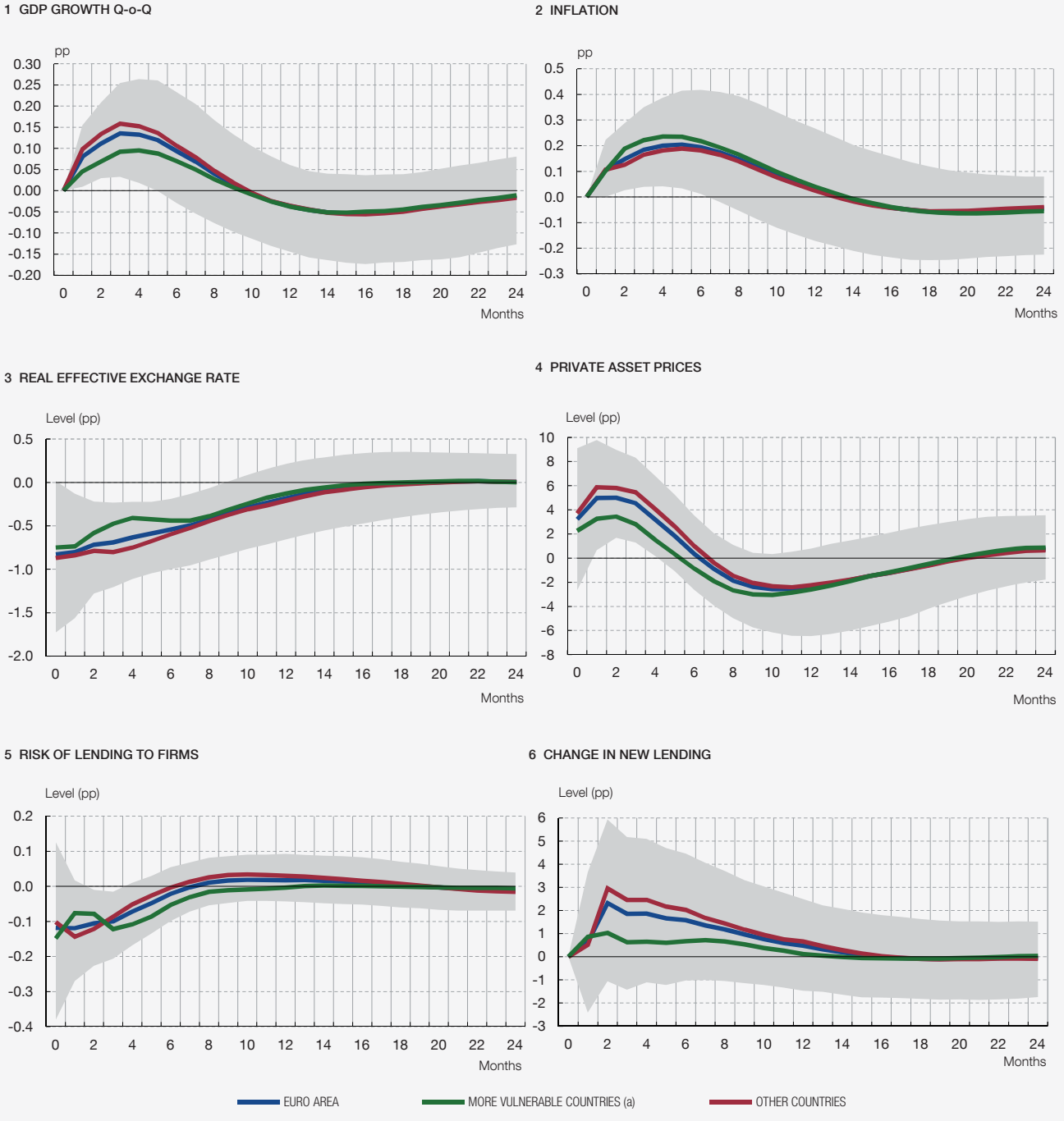
1 Five aggregate euro area variables are included: growth in Eurosystem balance sheet assets; the interest rate on the main refinancing operations; the spread between that rate and the overnight interest rate (Eonia); a financial stress indicator; and long-term inflation expectations.

2 The credit risk premium is, for each country, the spread of non-financial firms' corporate bond yields over government bond yields, in accordance with S. Gilchrist and B. Mojon (2014), *Credit risk in the euro area,* Working Paper 20041, National Bureau of Economic Research.

3 A total of 19 euro area countries are considered, including among the more vulnerable countries Italy, Spain, Ireland, Greece, Portugal, Slovenia, Cyprus, Lithuania, Latvia and Malta.

4 See J. Boeckx, M. Dossche and G. Peersman (2014), *Effectiveness and transmission of the ECB's balance sheet policies,* Working Paper, Nationale Bank van België/Banque Nationale de Belgique.

Chart 1
AN EMPIRICAL ASSESSMENT OF THE ECONOMIC IMPACT OF QUANTITATIVE EASING



SOURCE: Banco de España.
NB: The shaded area represents the confidence interval of a standard deviation relating to the estimated impact for the euro area.

a This group includes Italy, Spain, Ireland, Greece, Portugal, Slovenia, Cyprus, Lithuania, Latvia and Malta.

This box analyses some of the main transmission channels of a government Asset Purchase Programme similar to that implemented by the ECB since early 2015, using as the framework of analysis the macroeconomic model of a monetary union comprising two dissimilar areas ("vulnerable countries" and "core countries") developed by Arce, Hurtado and Thomas (2015).[1]

In the model, households and firms in each country have long-term debt, and their capacity to borrow is limited by the value of their assets admissible as collateral. In addition, the national tax authorities issue both short and long-term public debt, with a yield spread over short-term interest rates that depends positively on the volume of private-sector-held long-term debt.[2]

In order to isolate the effect of an Asset Purchase Programme, first a baseline scenario is built, including some of the characteristic features of the present macro-financial situation in the euro area. Thus, the nominal interest rate set by the common monetary authority has an effective lower bound, against a backdrop of persistently low inflation across the whole of the euro area as a result of the weakness of aggregate demand. Moreover, the vulnerable countries are immersed in a *deleveraging* process in which both households and firms are gradually paring down their debt. This phase lasts until they recover a sufficient level of net financial wealth and are again able to access credit. This scenario is characterised by persistently weak growth throughout the euro area, especially in the vulnerable countries, owing to that deleveraging process.

Taking this base scenario as a starting point, the model simulates the implementation of a long-term government bond purchase programme in which the central bank acquires new bonds in an amount with a distribution by country similar to that of the ECB's Asset Purchase Programme.[3] The model is calibrated such that the purchase programme reduces long-term government bond yields to a similar extent as estimated in a range of studies; in particular, the effect of the programme on sovereign yields in the core euro area is estimated as approximately one third of the effect on sovereign yields in the vulnerable countries.[4]

The chart illustrates the effects of the bond purchase programme on the main macroeconomic variables.[5] The programme has a clearly expansionary effect on economic activity in both areas (the vulnerable and the core countries). This is because the programme reduces long-term government bond yields, which encourages households to increase their consumption spending, with the consequent expansionary effect on aggregate demand.[6]

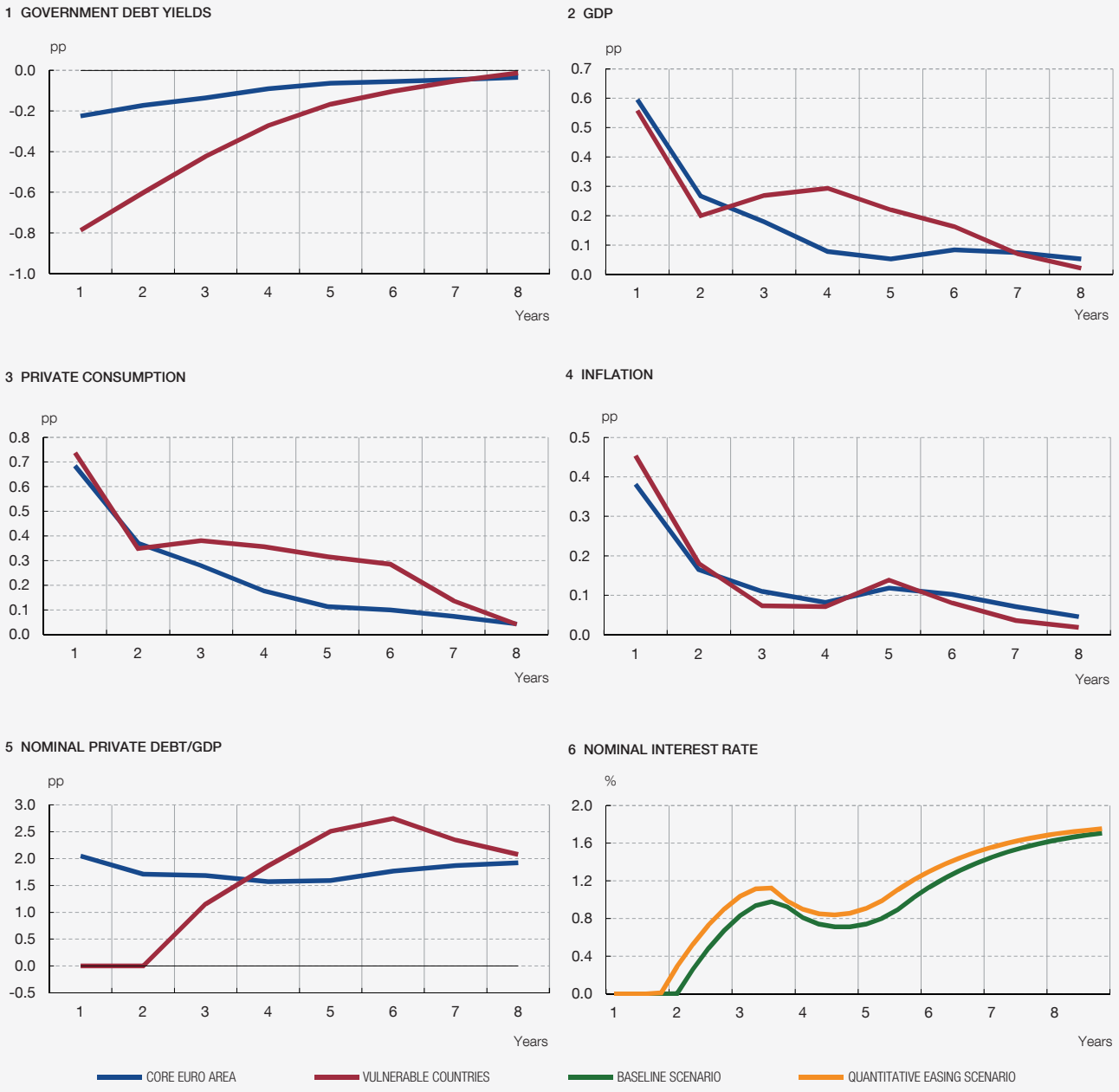
In addition to the channel indicated, which operates in both parts of the euro area, there are other specific channels in each. In the *core euro area,* the positive effect of the programme on the value of assets that serve as collateral in loans translates into an increase in credit and, therefore, higher private spending, thus reinforcing the impact of the programme. In the vulnerable countries, although the programme also increases the value of collateral, neither households nor firms can benefit immediately as they are immersed in a relatively protracted deleveraging process. This asymmetric response of lending activity in the core euro area and the vulnerable countries, which is consistent with the evidence for the euro area shown in Box 3.2, would explain why in the short term the expansionary effects of the programme are somewhat higher in the *core euro area.*

Nevertheless, the increase in the value of assets will allow the net wealth of households and firms in the vulnerable countries to reach the minimum levels necessary in order to access credit again *sooner.* Accordingly, the programme is effective in reducing the duration and intensity of the deleveraging phase and, therefore, in bringing forward the recovery in the flow of credit and activity in the vulnerable economies.[7] An added effect that encourages the deleveraging process in the vulnerable countries is the "debt inflation" channel whereby the additional inflation that is produced by the Asset Purchase Programme reduces the real value of the nominal debt burden of households and firms. The combination of the above-mentioned channels explains the uptick observed in the medium term in the expansionary effects of the programme on private credit, private consumption and GDP in that group of countries (see panels 5, 3 and 2, respectively).

Lastly, the additional inflation generated by a measure of this kind allows the central bank to regain room for manoeuvre in terms of standard monetary policy earlier, following the initial constraint represented by the effective lower bound on interest rates, as shown in panel 6 of the chart.[8]

1 Ó. Arce, S. Hurtado and C. Thomas (2015), "Policy Spillovers and Synergies in a Monetary Union", Working Paper 1540, Banco de España.
2 See H. Chen, V. Cúrdia and A. Ferrero (2012), "The Macroeconomic Effects of Large-Scale Asset Purchase Programmes", *Economic Journal,* 122.
3 Specifically based on the initial configuration of the ECB's Asset Purchase Programme, with monthly purchases of €60 billion, mostly in long-term government bonds.
4 In accordance with C. Altavilla, G. Carboni and R. Motto (2015), "Asset purchase programmes and financial markets; lessons from the euro area", Working Paper 1864, November, ECB.
5 Specifically, the chart shows the *differences* in the changes in those variables compared with the base scenario.
6 The investment response is comparatively smaller than the consumption response in both areas.
7 For a detailed discussion of this aspect in the context of a similar model, see J. Andrés, Ó. Arce and C. Thomas (2014), *Structural reforms in a debt overhang,* Working Paper 1421, Banco de España.
8 In the model, the standard monetary policy rule is a "Taylor rule" whereby the nominal interest rate responds positively to deviations of inflation from its long-term target in the euro area as a whole. Thus, starting from a situation in which the interest rate according to that rule is temporarily below the zero bound, higher inflation (such as that produced by the Asset Purchase Programme) means that the interest rate will be quicker to rise above the lower bound.

Chart 1
A SIMULATION OF THE EFECTS OF A GOVERNMENT DEBT PURCHASE PROGRAMME USING A GENERAL EQUILIBRIUM MODEL



SOURCE: Banco de España.

4 BUSINESS DYNAMICS IN SPAIN: CHARACTERISTICS, DETERMINANTS AND IMPLICATIONS

Business dynamics, i.e. business start-up, failure and growth processes, affect price levels, output and employment and determine efficiency in the allocation of productive resources among sectors and firms. A low business start-up rate usually denotes there are idle productive resources which do not find a suitable use in the productive process. Further, an excessively low business failure rate may also indicate that resources are employed inefficiently in low-growth-potential sectors and firms. The fact that corporations encounter limits to their size is also a symptom of an inefficient allocation of factors of production insofar as they are not geared towards those sectors and companies with a greater value-generation capacity.

This chapter documents firstly certain basic features of business demography in Spain. In particular, the evidence available shows that business start-ups and failures are not abnormally low compared with other European countries. Nevertheless, the poorer outlook for business profitability and the tightening of financial conditions as a result of the crisis have seemingly caused business start-ups to remain at relatively low levels in recent years. Moreover, there are differences in the characteristics of newly created Spanish firms in respect of their size, initial productivity levels and survival rate which seem to be lower than those of other developed economies.

This chapter presents evidence suggesting that companies which obtain productivity gains usually increase their size levels despite distortions of varying kinds (regulatory, economic, financial, etc.) which limit the growth of their employment levels. As a consequence, Spain's business sector is characterised by a relatively high number of small companies with low productivity, irrespective of size.

Secondly, the chapter examines in depth the different financial and regulatory conditioning factors which affect the characterisation of Spanish business demography. From the different pieces of information analysed, it can be concluded that the possible removal of barriers and friction in these areas would generate positive macroeconomic effects, but this in itself does not ensure that there will be sustained economic growth. The latter requires, furthermore, the application of various levers with the potential to directly increase business productivity through improvements in the quality and use of production factors as well as in the functioning of markets and institutions.

1 Introduction

The functioning of product markets is a determining factor of an economy's macroeconomic performance...

In recent years much of the debate about economic policy has focused on whether it was appropriate to undertake structural reforms. Notwithstanding considerable discussion about policies conducive to greater labour market flexibility, the proper functioning of the product markets is also key to facilitating macroeconomic adjustment in the face of economic shocks, to increasing efficiency and, in short, to encouraging higher growth. In fact, there are sound reasons to think that as part of an optimum strategy to improve the economy's structural fundamentals, the regulatory reform of the product market should go hand in hand with and even – in certain circumstances – precede labour market flexibility[1].

...both in the short and long term

In the short term, the behaviour of prices and wages due to changing economic conditions determines the speed and scale of the macroeconomic adjustment. For example, the

1 O.Blanchard and F. Giavazzi (2003), «Macroeconomic Effects of Regulation and Deregulation in Goods and Labor Markets», *Quarterly Journal of Economics,* Vol. 118.

higher the nominal inertia, the greater the decreases in an economy's production and employment following a negative economic shock. The duration and costs of internal devaluation, such as that undertaken by the Spanish economy during the crisis in order to restore competitiveness, also hinges crucially on the nominal rigidity of prices and wages. Greater competition in product markets boosts price and wage flexibility, heightens the impact of the adjustment of the latter on the real exchange rate and, consequently, improves competitiveness (see Chapter 2 of this Report).[2]

The structure of the market in which companies operate is even more significant in the long term. Competition in product markets is directly linked to the incentives for corporations to generate and adopt technological innovation, and it also conditions the allocation of productive resources among the different sectors and firms with varying productivity levels. The channel for incentives for innovation and that for promoting factor reallocation both have implications for productivity growth. This consideration is especially important in the case of the Spanish economy, since certain shortcomings in the functioning of the product and labour markets have been detected recurrently. These shortcomings delay innovation and the adoption of new technologies by hindering the efficient allocation of productive resources and, in short, by reducing productivity growth.

Business dynamics, influenced by the functioning of the product market, are an essential mechanism for improving efficiency and productivity

The limitations on the proper functioning of the product market and their implications for the efficient allocation of resources are usually reflected in the dynamics of the business sector. Consequently, the diagnosis and analysis of the determinants of business start-up, failure and growth rates provide useful information when designing and applying structural reforms aimed at improving the economy's growth potential.

The costs of starting and winding up a business activity determine not only the pace of business start-ups and failures, but the type of firms being created and failing...

Business start-up and failure rates depend not only on the outlook for and expectations about demand but on aspects such as the start-up costs of the business activity or those costs arising from the so-called «second-chance» asset liquidation, business restructuring and reorganisation arrangements. Both types of costs may, moreover, bias business investment towards those assets and sectors where the guarantees offered in contracts and the liquidation of assets in the event of insolvency are less costly to enforce, leading on occasions to an inefficient allocation of resources.[3]

...and different regulatory distortions may limit the growth of the most productive firms

Likewise, there are frictions that affect the adjustment of firm size and condition their growth. Some regulatory "thresholds" operate by discouraging the growth of the most productive firms beyond a certain size. For instance certain fiscal regulations, relating to administrative controls derived from audit requirements, or labour regulations, linked to the firm's staff representation requirements and employee rights, which under Spanish legislation are subject to stricter regulations once employment numbers have reached certain levels, give rise to these types of thresholds. Other frictions add distortions to the relative prices of the factors of production, entailing certain competitive advantages for some firms that are not necessarily the most productive ones. Of note here are certain labour market, financial, sectoral and government procurement accessibility regulations.

Financial conditions fundamentally influence business dynamics

Business start-ups and their entry to new markets also call for the availability of financing providing for the launch of new investment projects and the maintenance thereof until they prove profitable. In this respect, the availability of personal wealth, the functioning of the

2 See J. Andrés, Ó. Arce and C. Thomas (2014), *Structural reforms in a debt overhang,* Working Paper No. 1421, Banco de España.

3 See Ó. Arce, J. M. Campa and A. Gavilán (2013), «Macroeconomic adjustment under loose financing conditions in the construction sector», *European Economic Review,* Vol. 59, pp. 19-34.

credit market and, also, the development of new financing instruments and channels determine, in part, the flow of new business start-ups and the inter-sectoral reallocation of productive resources, along with the movement of such resources towards the highest-productivity firms. In this connection, the recent changes observed in financial markets – some the outcome of the crisis, others the result of intense regulatory reform in this field – should be borne in mind when analysing the factors promoting or restricting the efficient allocation of productive resources across firms.

Improving the quality of the resources available in the economy is essential for raising growth capacity in a sustained fashion

Irrespective of credit accessibility and of the presence of different regulations that distort business start-ups, failures and growth, the strengthening of the business sector will necessarily be boosted by productivity gains. In this connection, improving the population's vocational skills, promoting innovation and the adoption of technology, and eliminating the obstacles to the efficient allocation of resources towards the most productive ends should be an economic policy priority.

On that basis, this chapter offers an in-depth analysis of business dynamics in Spain from three standpoints. Firstly, a series of analytical and quantitative elements are presented that highlight the macroeconomic effects of business dynamics, with regard both to adjustment processes in the short term and to potential growth in the long term. Secondly, business dynamics in Spain are characterised, in comparison with peer countries, and the significance of productivity as a determinant of such dynamics is emphasised. Finally, there is discussion as to what extent Spanish business start-ups, failures and growth are linked to different product and labour market regulations, their financing conditions and the level of employer and employee professional skills.

2 The macroeconomic consequences of business start-ups, failures and growth

An increase in the flows of business start-ups and in the rate of failure of the least productive firms, and a better adaptation of the size of those that remain in the face of changing market conditions, tend to increase the degree of competition in markets and may provide a boost to innovation and the adoption of technology. Likewise, greater business dynamics, in the terms described, provide for the reallocation of resources towards the highest-productivity firms, which translates into higher growth potential for the economy as a whole.

There are several channels through which business dynamics have macroeconomic implications

First, greater business dynamics are conducive to competition,…

In the short term, the greater the competition in markets is, the lower the level of prices and, concurrently, the higher output and employment will be. Furthermore, greater competition also promotes and accelerates the reallocation of production factors towards their most efficient uses. The cost of production may also increase owing to the presence of barriers to entry in the markets for intermediate goods and to excessive regulation or administrative burdens associated with the pursuit of an activity, and to the expenses arising from the lawsuits a firm must face in order to ensure contractual performance.

… facilitate the adjustment of the economy in the face of shocks…

Business dynamics also determine the adjustment of the response to economic shocks. For instance, given an increase in business opportunities, the flow of business start-ups will tend to reduce the average price mark-up relative to unit labour costs, leading to an increase in production, thereby amplifying the impact of the positive shocks. For example, Box 4.1 shows, using a macroeconomic model developed and estimated to capture these effects, that the response of the economy to a temporary increase in productivity is all the greater the lower the costs of business start-ups. Conversely, recovery after an adverse shock entailing the failure of a significant number of firms will be all the slower the greater

the duration and cost associated with the winding-up of less productive firms and the lower the start-up rate of new competitors.[4]

… and promote the development and adoption of new technologies, fomenting productivity growth

In the long term, the rates at which technological innovations originate and are adopted also depend on the level of market competition and on the degree of business dynamism. R+D investment requires a return which, on occasions, can only come about through the exercise of a degree of market power, at least over some period of time. However, in other instances, protecting new ideas need not be incompatible with the presence of incentives to innovate in a competitive environment. Many technological innovations have arisen and been disseminated outside the protection of patents. Indeed, in competitive environments, firms can also make technological innovations profitable; and these, moreover, will be disseminated more rapidly the fewer the obstacles to business start-ups.

Indeed, regarding the generation and dissemination of innovation, the role of new entrepreneurs should not be underestimated, even when new productive units with a small number of employees are involved. Market structures and institutions that facilitate the entry and exit of firms can promote the accumulation of knowledge, investment in intangible assets, through experience, and the mobility of entrepreneurs and innovators, all of these factors being necessary for raising productivity.[5]

Business dynamics also determine the degree of heterogeneity within each sector…

There is abundant empirical evidence confirming that, within each sector of activity, firms of very different sizes and productivity exist alongside one another. This heterogeneity is the outcome of entrenched patterns that are common to many countries: new firms entering a specific market are, on average, of a smaller size and therefore have greater growth potential than those already established. In particular, there is a negative association between productivity growth and employment, on one hand, and a positive one between the size and age of firms, on the other. Likewise, older firms that have a greater number of workers have a higher survival rate than newly created firms.[6]

That means that the distribution by firm size both at the aggregate level and within each sector is asymmetrical, insofar as this distribution contains a greater density of small-sized firms. In Spain, this asymmetry is very marked. As is set out in greater detail in the following section, almost 90% of Spanish firms have fewer than 10 employees, while those with over 50 workers account for a very small percentage compared with that of peer countries.

… which has a bearing on the source and transmission of shocks, affecting the scale of economic fluctuations

Aggregate shocks, which affect all firms jointly, are less frequent and less extensive than idiosyncratic shocks, i.e. those that affect companies individually. The aggregate consequences of these idiosyncratic shocks depend on the composition of the productive system, in terms of firm size, and on price and wage rigidities. For example, in an economy with flexible prices, if the large firms account for a high portion of the employment in a country, the business cycle may be strongly influenced by its idiosyncratic shocks,[7]

4 For a theoretical analysis of these types of transmission channel in customary macroeconomic models, see, for example, F. Bilbiie, F. Ghironi and M. Melitz (2012), "Endogenous Entry, Product Variety, and Business Cycles", *Journal of Political Economy,* vol. 120(2), pp. 304-345; N. Jaimovich and M. Floetotto (2008), "Firm dynamics, markup variations, and the business cycle", *Journal of Monetary Economics,* vol. 55, pp. 1238-1252, and G. L. Clementi and B. Palazzo (2015), "Entry, Exit, Firm Dynamics, and Aggregate Fluctuations", *American Economic Journal Macroeconomics,* forthcoming.

5 See X. Vives (2008), "Innovation and competitive pressure", *The Journal of Industrial Economics,* vol. 56, pp. 419-469.

6 See CompNet Task Force (2014), *Micro-Based Evidence of EU Competitiveness. The CompNet Database,* ECB working paper 1634.

7 This possibility is given the name of «granular hypothesis». See X. Gabaix (2011), "The granular origins of aggregate fluctuations", *Econometrica,* vol. 79(3), mayo, pp. 733-772, and V. Carvalho and B. Grassi (2015), *Firm Dynamics and the Granular Hypothesis,* manuscript.

although this correlation diminishes when the degree of nominal inertia of prices is greater.[8] Conversely, in economies where small and medium-sized firms have a greater weight, aggregate economic fluctuations tend to be associated to a greater extent with global demand- or supply-side shocks.

Another factor that influences the aggregate consequences of idiosyncratic shocks is the growth potential of newly created companies. This effect is particularly significant in relation to the duration of expansions and of recessions. Hence, if after a positive shock the flow of business start-ups increases and new firms harness their growth potential, the expansion generated by the shock will be much more durable and sustained over time than if the new start-ups face restrictions constraining their growth capacity.

Business dynamics are influenced by labour market regulations and affect the functioning of the labour market

Business start-ups and their growth are influenced not only by product market regulations, but also by labour market-related regulations. For instance, labour regulations affect individual's incentive to work as an entrepreneur, a private-sector wage-earner or a public-sector employee, or to remain idle. Also, the fact that national or regional-level collective bargaining prevails over that at the firm level, imposing working conditions on new start-ups in the related sector, may prevent the entry of firms initially with low productivity but high growth potential. Discrimination in the application of certain labour rules on the basis of firm size may also generate obstacles to the growth of younger firms.

Business start-up and failure rates are mirrored by worker flows. The higher these rates are, the higher the respective entry rates into employment and unemployment will be. Further, a high business failure rate and a low growth of small firms will tend, in general, to bring about greater labour instability and a lesser accumulation of work experience on the part of employees. Finally, in light of firm entry and exit rates, labour instability is greater if the legislation on employment protection involves incentives for staff turnover through the continuing use of temporary contracts.

There are various economic policy instruments linked to business demography with which to boost competition, productivity and well-being

Box 4.1 shows, for illustrative purposes, the results of an exercise assessing different economic policy measures related to business dynamics. In particular, the effect of a reform that increases competition in the product markets through a reduction in entry costs and that provides for the growth of those small firms with sufficient productivity is compared with those effects arising from a reform that generates a genuine improvement in small firms' productivity. The main conclusion of the exercise is that although a reduction in entry costs increases the range of potentially profitable business opportunities, many of which ultimately translate into new firms in a limited period of time, a measure of this type may reduce aggregate productivity if growth is not assisted via the reduction of firms' adjustment costs. The exercise further shows that the measures that appear to have the biggest positive impact on the economy as a whole are those aimed directly at raising average productivity and, in particular, that of small firms.

3 A characterisation of business dynamics in Spain in the international context

There follows a characterisation of business dynamics in Spain from the time and international perspective, in relation both to the level and composition of firm entries and exits and to the growth of firms that are already established. It should be borne in mind that this type of analysis faces difficulties derived from a lack of data that are homogeneous

8 J. Andrés and P. Burriel (2014), *Inflation dynamics in a model with firm entry and (some) heterogeneity,* Banco de España Working Paper No. 1427.

and sufficiently representative in all countries. To resolve these difficulties, several statistical sources[9] have been combined in the evidence presented below.

During the expansion prior to the crisis, Spain had a similar business start-up rate to, and a business failure rate somewhat lower than, the average for the EU countries

Start-up and failure rates can usually be measured by the ratio of the flow of firm start-ups and failures over the course of one year to the number of firms existing in the previous period. These rates have a marked cyclical component, as business start-ups are substantially greater in expansions than in recessions, while the opposite occurs with failure rates.

On Eurostat data (see panel 1 of Chart 4.1), in the years immediately prior to the crisis (2005-2007), Spain posted a business start-up rate close to the EU average, i.e. 9%, a similar figure to that observed in France (10%) and somewhat higher than that for Germany and Italy (5% and 8%, respectively). In this period, within the EU, the highest business start-up rates were observed in the United Kingdom (15%) and in certain Eastern European countries, such as Bulgaria, Estonia and Slovakia (17 %, 14 % and 14 %, respectively). Regarding the failure rate, Spain's rate was lower than the average, at 4%, a similar figure to that of Germany, Italy and France (6%, 5% and 5%, respectively). In the international context, there is a positive association between start-ups and failures, whereby those countries that had high failure rates – the United Kingdom (10%) and Eastern European countries such as Bulgaria, Estonia and Slovakia (7%, 7% and 8%) – are also those that posted the highest start-up rates. In Spain, the business start-up rate observed over the course of these years far exceeded the failure rate (see panel 3 of Chart 4.1).

The crisis substantially reduced the business start-up rate and raised the failure rate

As from 2007 there was a significant increase in the firm failure rate while the start-up rate decreased, to the extent that, according to DIRCE (the National Statistics Institute Central Companies Directory), net declines were observed in the number of firms up to 2012. In 2013, a net positive change was discerned, owing to a decline in the number of failures and a rise in start-ups. The following year, however, the number of firms stabilised. In any event, the differences by sector of activity are appreciable. Hence, although the recession had an adverse impact on business dynamics in all sectors (see panel 4 of Chart 4.1), the construction sector was that most affected by the crisis, both in the reduction in firm entries and in the increase in firm exits, with sizeable net declines being evidenced from 2008. These effects were on a much lesser scale in the services and, especially, industrial sectors.

Even taking into account the effect of the business cycle, Spain has posted relatively low business start-up rates since 2008

The effect of the business cycle on firm start-up and failure rates can be proxied drawing on the estimated relationship between these rates and GDP growth for a set of countries. According to the results of estimates of this type, it may be concluded that, although in Spain the pre-2008 pattern of business start-ups was similar to that in other countries, since then it has been considerably lower, even given the economic recession (panel 5 of Chart 4.1). Moreover, although firm failures throughout the recession were in step with expectations given the scale of the decline in GDP, prior to 2007 in Spain a greater number of firms survived relative to what corresponded to the average behaviour in other countries (see panel 6 of Chart 4.1).

Start-up and failed firms are less productive than established firms…

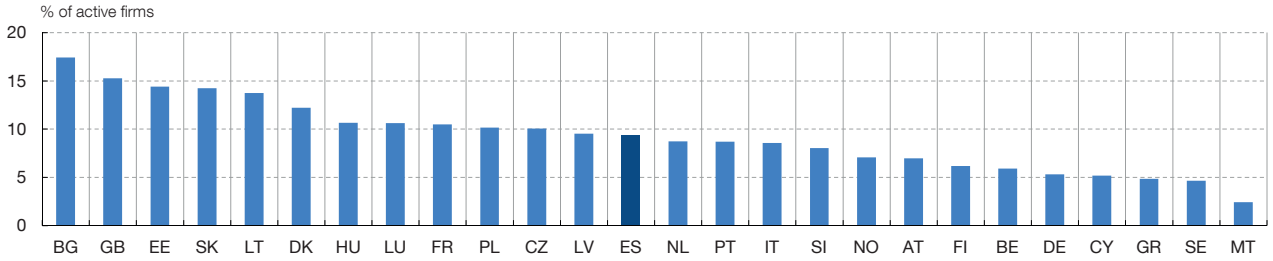
It can be seen in Spain's case that both newly created firms and those discontinuing their activity show lower productivity levels than the average productivity of their sector. Firm entries during the 1998-2007 period, in particular, evidenced a level of productivity that is almost 20% below the sector average, suggesting the existence of a necessary learning-

9 The information for Spain has been drawn from the Banco de España Central Balance Sheet Data Office (CBSO), the Balance of Payments (BP), the Banco de España Central Credit Register (CIRBE) and the INE Central Companies Directory (DIRCE); the sources for the remaining countries are AMADEUS, *CompNet* [a research network on the competitiveness of the European System of Central Banks (ESCB)], Eurostat (Structural indicators) and OECD (*Entrepreneurship at a Glance*). However, for the correct interpretation of the statistics discussed below, it should be borne in mind that not all the databases used are internationally harmonised.

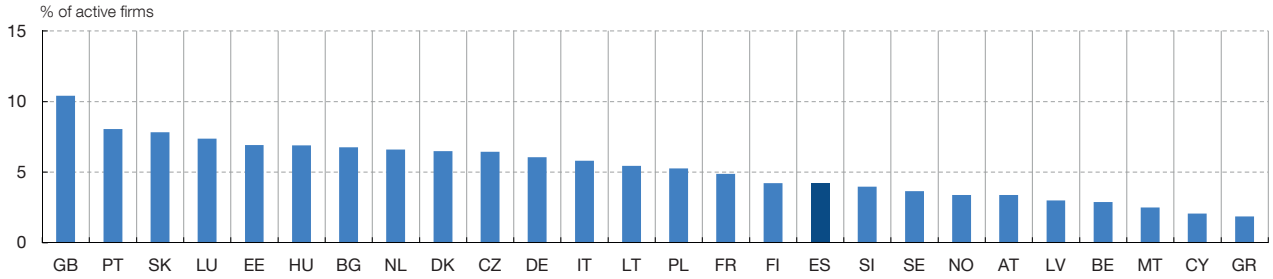
BUSINESS START-UP AND FAILURE DYNAMICS IN SPAIN

CHART 4.1

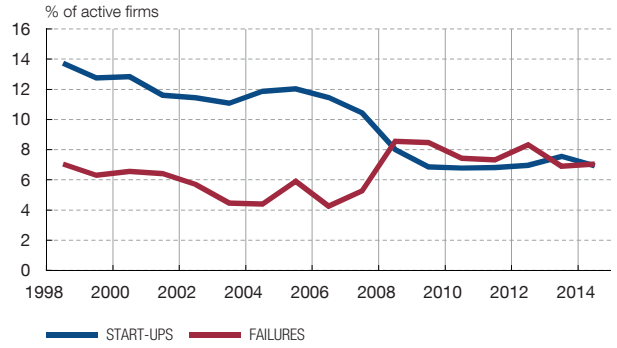
1 BUSINESS START-UP RATE BEFORE THE CRISIS (2005-2007) (a)



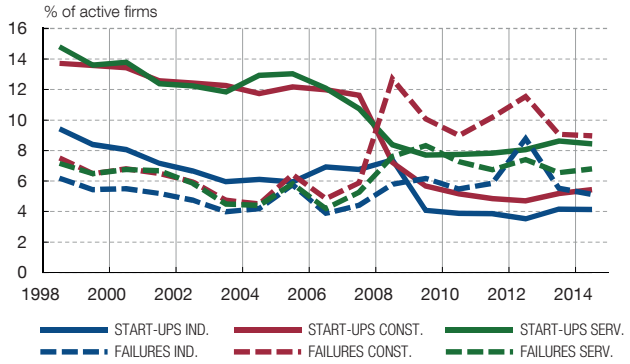
2 BUSINESS FAILURE RATE BEFORE THE CRISIS (2005-2007) (a)



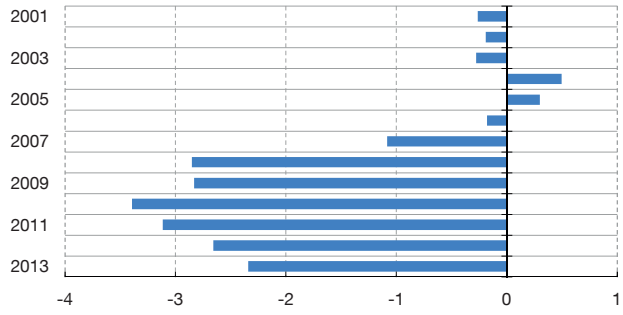
3 BUSINESS START-UP AND FAILURE RATES IN SPAIN (b)



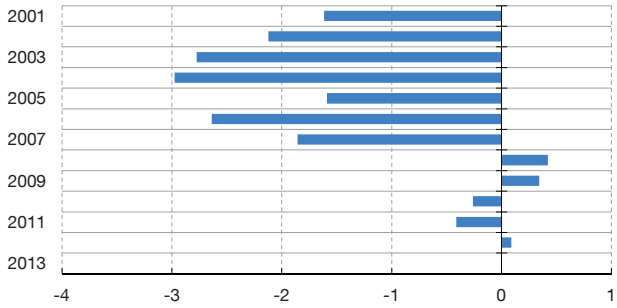
4 START-UP AND FAILURE RATES IN THE MAIN SECTORS OF ACTIVITY IN SPAIN (b)



5 RESIDUALS OF THE START-UP MODEL (c)



6 RESIDUALS OF THE FAILURE MODEL (c)



SOURCES: European Commission, OECD, INE and Banco de España.

a Eurostat distinguishes three legal forms of businesses: public or private limited liability commercial-law companies, workers' limited or unlimited liability companies and unlimited liability sole propietorships. The information is limited to public or private limited liability commercial-law companies to increase the comparability of the statistics, since data on sole proprietorships are prone to greater measurement errors. Limited liability commercial-law companies account for 40%, since sole proprietorships account for somewhat more than 50%. In terms of employment, however, their contribution is much larger. Sectorally, the information is limited to industry and services excluding the management activities of holding companies, general government, defence and compulsory social security, education and healthcare, other welfare and services activities provided to the community, personal services, household activities and extraterritorial organsiations and bodies.

b Units started up are defined as businesses started up in the current or previous two periods and failures are defined as those which cease to exist in the current or previous two periods. The sectoral classification is that of the two-digit NACE. Weighted by the sector average to prevent different sectoral compositions in business additions or reductions from affecting the results.

c Residuals relate to two regressions of business start-up and failure rates and GDP growth. Sample consisting of OECD countries between 2002 and 2012. A residual of –1 denotes a start-up or, where applicable, failure, rate which is 1 percentage point less than that estimated by means of historical and inter-country correlation of the business cycle and the relevant rate.

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BUSINESS DEMOGRAPHY AND PRODUCTIVITY (a) **TABLE 4.1**

Percentage

1 By sector	Total		Industry		Construction		Services	
	1998-2007	2008-2012	1998-2007	2008-2012	1998-2007	2008-2012	1998-2007	2008-2012
Average of the relative levels of apparent labour productivity for the period								
Total corporations	100	100	100	100	100	100	100	100
New corporations in the current year and two previous years	83.4	88.5	84.8	90.1	86.1	94.6	82.6	87.2
Remaining corporations	111.9	111.8	107.7	109.3	110.2	115.8	113.6	111.3
Corporations closed in the current year and two subsequent years	73.1	57.2	70.2	52.8	81.8	56.6	71.5	58.4
Average of the contributions to apparent labour productivity growth for the period								
Total corporations	100	100	100	100	100	100	100	100
New corporations in the current year and two previous years (b)	-6.2	-2.2	-3.4	-1.1	-5.8	-1.2	-7.0	-2.7
Corporations closed in the current year and two subsequent years (c)	3.2	7.4	3.0	7.1	2.2	11.6	3.5	6.5

2 According to sector growth	Total			
	1999-2007		1998-2012	
	Growing	Not growing	Growing	Not growing
Average of the relative levels of apparent labour productivity for the period				
Total corporations	100	100	100	100
New corporations in the current year and two previous years	83.4	82.7	88.4	88.9
Remaining corporations	112	110	110	113
Corporations closed in the current year and two subsequent years	73.3	69.6	67.3	53.9
Average of the contributions to apparent labour productivity growth for the period				
Total corporations	100	100	100	100
New corporations in the current year and two previous years (b)	-6.3	-4.8	-2.7	-2.0
Corporations closed in the current year and two subsequent years (c)	3	4	5	8
Memorandum item				
Percentage of sectors	62	38	30	70
Percentage of companies in the sector	64.7	35.3	36.5	63.5

SOURCES: INE and Banco de España.

a Based on data from the microdata files of the Central Companies Directory (DIRCE), together with microdata from the Central Balance Sheet Data Office.
b Calculated as the change in the productivity level in a given period, by including corporations created in the current year and two previous years in the calculation of average productivity.
c Calculated as the change in the productivity level in a given period, by excluding the corporations closed in the current year and two subsequent years in the calculation of average productivity.

curve period so that new firms converge on average productivity levels in their sector of activity. Likewise, failing companies posted, on average, a level of productivity that was 27% below that of their sectoral average, whereby their disappearance gave rise to a positive composition effect on productivity growth at the aggregate level (panel 1 of Table 4.1).

…although, during the crisis, start-up firms' productivity improved slightly in relative terms, while the less productive firms disappeared

Since 2008 the selection of firms, among both entries and exits, has produced a greater positive effect on the economy's aggregate productivity. Specifically, start-ups since then have shown a level of productivity closer to the sectoral average, while those firms exiting had a significantly lower level. These results are common to a broad set of sectors of the Spanish economy. In all cases, both start-ups and failures show of activity levels below the

average for the related sector. At the same time, the selection of firms has become more intensely geared to the most productive ones (see panel 1 of Table 4.1).

The improvement in the relative productivity of newly created firms has come about in most sectors

The increase in newly created firms' productivity relative to those already in place can be seen both in the sectors most affected by the recession, proxied by those in which there were declines in employment, and in those that recorded growth in employment. However, firms exiting sectors with declines in employment have had lower productivity than those remaining in place in sectors with employment growth, which indicates a relationship between firm exits and the cyclical position of the sector in question (panel 2 of Table 4.1). The new business start-up patterns and the fact they are across the board suggests that some improvement is taking place in the selection of new firms on the basis of their productivity, which might be symptomatic of a favourable structural change in Spanish business demography.

Nonetheless, the size and survival rate of newly created firms are lower in Spain than in peer countries

On Eurostat data, newly created Spanish firms are atypical regarding their initial size and survival rates. Indeed, the initial size of Spanish start-ups is generally small, standing on average at 4.6 employees in the industry, exceeding only Japanese and Luxembourg companies (4.0 and 4.3 employees, respectively). At the other extreme are France, Finland and the Netherlands, with an average size of 23.7, 17.9 and 16 employees, respectively. In the services sector, Spain has the smallest initial size of EU countries as a whole, with 2.4 employees. According to DIRCE figures, it is estimated that this characteristic became more accentuated during the crisis, given that the average size of start-ups in Spain fell as from 2008. If, between 2000 and 2007, 78% of start-ups with more than one employee had between one and five workers, this percentage rose to 82% in the subsequent period (see panel 1 of Chart 4.2). Moreover, the probability of survival of Spanish firms after five years is also low in comparative terms (see panel 2 of Chart 4.2). In this case, during the crisis, the probability of Spanish start-ups rather than established firms disappearing increased further.

Increased productivity is a determinant of business growth and development

A widely documented fact in studies on business dynamics is the positive association between size and productivity. The fundaments of this association are, however, less evident. First, it may be the outcome of the presence of economies of scale that generates productivity gains when firm size increases. Further, it may be the case that firms are intrinsically more or less productive and only grow insofar as the factors of their environment (economic, regulatory, institutional and financial factors, inter alia) allow it, once their true productive potential has been disclosed. In the first instance, size would cause productivity; in the second, causality would be the other way around, from productivity to size.

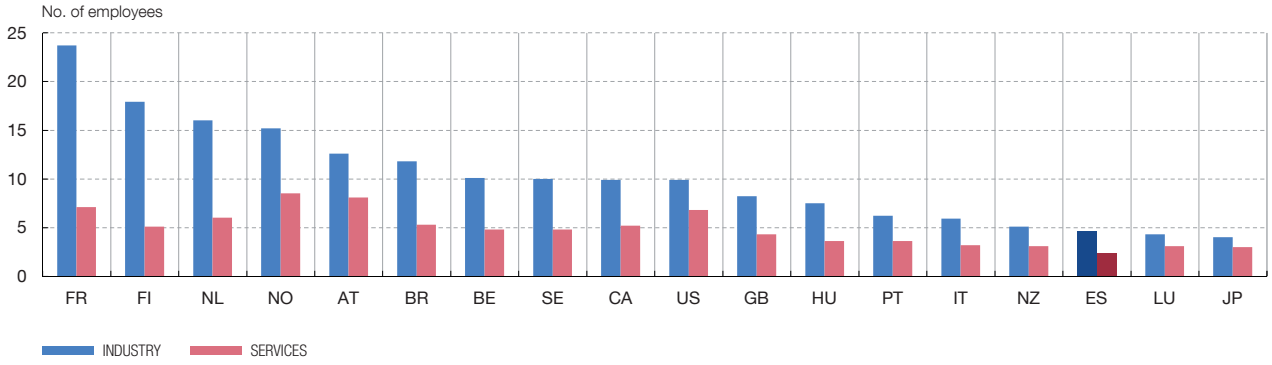
Although in practice there will foreseeably be numerous causality relationships between these two variables, in both directions, one way of attempting to discern their relative weight is to compare employment growth in two identical firms up to a specific time at which there can be seen to be a significant exogenous increase in productivity or size at only one of them. The results of such an analysis are shown in Table 4.2.[10] The top section in this table shows that in the year following a 10% increase in productivity, the related firm begins to grow more than its counterpart, such that after five years employment in the first firm has grown 8 pp more than that in the second firm. The lower section in Table 4.2 plots the changes in productivity for the two identical firms up to a specific time at which there can be seen to be an increase in size at only one of them (also normalised at 10%). In the second instance, no significant differences are found between the growth in productivity of both firms even after five years. Accordingly, these results suggest that productivity growth will give rise to an increase in firms size, while in the short term business growth would not of itself give rise to evident gains in productivity.

10 See E. MoralBenito (2016), *Growing by learning,* Banco de España Working Paper, forthcoming.

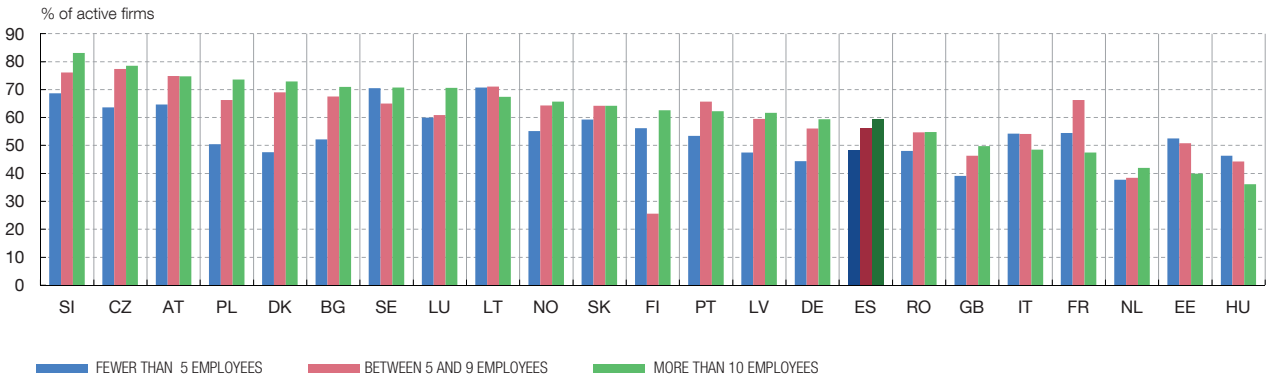
CHARACTERISTICS OF NEW COMPANIES

CHART 4.2

1 AVERAGE SIZE OF NEW COMPANIES (0 TO 2 YEARS) BETWEEN 2001 AND 2010 (a)



2 FIVE-YEAR SURVIVAL RATE IN 2010



SOURCES: OECD and European Commission.

a According to C. Criscuolo, P. N. Gal and C. Menon (2014) in *The Dynamics of Employment Growth: New Evidence from 18 Countries,* OECD Science, Technology and Industry Policy Papers no. 14, OECD Publishing.

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ESTIMATED EFFECTS ON EMPLOYMENT AND PRODUCTIVITY (a)

TABLE 4.2

	After the number of periods indicated				
	1	2	3	4	5
Of a productivity shock on					
Employment growth	0.017*** (0.004)	0.012*** (0.004)	0.010** (0.005)	0.004 (0.007)	0.003 (0.006)
Cumulative employment growth	0.017*** (0.004)	0.037*** (0.005)	0.045*** (0.006)	0.075*** (0.007)	0.084*** (0.009)
Of a size shock on					
Productivity growth	0.017* (0.009)	-0.005 (0.005)	-0.014 (0.020)	-0.008 (0.009)	-0.010 (0.014)
Cumulative productivity growth	0.017* (0.009)	0.012 (0.012)	0.006 (0.017)	0.012 (0.008)	0.007 (0.031)

SOURCE: Banco de España.
NOTE: * , ** and *** denote significance coefficients at 10%, 5% and 1%, respectively. Standard errors are in brackets.

a See E. Moral-Benito (2016), *Growing by learning,* Documentos de Trabajo, Banco de España, forthcoming. This exercise is based on propensity score matching which identifies a group of firms that are equal in terms of their observable characteristics (size, age, productivity, sector of activity, export status, etc.) in an initial period. This gorup is divided into two: a treatment group consisting of firms which have shown productivity (or employment) growth of more than 10% in the initial period, and a control group consisting of firms which have not shown such growth. Next, the average employment (or productivity) growth of each group in the following five periods (years) is compared and the differences between the two groups are checked to determine whether they are statistically different from zero.

PRODUCTIVITY AND GROWTH (a) **TABLE 4.3**

	Probability of high employment growth		Probability of high productivity growth	
	2002-2007	2008-2012	2002-2007	2008-2012
High productivity growth in the previous period	0.012*** (0.001)	0.019*** (0.001)	-0.244*** (0.001)	-0.268*** (0.001)
High employment growth in the previous period	0.163*** (0.001)	0.177*** (0.001)	-0.006*** (0.001)	-0.007*** (0.001)
Percentage of permanent jobs at the firm	-0.001 (0.002)	-0.001 (0.002)	0.032*** (0.002)	0.058*** (0.002)
Financing conditions (b)				
At least one credit application granted	0.015*** (0.001)	0.014*** (0.001)	0.015*** (0.001)	0.009*** (0.001)
All applications rejected	0.009*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.002** (0.001)
No applications made, but no restrictions on credit	0.014*** (0.001)	0.015*** (0.001)	0.011*** (0.001)	0.006*** (0.001)
Firm age (c)				
3 - 5 years	-0.028*** (0.001)	-0.046*** (0.002)	-0.059*** (0.001)	-0.065*** (0.002)
6 - 10 years	-0.039*** (0.002)	-0.066*** (0.002)	-0.072*** (0.002)	-0.087*** (0.002)
11 - 15 years	-0.045*** (0.002)	-0.080*** (0.002)	-0.072*** (0.002)	-0.098*** (0.003)
16 -20 years	-0.050*** (0.002)	-0.093*** (0.003)	-0.072*** (0.003)	-0.111*** (0.003)
> 21 years	-0.054*** (0.004)	-0.011*** (0.003)	-0.068*** (0.003)	-0.012*** (0.004)

SOURCES: INE and Banco de España.
NOTE: * , ** and *** denote significance coefficients at 10%, 5% and 1%, respectively. Standard errors are in brackets.

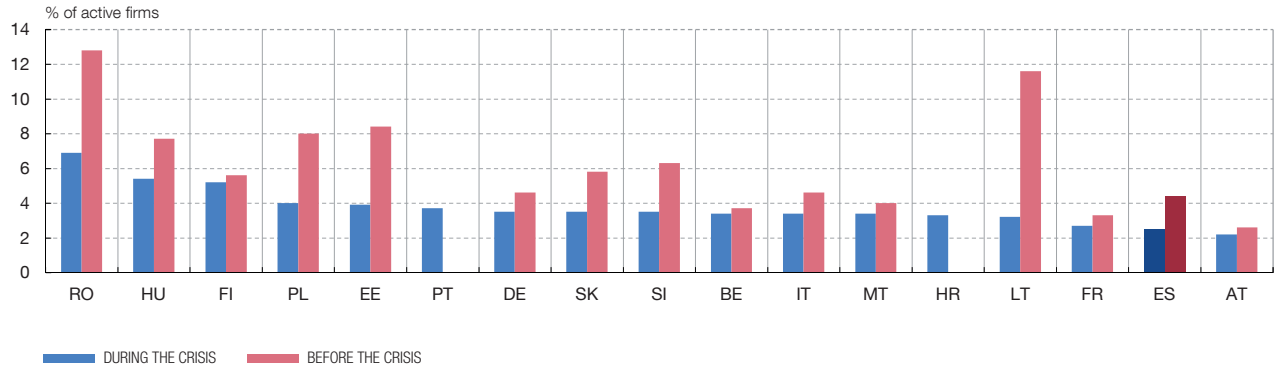
a Results of a linear probability model estimated using firm data in the Central Balance Sheet Data Office. The coefficients represent the marginal effects of each variable on the probability that a firm has high growth. All the results include fixed effects as the control group. High employment growth firms are defined as the 10% of firms with the highest value which results from multiplying the absolute change in employment by the ratio of employment in the subsequent period (t+1) to employment in t. High productivity growth firms are defined as the 10% of firms that have the highest productivity growth rate and have not undergone falls in their employment level. Both definitions are calculated at the level of sector (NACE two digit categories) and year.
b The first two categories refer to firms which have applied for credit to a bank from which they do not have outstanding loans.The third refers to firms which, although they have not applied for credit to a new bank, have increased the number or amount of loans from their customary banks or have lines of credit which are mostly unused. Finally, the reference group consists of firms which neither request credit from new banks nor increase their positions with their customary banks.
c The reference category consists of firms of age below 2 years.

The number of high-growth firms is fairly low when compared with peer countries

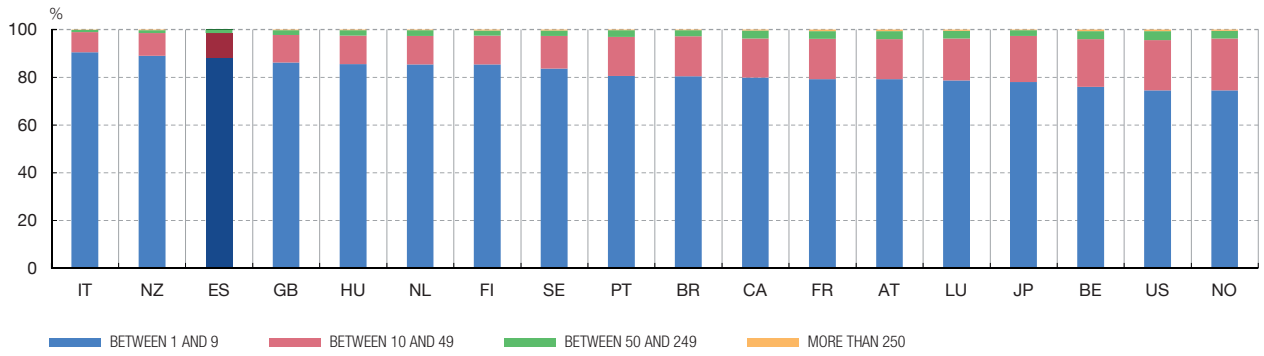
The analysis of high-growth firms, which are defined as those at which there is a significant increase in size, measured by employment, over a short period, also stresses the significance of productivity (see Table 4.3).[11] Specifically, it is found that these firms' productivity growth is a determinant of the increase in their size, while size, at least among firms notable for rapid development, does not increase productivity growth. Insofar as productivity growth in Spain is low, from an international standpoint, it is not surprising that the percentage of high-growth firms, according to the OECD definition (see panel 1 of Chart 4.3), is also low in relative terms.

11 See C. Guillamón, E. MoralBenito and S. Puente (2016), *High growth in employment and productivity: Dynamic interactions, and the role of financial constraints,* Banco de España Working Paper, forthcoming.

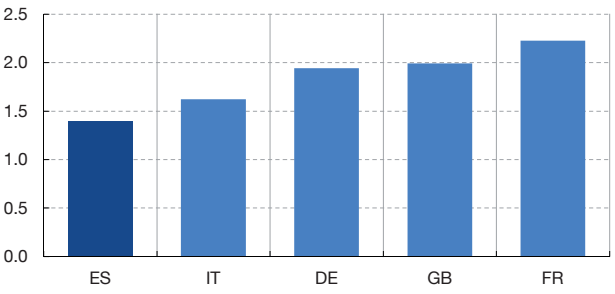
1 PERCENTAGE OF HIGH-GROWTH FIRMS (a)



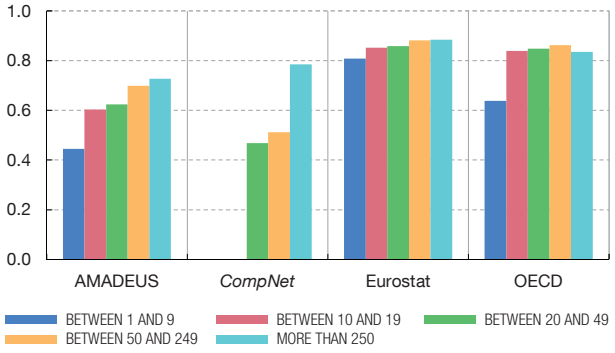
2 DISTRIBUTION OF FIRMS BY NUMBER OF EMPLOYEES



3 AVERAGE EFFICIENCY IN THE ALLOCATION OF RESOURCES TO FIRMS BASED ON TFP BETWEEN 2004 AND 2012 (b)



4 RELATIVE PRODUCTIVITY OF SPANISH FIRMS (c)



SOURCES: OECD, AMADEUS, European Commission, ECB's *Competitiveness Research Network (CompNet),* INE and the Banco de España's Central de Información de Riesgos and Central de Balances.

a Per the *CompNet* definition, which encompasses those firms that raise their levels of employment by more than 20% per year over a three-year period.
b Annual average in each of the periods of covariance between the market share of the firms in each sector, measured by value added, and their total factor productivity relative to the sector average. Greater covariance indicates better allocation of productive resources among the firms of a given sector.
c Productivity ratio between Spanish firms and the average in France, Germany and Italy (average = 1). The AMADEUS and *CompNet* data refer to total factor productivity and the Eurostat and OECD data to apparent labour productivity.

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In Spain, moreover, the correlation between business growth and productivity is relatively low

Not only does there appear to be a small number of high-growth firms in Spain, but also the positive correlation between productivity and growth is less than that observed in other countries (panel 3 of Chart 4.3). In short, other factors unrelated to productivity appear to play a more relevant role in the accumulation of resources at certain firms.

As a result, the distribution of firms in Spain is relatively skewed towards smaller and low-productivity companies

The aforementioned business start-up, growth and failure patterns help justify the fact that Spain's distribution of firms evidences a greater weight for smaller size than that observed in other countries (see panel 2 of Chart 4.3). It is also seen that Spanish firms' productivity is at least 15% lower than that of their German, French and Italian counterparts, even when comparing size ranges, although this difference is significantly greater in the group of firms with 1 to 9 employees, where the weight of start-ups is greater (see panel 4 of Chart 4.3).

4 Some determinants of business dynamics in Spain

Among the key factors for start-ups are access to financing, regulations (whether fiscal, administrative or labour), the availability of human capital and innovation-related possibilities and incentives (see Chart 4.4). The same factors are likewise crucial regarding firms' growth potential, in addition to other factors that may be specific to each sector.

Access to financing, regulation, the availability of human capital and innovative capacity are fundamental factors of business dynamics

4.1 BUSINESS FINANCING

Bank loans are the main source of Spanish firms' external financing

The creation and growth in the size of firms are influenced by the availability of external financing to undertake new investment projects, which in Spain's case and, especially, for small firms occurs in the main through bank loans. In the immediate run-up to the crisis, bank lending standards in respect of firms were relatively lax, which translated into abundant bank financing that was especially conducive to the creation and survival of small firms. However, the firms resorting to lending did not necessarily have high productivity. Indeed, before 2007 no positive association can be found between the likelihood of obtaining financing and business productivity (see panel 1 of Chart 4.5).

Financial conditions worsened substantially during the crisis

During the crisis financial conditions tightened notably. Contributing to this were various factors such as the deterioration in credit institutions' financing conditions, partly as a result of financial fragmentation problems in the euro area, and the effects of the crisis on borrowers' creditworthiness. Small firms, especially start-ups, saw the biggest deterioration in their bank lending access conditions, partly as a result of their higher credit risk but also because of the diminished amount and quality of information that banks have on them. With a view to mitigating these frictions, public financial support programmes for this type of firm were extended (see Box 4.2). Notwithstanding, the lesser availability of financing contributed to a notable decline in start-ups and, consequently, to the reduction in private business investment.

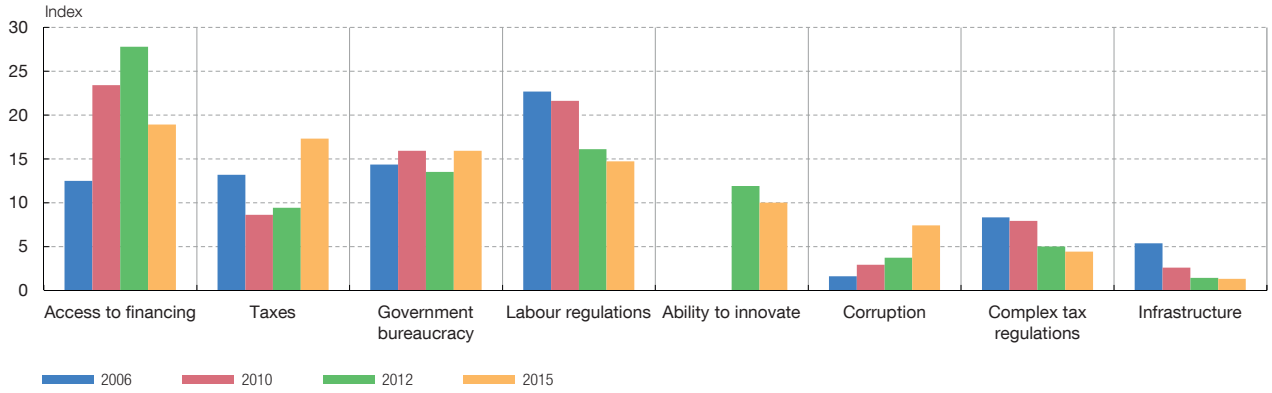
In the current phase of recovery, a pick-up in financing can be seen which, moreover, is targeted on more productive firms…

Following the crisis, firms' access to bank financing has improved, especially in the case of SMEs. This, combined with the increase in the demand for credit, has been mirrored by an increase in the volume of funds granted. These developments have been accompanied by a certain degree of credit supply selection among lenders, whereby access to financing has improved more markedly in the case of those firms in a more favourable economic and financial position.[12] A reflection of this has been an increase in the positive association between the obtaining of loans by firms and their productivity (see panel 1 of Chart 4.5). Accordingly, the course of recent credit flows points to a degree of reallocation of resources

12 For further information see Box 5.2 of the Banco de España 2014 *Annual Report* del Banco de España de 2014.

FACTORS FOR DOING BUSINESS AND GROWTH CHART 4.4

MOST PROBLEMATIC FACTORS FOR DOING BUSINESS (a)



IMPORTANCE OF THE FOLLOWING FACTORS IN FIRM GROWTH IN 2015 (b)

Percentage

	Total	Industry	Construction	Trade	Transport	Other services
Product demand	44.4	54.3	43.8	43.7	35.9	43.4
Macroeconomic environment	24.4	31.1	22.5	17.3	16.8	28.5
Economic regulation	19.7	18.3	20.1	14.9	11.1	26.0
Taxes	17.9	17.4	20.8	17.0	9.2	20.8
Bad debts	13.9	13.4	22.8	5.3	-6.3	23.2
Availability of financing	13.5	14.7	29.5	7.0	6.9	14.0
Labour market efficiency	7.6	7.0	7.6	3.5	3.4	11.6
Suitable human capital	1.1	5.1	-4.4	-4.0	-5.0	5.6
Factor costs	-5.2	13.1	-8.3	-6.0	-6.2	-11.9
Infrastructure	-11.6	-4.8	-7.7	-12.5	-6.6	-17.1
Insufficient equipment	-17.1	-4.0	-18.9	-21.8	-15.8	-20.6
Legal costs	-33.3	-38.8	-31.5	-38.0	-41.9	-25.8

SOURCE: *Global Competitiveness Report* of the World Economic Forum, and INE.

a Data drawn from the module on the most problematic factors for doing business, in the *Global Competitiveness Report.* Respondents have to select, from a list of factors, the five most problematic ones for doing business in the country and assign them a score ranging from 1, for the least problematic, to 5, for the most problematic. The index is a weighted average of the responses.

b Data drawn from the module devoted to opinion on the business environment, of the INE business confidence index. It represents the difference between the percentage of firms giving a high importance to those factors and the percentage of firms giving them a low importance.

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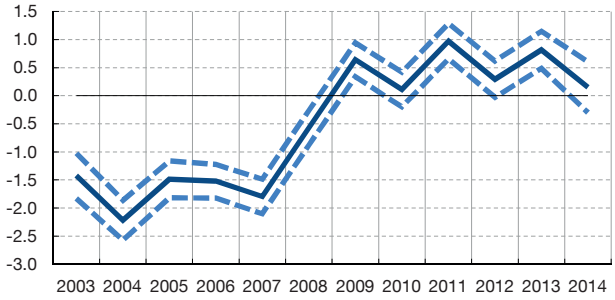
across firms, meaning they would be directed to a greater extent towards more productive companies.

…while the various reforms undertaken have lessened the distortions that were encouraging investment in real estate assets at the expense of other activities

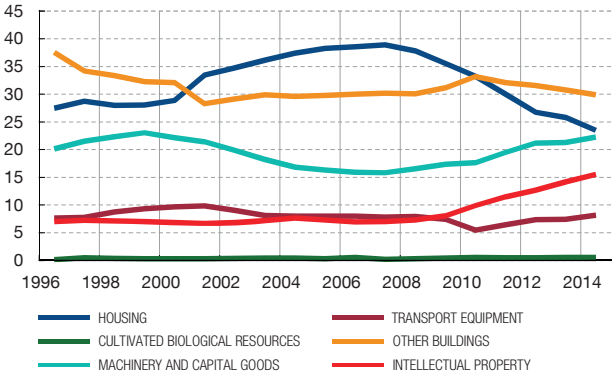
Some of the structural reforms undertaken in recent years should contribute to lessening the distortions that encouraged investment in real estate assets at the expense of alternative investment in projects with potentially higher expected returns but with less collateral. Specifically, both the recent changes in financial regulation and the range of fiscal and regulatory measures in the area of housing and the rental market should have contributed to curbing an excessive concentration of credit in real estate assets.[13] A preliminary assessment of recent reforms in the area of insolvency proceedings suggests that such reforms would have resulted in the greater efficiency of these proceedings (see Box 4.3). That should be conducive to a greater use of insolvency proceedings by firms

13 J. S. MoraSanguinetti y M. Rubio (2014), "Recent Reforms in Spanish Housing Markets: An Evaluation using a DSGE Model", *Economic Modelling,* vol. 44.

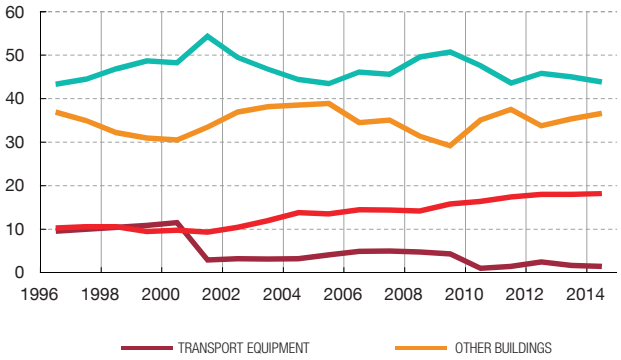
1 RELATIONSHIP BETWEEN PRODUCTIVITY AND ACCEPTANCE OF LOAN APPLICATIONS BY FIRMS (a)



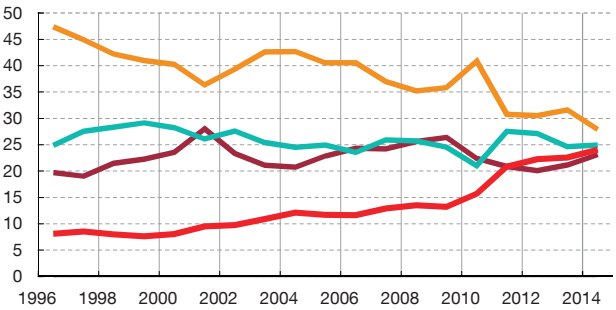
2 BREAKDOWN OF GROSS CAPITAL FORMATION. TOTAL ECONOMY



3 BREAKDOWN OF GROSS CAPITAL FORMATION. INDUSTRY



4 BREAKDOWN OF GROSS CAPITAL FORMATION. SERVICES



SOURCES: INE and Banco de España.

a Credit approval and business TFP regression coefficient based on size, age, financial costs, asset volume and sector of activity of the firm. A negative (positive) coefficient denotes a negative (positive) correlation between productivity and credit approval. The broken lines show the confidence interval of the estimate.

and, therefore, it should promote an increase in the weight of project financing with a high potential return and a higher level of risk. There is in fact evidence that the inefficiencies evidenced by business insolvency proceedings as a mechanism to restructure debt – in comparison with mortgage foreclosures – skewed the granting of credit in the past towards projects collateralised by real estate.

In this respect, developments in recent years reveal major changes in the composition of firms' investment flows, which were no doubt also in response to cyclical factors, making it difficult to assess the role the recent reforms may have played to date. Hence, the weight of housing in overall gross capital formation has fallen by around 15 pp since 2008, while that of gross formation in capital goods and the acquisition of intellectual property has increased (see panel 2 of Chart 4.5).

The increase in gross formation in capital goods appears to be the result of a sectoral reallocation following the fall in the weight of construction and real estate services in aggregate value added, since there is no evidence of an increase in the former within the industrial and services sectors. However, there is indeed a continuous increase in gross formation in intellectual property, which quickened after 2009, especially in the services sector (panels 3 and 4 of Chart 4.5).

WORLD BANK *DOING BUSINESS* INDICATORS FOR SPAIN TABLE 4.4

SPANISH POSITION AND INTERNATIONAL COMPARISON

	Spain		United Kingdom		United States		Germany		France		Italy	
Ease of doing business indicators (a)	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Overall indicator	34	33	6	6	7	7	15	15	27	27	44	45
Starting a business	78	82	43	17	44	49	10	107	27	32	48	50
Dealing with construction permits	97	101	23	23	33	33	13	13	39	40	79	86
Getting electricity	78	74	16	15	42	44	3	3	22	20	58	59
Registering property	48	49	44	45	33	34	62	62	82	85	22	24
Getting credit	52	59	17	19	2	2	24	28	71	79	90	97
Protecting minority investors	44	29	4	4	32	35	46	49	27	29	33	36
Paying taxes	79	60	16	15	48	53	68	72	105	87	37	137
Trading across borders	1	1	36	38	33	34	34	35	1	1	1	1
Enforcing contracts	39	39	26	33	21	21	11	12	12	14	24	111
Resolving insolvency	23	25	12	13	4	5	3	3	22	24	21	23
Memorandum item												
Number of countries surveyed	189											

SOURCE: The World Bank *(http://espanol.doingbusiness.org/)*.

a With these indicators, the country with the best practices has position number 1, countries with successively poorer practices occupy increasingly higher positions.

4.2 THE IMPACT OF REGULATIONS

Although the obstacles to competition have progressively diminished, there is room for improvement in entry regulations, especially at the regional and local government levels

As regards the formalities for creating a new firm, Spain is ranked in a relatively unfavourable position at the international level. For example, according to the World Bank's *Doing Business* indicator, Spain ranks 82nd, at some distance from the United Kingdom, France and Italy, albeit better than Germany. However, there have recently been considerable improvements in this area, essentially owing to the creation of single windows and the possibility of using responsible statements as opposed to the previous requirement entailing the approval of a licence. At present seven procedural steps, 14 days and 5.2% of income are necessary for a business start-up, compared with 10, 61 and 15%, respectively, in 2010 (see upper panel of Table 4.4).

Nonetheless, it should be borne in mind here that business start-ups are still subject to a plethora of regional and local government regulations, an aspect which is not reflected in the aforementioned indicator. The information available in this connection for 19 Spanish cities confirms that there is significant regional heterogeneity, which, for the sake of facilitating start-ups, would warrant rigorous assessment of the different instruments used that help identify good practices in this regulatory policy area.[14]

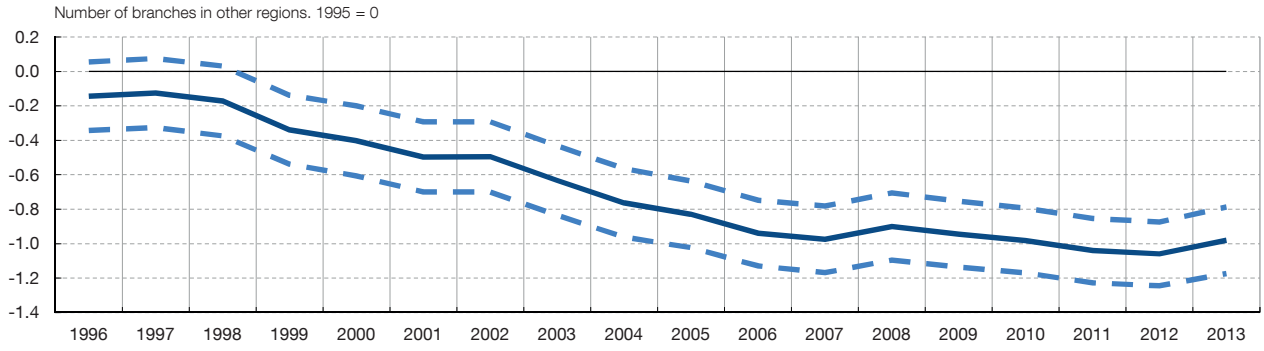
To promote the growth of firms, it is also necessary to reduce size-contingent regulations and those that restrict activity in other geographical markets...

At the state level, there is a broad range of business size-contingent regulations, which may act as a deterrent to business growth.[15] Likewise, the regional governments have increased their regulatory capacity, whereby the heterogeneity in the regional steps needed to undertake investment projects might not only be curtailing start-ups, but also their

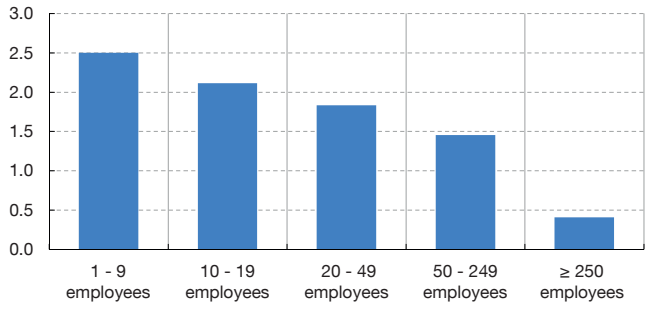
14 See *Doing Business* en España, 2015 (http://espanol.doingbusiness.org/reports/subnational-reports/spain).

15 See the evidence on the impact of specific regulatory thresholds in the distribution of firms by size in Chapter 3 of the Banco de España 2014 *Annual Report* and in the European Commission's *Report on Spain 2016, with an exhaustive examination of the prevention and correction of macroeconomic imbalances.* In this respect, fiscal and labour regulatory arbitrage affects the difference between the number of firms and the number of entrepreneurs, meaning that the average size of firms measured in legal terms need not match the average size of resources managed under a single management unit.

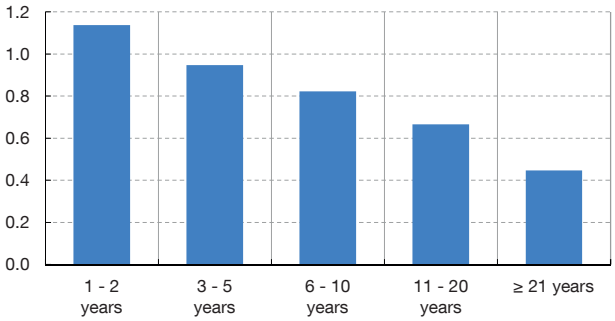
1 SPANISH FIRMS ESTABLISHING A PRESENCE IN OTHER REGIONS WITH RESPECT TO 1995 (a)



2 AVERAGE DISTORTION BY FIRM SIZE (b)



3 AVERAGE DISTORTION BY FIRM AGE (b)



SOURCES: INE and Banco de España.

a Measured by the effect of time dummies in a regression of the number of branches in other regions, controlling additionally for size, home region GDP and twodigit firm sector. A coefficient of -1 (+1) in a given year indicates that, on average, Spanish firms operated in one less (more) region with respect to 1995. The broken lines give the confidence intervals of the estimate.

b Marginal productivity of capital by firm size (age) relative to an American firm of the same size (age). Marginal productivity is calculated using the *Hsieh and Klenow* model. In this respect, it is implicitly assumed that in an economy without distortions, the marginal cost is the same for all firms in the same (four-digit) sector. Since all firms maximise profits by making their marginal revenue equal to marginal cost, in a frictionless economy all firms should have the same marginal revenue in equilibrium. Thus the difference between a firm's marginal revenue and the average marginal revenue of the sector is interpreted as a distortion faced by the firm in its operations which prevents it from achieving its optimum scale. More specifically, the marginal revenue of each sector in the United States is taken as reference, since this economy is assumed to have fewer distortions.

subsequent capacity to grow. In this respect, it appears that firms have progressively reduced their presence in regions other than that of the parent, despite the fact that for many firms, especially in the services sector, direct investment is the sole means of harnessing economies of scale (see panel 1 of Chart 4.6). To correct these distortions, it is vital to implement the Market Unity Guarantee Law, in particular the legislation on the so-called "sectoral committees", whose aim is to reduce and homogenise the regulations applicable to the different areas.

...and to reduce distortions in the prices of productive factors that prevent the appropriate growth of the most productive firms

Finally, economic regulations may favour certain firms which, irrespective of their productivity, may obtain operating cost advantages that enable them to gain a greater market share. Generally, small and young firms face greater distortions than large corporations, which hampers their growth until they reach an optimum size (see panel 2 of Chart 4.6). This, in turn, may give rise to an inappropriate allocation of resources, owing to excess investment by the least productive firms and a reduction in aggregate production.

The specific nature of these distortions is very varied. For instance, in the labour market area, firm-level collective bargaining agreements, substantial changes to

working conditions or opt-outs are usually used almost exclusively by firms of a certain size and age, which leads young and small firms to have lower adjustment flexibility. Further, the legislation on public procurement contracts requires accreditation by the firm of a degree of solvency that is usually related to its level of business or its net worth, and to the works it has performed in recent years; accordingly, newly created firms have greater difficulties in bidding successfully, irrespective of their productivity. Likewise, there are distortions in other areas, such as the financial area or those relating to energy costs.[16] In this respect, it must be ensured that the objectives pursued by these types of regulations, which introduce a degree of business discrimination, are compatible with competition between established companies and newly created firms, and that they do not pose added difficulties to business growth potential.

Spain has a high loan recovery rate, even though the intensity and efficiency of business insolvency proceedings are insufficient

Finally, business restructuring processes are a significant factor in the allocation of productive resources. In this connection, one variable that is given priority attention is the proportion of debt recovered by creditors, either through the winding-up of the firm or through its restructuring. According to *Doing Business,* this recovery rate in Spain is 71.2%, which ranks our country in a relatively favourable position (25th) and very close to that of France and Italy, although on average 18 months are needed to complete this operation.

The Spanish system's relatively high rate of recovery is due to the fact that many bank loans are secured, and the guarantee is enforced when the loan is unpaid, whereas the use of insolvency proceedings for companies that need their debt to be restructured is much lower.[17] This characteristic, as discussed in the previous section, affects – more than the rate of destruction – the collateral requirements made by financial institutions and, in short, the type of investment projects that receive most financing (see Box 4.3). Accordingly, it is necessary to continue assessing to what extent the changes made to insolvency regulations increase the use and efficiency of liquidation mechanisms.

4.3 PROFESSIONAL SKILLS, ACCESS TO INNOVATION AND PRODUCTIVITY

An improvement in workers' cognitive skills and the use of best business practices would increase business productivity…

Section 3 highlighted the importance of the low level of productivity in explaining business dynamics in Spain. In this respect, the professional skills of employees and employers and investment in innovation is key to explaining productivity differences at the firm level.[18] Various indicators show that the Spanish population has lower professional skills than those of our peer countries. These indicators are usually constructed on the basis of the population's level of educational attainment drawing on various sources (official education system, and vocational, occupational and other unofficial training courses) and the attendant years and type of professional experience. Also informative are the results of standardised exams for the entire working age population on cognitive, numerical and reading comprehension abilities. In the case of the latter[19], Spain stands out as a country

16 For example, in the financial area, different sized companies may adopt different corporate structures that affect access to financing and liability according to the share capital disbursed. Likewise in the energy area, there are permits for the sale of self-generated electricity as from a certain plant capacity and the possibility of charging for the right to interrupt supply at large corporations.

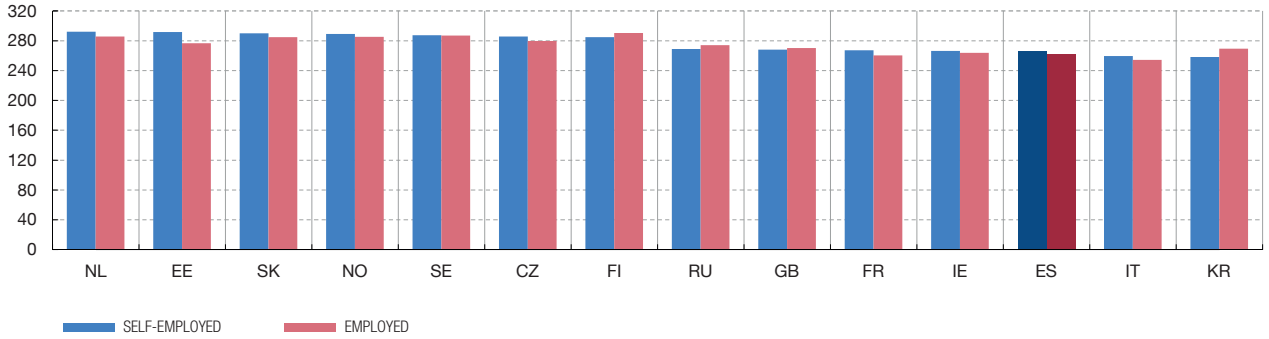
17 See M. Celentani, M. GarcíaPosada and F. Gómez (2010), *The Spanish Business Bankruptcy Puzzle and the Crisis,* FEDEA Working Paper 201011, and M. GarcíaPosada and J. S. MoraSanguinetti (2014), "Entrepreneurship and Enforcement Institutions: Disaggregated Evidence for Spain", *European Journal of Law and Economics,* vol. 40 (1), pp. 49-74.

18 C. Syverson (2011), «What Determines Productivity?», *Journal of Economic Literature,* vol. 49 (2), pp. 326365, highlights three essential factors for explaining the different levels of business productivity: worker skills, business management and innovative capacity.

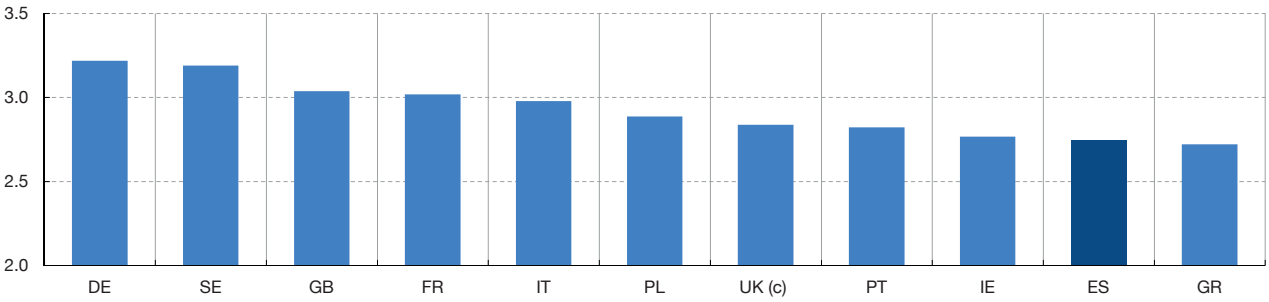
19 The PIAAC database offers a uniform quantification for the OECD countries of cognitive, numerical and reading comprehension skills. The survey's target population are individuals, not households, and sampling was undertaken with the help of INE.

CHARACTERISTICS OF HUMAN CAPITAL IN SPAIN CHART 4.7

1 WORKERS' MATHEMATICAL KNOWLEDGE SCORE, BY COUNTRY (a)



2 AVERAGE SCORE OF COMPANY MANAGERS BY COUNTRY (b)



SOURCES: OECD and Banco de España.

a Result of mathematical test of the OECD's Programme for the International Assessment of Adult Competencies (PIAAC) .
b The World Management Survey constructs an indicator from surveys of business management practices and makes a subjective assessment of the situation. Specifically, it asseses operating capacity (e.g. it analyses the introduction of modern techniques or the adoption of best practices, appraisal capacity (including most notably information processing and continuous appraisal), ability to establish targets (clear objectives and time horizons) and the ability to incentivise (how incentives have consequences). The full questionnaire can be found at http://worldmanagementsurvey.org/wp-content/images/2010/09/Overview-of-Management-Questions-Across-Sectors.pdf.
c Data of Northern Ireland.

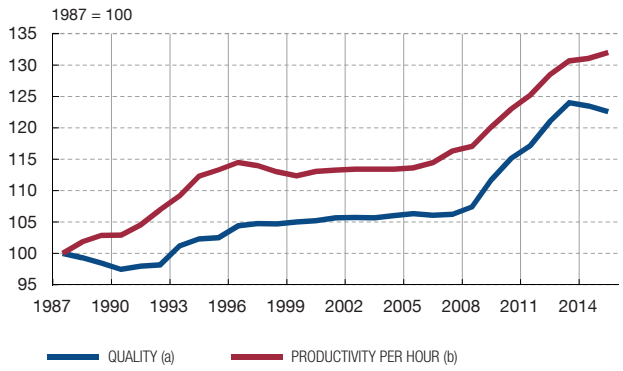
with one of the worst average scores (252), above only Italy (250), and far below the EU (271) and OECD (273) averages.

As can be seen in panel 1 of Chart 4.7, in most countries sampled the self-employed show high levels of cognitive skills, in relation to the population as a whole. In Spain, however, this group brings up the rear in terms of average cognitive skills relative to the other OECD countries, standing above only Italy and Korea.

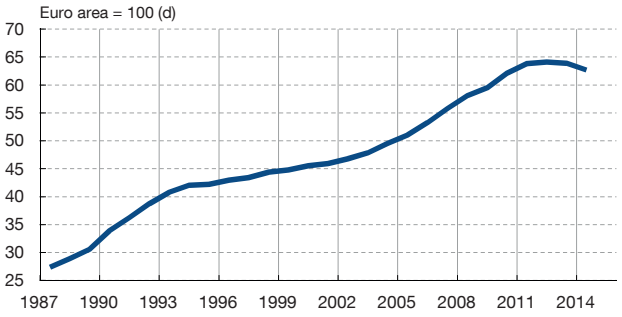
To manage a firm, not only cognitive skills but also interactive, strategic, operational and control skills are needed. The indicators available on business management, which are positively correlated with measures of business productivity, profitability and survival, place Spain in a position below Germany, the United Kingdom, France and Italy (see panel 2 of Chart 4.7). Among the different facets measured by the foregoing indicators, Spain is in a more unfavourable position regarding the policy of business incentives, including those relating to the identification of goals, appraisal and remuneration following their attainment. These results may be due to lower skills on the part of the managerial classes or to a lower degree of professionalisation of business management, in relation to the reference countries, especially in small and medium-sized enterprises, and/or to an institutional framework that constrains organisational capacity and efficient management of firms' productive resources to a greater extent than in other countries.

IMPROVEMENT IN HUMAN AND TECHNOLOGICAL CAPITAL IN SPAIN CHART 4.8

1 HUMAN CAPITAL QUALITY AND LABOUR PRODUCTIVITY INDICES



2 COMPARISON OF TECHNOLOGICAL CAPITAL STOCK/GDP RATIO OF THE SPANISH ECONOMY WITH THAT OF EURO AREA (c)



SOURCES: European Commission and Banco de España.

a See P. Cuadrado, A. Lacuesta and S. Puente (2008). The quality index approximates the productivity differences between workers with different observable characteristics (education, age, etc.).
b Productivity is calculated as the ratio between value added and employment. Until 1994 employment is expressed in terms of full-time equivalent employees and thereafter in terms of hours worked.
c Stock of technological capital calculated by the perpetual inventory method from the cumulative R&D expenditure expressed in current currency terms.
d The euro area aggregate relates to the 18 euro area countries in 2014. It therefore includes Spain, although Slovenia only since 1990, and Cyprus, Malta, Slovakia, Estonia and Latvia since 1995.

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…whereby it is necessary to continue increasing human capital,…

The indices of quality of the labour factor, which show changes in the composition of employment in terms of level of educational attainment and working experience, reveal that since the late 1980s Spain has witnessed a considerable increase in the quality of its labour force thanks mainly to the replacement of workers reaching retirement age with a low level of educational attainment by younger, better trained generations (see Chart 4.8). There is a certain cyclical pattern to this improvement, which is more pronounced at times of larger job destruction, owing to such destruction being concentrated in temporary workers with lower levels of educational attainment and working experience. Conversely, during upturns, a large number of unemployed re-join the workforce. Given that, on average, the latter workers have lower productivity levels, partly owing to the loss of professional skills incurred during long periods of unemployment, their positive contribution in terms of the formation of the generational change in the workforce is lower, meaning that the aggregate index of quality of the labour factor grows to a lesser extent.

Thus, to bring about a speedier improvement in the population's cognitive and business skills, it would not suffice to act only on the educational system; it is also necessary to increase unemployed workers' cognitive skills, to implement an effective continuous training system and to reduce the costs of professional business-support services. In this respect, it would be desirable in terms of business development to bring about a situation in which managers of the most productive new businesses may benefit from the knowledge imparted by business management professionals. As indicated in Chapter 1 of this Report, competition in the broad area of professional services is low in comparison with the OECD reference countries, which might be an indicator of difficulties of access by small firms to strategic consultancy services.

…to promote investment in technological capital…

The crisis has delayed the slow ongoing convergence of the Spanish economy's stock of technological capital/GDP ratio relative to the euro area, which in 2014 was still 37%

below the euro area average (see Chart 4.8). Throughout this chapter various factors, such as financing or insufficient managerial and employee skills, have been suggested as relevant factors for explaining this worse performance. However, there are many other reasons relating to the very structure of Spain's public-private innovation system that should be reviewed in order to promote this type of investment (see the European Commission's 2014 assessment report of the innovation system).

…and to harness synergies encompassing business management, availability of financing and employment stability of workers

It should be borne in mind that the generation and dissemination of innovation require a setting where the synergies between the main factors of production – namely physical and human capital, and business management capacity – are boosted.[20] As the results offered in Table 4.3 suggest, access to financing and workers' employment stability are associated with higher growth in productivity and unemployment. In this respect, positive effects of the existence of firm-level collective bargaining agreements have also been observed, insofar as they facilitate business management flexibility.[21]

Consequently, in order to promote business innovation, increase productivity growth and strengthen the Spanish economy's productive structure, it is necessary to continue undertaking a series of complementary measures on several fronts. These include most notably, in view of the priority nature of the need to improve them, the regulation of competition in the market for goods and services, the availability and efficiency of business financing, and more extensive business flexibility that is compatible with an increase in workers' employment stability.

5 Conclusions

Business dynamics in Spain share some common features with our peer countries, although they also show some particularities…

The evidence available shows that both business start-up-ups and failures in Spain appear to come about in a similar fashion to that observed in other countries, once the effects of the business cycle are taken into account. However, the worsening outlook for business profitability and the tightening of financing conditions further to the crisis are expected to have led, in recent years, to a situation in which the creation of new firms has held at relatively low levels.

The characteristics of newly created Spanish firms are, in some respects, different from those of other countries, especially regarding size, initial level of productivity and survival rate, which appear to be lower than those of our peers. Nonetheless, in recent years the productivity of newly created firms relative to established companies has improved. It is further observed that productivity gains are a significant determinant of business growth, while greater size, in itself, need not result in improved productivity.

The foregoing features give rise to a distribution of firms in Spain that is relatively skewed towards smaller-sized companies and to a negative productivity differential relative to European competitors with similar characteristics. This differential is across the board in terms of company size, although it is greater for smaller firms, in which segment newly created companies are concentrated.

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20 L. Garicano and P. Heaton (2010), "Information Technology, Organization, and Productivity in the Public Sector: Evidence from Police Departments", *Journal of Labor Economics,* University of Chicago Press, vol. 28(1), pp. 167201.

21 In this respect see L. Hospido and E. MorenoGalbis (2015), *The Spanish Productivity Puzzle: in the Great Recession,* Working Paper 1501, Banco de España; C. Guillamón, E. MoralBenito and S. Puente (2016), *High growth in employment and productivity: Dynamic interactions, and the role of financial constraints,* Working Paper, Banco de España, forthcoming, and A. Cabrales, J. J. Dolado and R. Mora (2013), "Dualidad laboral y déficit de formación ocupacional: evidencia sobre España con datos de PIAAC", en *PIAAC,* volumen 2: Análisis secundario, Ministerio de Educación, Cultura y Deporte.

…that highlight the need to alleviate frictions and inefficiencies in various areas and to foment real improvements in average business productivity levels

The limited correlation between productivity and business growth in Spain may be caused by various different factors (economic, financial, institutional, regulatory, etc.). In any event, the various simulations and empirical analyses presented in this chapter show that a potential future elimination of the barriers restricting the efficient allocation of resources is not sufficient to ensure sustained increases in growth capacity. The latter will further require real business productivity boosts through improvements in the quality of production factors (workers' human capital, business management and technological capital).

This box illustrates the channels through which business demography affects the dynamics of the main macroeconomic variables. To this end, various simulation exercises are performed using a general equilibrium model in which agents optimally decide to create a business, increase or decrease its size or liquidate its assets and discontinue production. In particular, in this model both starting a business and adjusting the scale of production are decisions taken by the entrepreneur requiring the outlay of a certain amount of non-recoverable funds. These entry and adjustment costs mean that new businesses start operations with below-average size and productivity, and only with time do they decide to increase both of these factors. The model intends, in turn, to realistically quantify the aggregate impact of changes in economic policy parameters that affect business decisions, as it is calibrated to reproduce both the aggregate ratios of the Spanish economy and the most relevant stylised facts of its business demography.

First, from a cyclical perspective, an economy's response to different shocks is largely determined by business dynamics. These, in turn, depend on multiple factors, such as business start-up and growth costs, the frictions that affect the liquidation of assets, and the costs (fixed and variable) necessary to maintain different scales of production and levels of technology. To demonstrate their importance, the accompanying chart shows the impact of the most commonly analysed factor in the literature, namely business start-up costs. Specifically, it is shown that the lower the costs of starting a business, the greater the economy's response to a temporary increase in the level of technology. In this case (the blue line in the chart), technological improvements make a larger number of business opportunities profitable and, as a result, more businesses are created. In turn, this increases the level of competition in the market, reduces business profits and enables greater increases in output.

Chart 1
TEMPORARY INCREASE IN PRODUCTIVITY IN ECONOMIES WITH DIFFERENT BUSINESS START-UP COSTS (a)

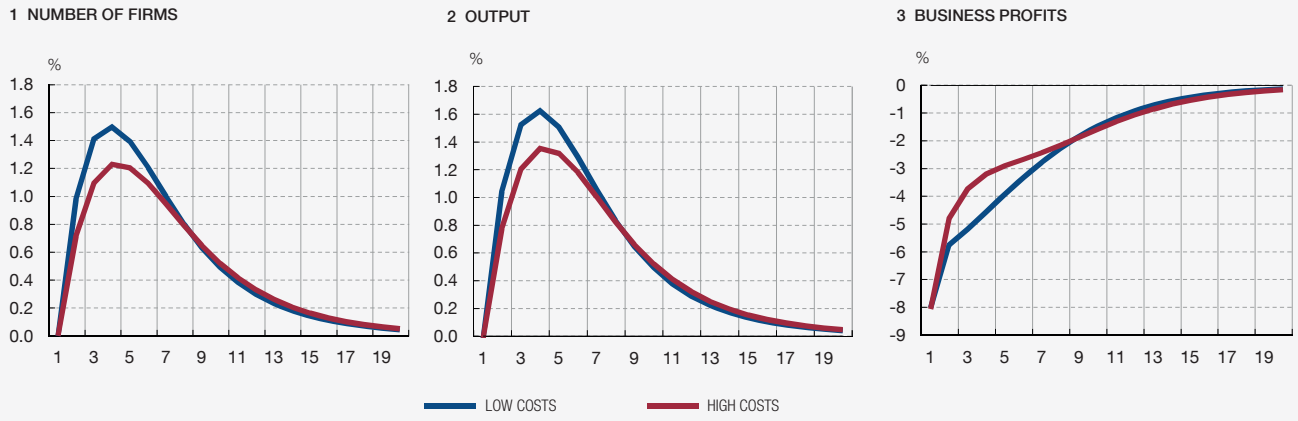


Table 1
IMPACT OF CHANGES IN ECONOMIC POLICY PARAMETERS (b)

	↓ 6% Entry costs	↓ 27% Cost of business size adjustment	↑ 0.3% Level of technology in small business
GDP	1.00	1.00	1.00
Number of firms	1.29	0.35	0.53
Small	1.43	0.08	0.53
Large	0.11	2.71	0.51
TFP	-0.12	0.31	0.23
Small	0.01	-0.09	0.29
Large	0.01	0.60	0.00

SOURCE: Banco de España.

a Responses of the model to a temporary increase in productivity with two different calibrations for business start-up costs. In the "low costs" scenario shown by the blue lines, business start-up costs are 50% lower than in the "high costs" scenario, which is shown by the red lines.
b Long-term changes or stationary state of the model in response to a permanent increase in the parameters listed in each column that is of a sufficient magnitude (also shown) to increase GDP by 1%. Thus, the first column shows the long-term effect of reducing business start-up costs by 6%; the second column shows the long-term effect of decreasing adjustment costs by 27%; and the third column shows the long-term effect of increasing the productivity of small business by 0.3%.

Second, the accompanying table shows the reaction of the main macroeconomic variables over the long term to changes in both entry and adjustment costs. The accompanying table compares the effect of changes to both parameters with the impact of technological improvements in small businesses. To provide for a comparison of the three scenarios, the exercises are calibrated so that the impact on GDP should be of the same magnitude (an increase of 1%). Thus, in the case of a reduction in entry costs (see the first column of the table), the fact that less investment is required to commence business operations increases the range of potentially profitable business opportunities, many of which ultimately result in new businesses being created in a shorter period of time. In turn, the larger number of businesses leads to an increase in employment and output, which enables workers to negotiate higher wages. The increase in disposable income enables agents to set aside more resources for consumption and investment and, therefore, to enjoy a higher level of well-being. However, it should be borne in mind that these aggregate effects are usually accompanied by relevant composition effects. More specifically, given that new businesses are mainly small, the increase in the number of businesses is concentrated in this group, which leads to a reduction in average productivity in the economy.[1]

A reduction in costs related to an increase in the scale of production (see the second column of the table) also leads to an increase in GDP over the long term. It is worth noting that achieving an increase in GDP of 1% would require a much larger reduction in adjustment costs (-27%) than in entry costs (-6%). Further, and unlike with the entry costs, when the reduction in costs is centred on those costs related to increasing the scale of production, the GDP increase is accompanied by a direct increase in aggregate productivity. Specifically, lower adjustment costs enable the growth of those small businesses pursuing projects with greater expected productivity, as it is now beneficial for them to invest in increasing their size and overall level of technology. In this way, the number of large businesses increases, as does their average productivity. The opposite occurs among small businesses, since their composition in terms of productivity is impaired. In turn, the higher probability of increasing in size boosts the expected profitability of setting up a new business, leading to an improvement in the flow of new businesses, although not as much as in the first scenario. Ultimately, it generates an increase in output, employment and consumption, which translates into substantial improvements in well-being over the long term.

Finally, these effects can be compared with those that would result from an increase in the average productivity of small businesses (see the final column of the table). As a result of this change, some small businesses will decide to invest and increase their size. Likewise, technological improvements boost business prospects for new entrants, leading to an increase in the number of businesses in the economy. In sum, these channels mean that a small increase of 0.3% in the TFP of small businesses (and 0.2% in the aggregate) generates a multiplier effect that leads to a 1% increase in GDP. In relative terms, even though it is difficult to compare the scales of the different economic policy tools, especially in terms of costs that do not have a real, quantifiable counterpart, this last measure seems to be particularly effective. Among the other measures considered, reducing entry costs gives rise to more appreciable effects on GDP and the level of competition, while reducing adjustment costs also leads to increased productivity.

1 The model is not designed in such a way that, given an increase in competition, the incentives increase for other businesses to differentiate themselves and thus invest in technology.

In general, SMEs have greater difficulty accessing funding than larger companies, given the lower quality and quantity of the information available on their financial position ("information asymmetries"). These difficulties are even more severe for newly created businesses, since they have no credit history, and for those pursuing their activity in innovative fields with a more uncertain future. Moreover, as the recent economic and financial crisis has highlighted, these frictions are heightened during periods of uncertainty, when the assessment of risk profiles is more complicated.

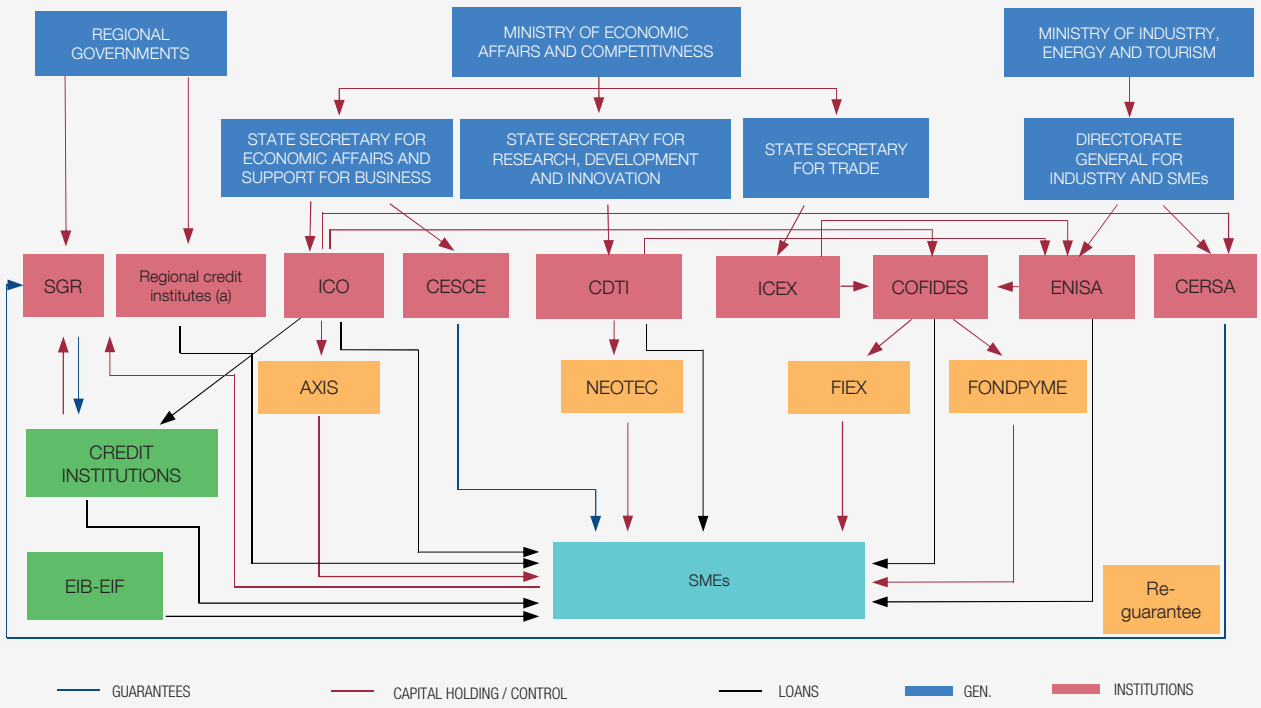
In order to lessen the impact of these market failures, various schemes have been developed to provide public support for the funding of SMEs. As seen in Chart 1, there are various financial institutions in Spain, mostly public in nature, that support the financing of SMEs, whether through loans, capital contributions or guarantees.

In quantitative terms, the main support for SMEs is provided by the Official Credit Institute (ICO), which has financing programmes such as its so-called "líneas de mediación" (credit intermediation facilities), which are loans that are studied and granted by credit institutions, the role of the ICO being to provide liquidity.[1] As seen in Table 1, during the last crisis these ICO facilities provided significant support for the financing of SMEs, although in 2015 the amount of new transactions fell considerably (to €9.7 billion), against a background of improvement in the financing conditions of credit institutions, following the launch of the Eurosystem's targeted longer-term refinancing operations. In addition, the ICO also offers financial support through the purchasing of shares and equity loans by its venture capital funds, although in much smaller amounts than under the aforementioned facilities. Various regions (such as Catalonia, Valencia, Murcia and the Basque Country) have public, financial or business institutions with objects and activities similar to those of the ICO, but the amounts of financing granted are more modest.

The Centre for Industrial Technological Development (CDTI) is a public enterprise, whose main activity consists in evaluating and

1 The insolvency risk of the operation is assumed by the private credit institution. Exceptionally, in 2010 and 2011 the ICO granted direct financing to SMEs and self-employed persons through the so-called ICO-Direct Programme, in this case assuming the whole of the credit risk.

Chart 1
FINANCIAL SUPPORT SCHEMES FOR FIRMS IN SPAIN



SOURCE: Banco de España.
NOTE: The arrows denote the direction of financing, whether in the form of a loan, an acquisition of shares or a guarantee.

a Various regions have credit institutes to finance firms preferably located in their region[Institut Català de Finances (ICF), Institut Valencià de Finances (IVF), and Instituto de Crédito y Finanzas de la Región de Murcia (ICREF)].

financing research projects, usually of SMEs, with a high technological content. The financial instruments normally used are loans,[2] although it also provides capital to firms through various venture capital funds. As seen in Table 1, the CDTI agreed a total of €1 billion of direct new financing in 2015.

Compañía Española de Financiación del Desarrollo (COFIDES) and Empresa Nacional de Innovación, SA (ENISA), are two commercial companies, majority owned by the Spanish State (the former reporting to the Ministry of Economic Affairs and Competitiveness and the latter to the Ministry of Industry, Energy and Tourism), whose objects are medium and long-term financing. In the case of COFIDES, the financing is targeted at investment projects executed abroad by Spanish firms (preferably through venture capital), while in that of ENISA, the financing is for projects of SMEs in which innovation is a strategic factor, and is mostly in the form of equity loans. The overall amount of financing provided through their various instruments is very moderate.

Mutual guarantee schemes (MGSs), which are financial institutions with mixed capital (provided by regional governments, credit

2 Through so-called "research and development projects".

Table 1
PROGRAMMES OF FINANCIAL SUPPORT FOR SMEs. NEW TRANSACTIONS

	2012		2013		2014		2015	
	Amount (€m)	No. of transactions	Amount (€m)	No. of transactions	Amount (€m)	No. of transactions	Amount (€m)	No. of transactions
Loans and shares								
ICO	11,555.1	162,090	13,940.8	190,175	21,485.3	298,814	9,876.5	166,010
Loan	11,510.9	162,075	13,884.3	190,168	21,468.9	298,799	9,671.0	165,998
Venture capital	44.2	15	56.5	7	16.4	15	205.5	12
CDTI	1,082.1	689	837.1	1,303	858.1	1,400	1,020.5	1,402
Loan	1,077.0	687	833.2	1,299	843.0	1,391	1,020.5	1,402
Venture capital	5.1	2	3.9	4	15.1	9	n. d.	n. d.
COFIDES	227.4	44	221.6	57	244.9	56	n. d.	n. d.
Loan	31.0	27	36.6	31	29.1	27	n. d.	n. d.
Venture capital	196.4	17	185.0	26	215.8	29	n. d.	n. d.
ENISA	100.5	643	84.1	638	66.2	558	90.5	704
Loan	98.4	637	83.3	636	65.9	556	90.3	700
Venture capital	2.2	6	0.8	2	0.3	2	0.2	4
Guarntees and insurance								
SGR (a)	753.4	7,726	664.6	7,382	739.6	8,770	819.7	9,752
CERSA (b)	298.7	n. a.	322.4	n. a.	353.5	n. a.	n. a.	n. a.
CESCE (c)	164.9	n. a.	169.2	n. a.	151.3	n. a.	n. a.	n. a.
TOTAL	**14,182.2**		**16,239.8**		**23,898.9**			
	Amount (€m)	No. firms / No. issues	Amount (€m)	No. firms / No. issues	Amount (€m)	No. firms / No. issues	Amount (€m)	No. firms / No. issues
Alternative markets								
Placements	42.9		97.8		698.4		569.0	
MAB	42.9	13	47.8	15	129.0	17	78.5	11
MARF	–	–	50.0	1	569.4	12	490.5	10
Crowdfunding platforms							0.5	2

SOURCES: ICO, CDTI, COFIDES, CESCE, ENISA, CERSA, BME and Banco de España.
NOTE: "n. a." means data not available.

a Bank guarantees for "loans and other deferred payments".
b Amount reguaranteed.
c Credit risk insurance policies.

institutions and SMEs themselves), grant guarantees that cover, at least partially, the risks implicit in lending transactions.[3] They have a marked regional and sectoral scope, and their activity is usually linked to a region. In 2015, they granted guarantees totalling €820 million, a larger amount than in 2014 (€740 million). A significant part of the risk assumed by MGSs is usually transferred to Compañía Española de Reafianzamiento, SA (CERSA).

In insurance, Compañía Española de Seguros de Crédito a la Exportación (CESCE) also plays a role. The majority of the capital of this company is publicly owned and the main Spanish credit institutions and insurance companies also have holdings in it. Traditionally, its main activity as an insurance company has included managing export credit risk on behalf of the State. The volume of export credit insurance policies (premiums) has fluctuated between €150 million and €170 million in recent years.

In the European sphere, in January 2015, the European Investment Bank (EIB) and the European Investment Fund (EIF) launched a lending facility specifically aimed at SMEs and the self-employed for investment projects in Spain ("Iniciativa pyme-garantía FEI"), in which they assume 50% of the borrower's credit risk (the rest being retained by the credit institution lender). The public contribution budgeted for this initiative was €800 million.

Finally, there are also mechanisms of public support for investment in newly created firms or those listed on an alternative market (such as the alternative stock market (MAB) or the alternative fixed-income market (MARF)) or, more recently, crowdfunding platforms,[4] through personal income tax incentives and other measures.[5] As seen in the lower part of Table 1, the financing obtained by firms through these channels has to date been limited (less than €600 million in 2015).

In short, there is a wide variety of – mainly public – institutions in Spain, offering support mechanisms for the financing of SMEs. Against a background of the need for fiscal consolidation, the amount of funds allocated to these programmes is necessarily limited. In this respect, it is especially relevant to carry out cost-benefit analyses and to use the results obtained to optimise the use of the various instruments available, limiting their application to situations in which appreciable failures in the operation of the financial market do indeed occur. Also, a simplification of the current framework, characterised, as seen above, by a large number of institutions with similar objects, may be appropriate.

3 From an operational standpoint, guarantees may be provided for different purposes. Thus, a guarantee may be provided for a bank loan or credit, but also to secure payment for domestic or foreign sales. A traditional operation consists in offering a guarantee to financial institutions which grant advances on the collection of export invoices.

4 Crowdfunding platforms were regulated in April 2015. They are a mechanism for channelling savings directly to productive investment, supplementing stock markets and banking systems. In particular, in October 2015, the CNMV (National Securities Market Commission) authorised the first (and so far only) equity crowdfunding, which is called *Bolsa Social.*

5 In the fiscal sphere, some regional governments and the State have introduced various incentives for the purchase of shares in newly created firms or in firms listed on alternative equity markets, provided that certain requirements are met regarding retention of the investment and the size of the firm. In the commercial sphere, in order to boost the MARF, regulatory changes have been made that affect both issuers of and investors in fixed-income securities. For the former, the limit on bond leveraging for public limited companies has been eliminated and, for investors, the regulations on private insurance and pension funds have been modified so that the acquisition of securities listed on this type of fixed-income market is apt for the coverage of technical provisions in the case of insurance.

Insolvency proceedings, when well designed, can be an efficient mechanism for restructuring the debts of firms in financial difficulty. However, the insolvency system in Spain has traditionally been characterised by long and costly procedures,[1] which result in the winding up of the firm in around 95% of cases.[2] These weaknesses were highlighted by the sharp increase in insolvency proceedings during the crisis, which led to congestion in the mercantile courts.

In order to resolve these and other problems, the Insolvency Law was reformed on numerous occasions between 2009 and 2015.[3] As regards the insolvency of non-financial firms, among other changes, the scope of application of the faster and cheaper "shortened insolvency proceedings" has been extended, "early agreement proposals" have been promoted, the role of insolvency trustees has been reformed, refinancing agreements have been promoted as an alternative to insolvency proceedings, the legal regime for reorganisation agreements has been improved and the sale of the firm as a going concern has been facilitated. In relation to individuals (consumers and self-employed persons), the "out-of-court payment agreement", a pre-insolvency mediation procedure, has been introduced, and a second chance mechanism has been created through which debtors may be discharged, under certain circumstances, from part of their outstanding debts.

This box presents an initial assessment of the effects of the four reforms to the legal framework for the insolvency of non-financial firms.[4] The reforms that affect the bankruptcy of individuals are not assessed as the information needed to do this is not available. The analysis presented below is based on insolvency data from the Mercantile Registers that is received by the Banco de España's Central Balance Sheet Data Office, and information on the balance sheets of insolvent firms obtained from the same source. The methodology used is the estimation of duration models and linear probability models,[5] using daily information on dates of approval of reorganisation agreements, commencement of liquidation and termination of insolvency proceedings to estimate the impact of the reforms over short time frames (three months) before and after the entry into force of the reforms. At the same time, in order to taken into account the effect of other factors on the probability of approval of a reorganisation agreement and the duration of insolvency proceedings, a number of characteristics of insolvent firms are included (size, age, profitability, indebtedness, sector, etc.), as well as some for the province in which their registered office is situated (unemployment rate and insolvency rate).

The results, summarised in Table 1, show that some of the reforms analysed may have had a notable impact on the probability of reaching a reorganisation agreement and on the duration of insolvency proceedings. In particular, the 2012 reform[6] appears to have increased the probability of a reorganisation agreement by at least five percentage points (see column 1), a significant impact

1 E. Van Hemmen (20072014), *Estadística concursal. Anuario 2006. Colegio de Registradores de la Propiedad y Mercantiles de España,* Madrid (and subsequent editions), and Consejo General del Poder Judicial (2007-2015), *La justicia dato a dato: año 2014* (and subsequent editions).

2 M. Celentani, M. GarcíaPosada and F. Gómez (2010), *The Spanish Business Bankruptcy Puzzle and the Crisis,* FEDEA Working Paper 2010-11. Banco de España (2014), 2013 Annual Report.

3 The Insolvency Law passed in 2003 has been amended on numerous occasions as a result of the crisis. Specifically, amendments have been made by Royal Decree-Law 3/2009, Law 38/2011, Law 14/2013, Royal Decree-Law 4/2014, Royal Decree-Law 11/2014, Law 9/2015 and Law 25/2015.

4 See M. García Posada and R. Vegas (2016, *Las reformas de la Ley Concursal durante la Gran Recesión,* Documentos de Trabajo, Banco de España, forthcoming.

5 Very similar results were obtained when probit models were used to analyse robustness.

6 Law 38/2011 of 10 October 2011 reforming Insolvency Law 22/2003 of 9 July 2003. Most of the reforms entered into force on 1 January 2012, while those that did not entered into force on the day following publication of the Law in the Official State Gazette (BOE) on 11 October 2011.

Table 1
MARGINAL IMPACT (%) ON THE PROBABILITY OF REACHING A REORGANISATION AGREEMENT AND ON THE DURATION OF INSOLVENCY

	1	2	3
Dependent variable	Prob. agreement (a)	Prob. agreement (a)	Duration (b)
2012 reform	5,109**	12,305***	
2012 reform * Tangible fixed assets		-0,216***	
March 2014 reform			-17,4**

SOURCE: Banco de España.
NOTE: *, **, *** denote a correlation coefficient significantly different from zero at the 10%, 5% and 1% significance levels, respectively.

a Results based on a linear probability model using 678 insolvencies declared between 1 October 2011 and 1 April 2012. The estimates include, as control variables, the age of the firm and the number of employees (both in logarithms), the ROA, tangible fixed assets as a percentage of total assets, the debt ratio (relative to assets), the liquidity ratio (current liabilities to current assets), the interest coverage ratio, the unemployment rate and the insolvency rate (number of insolvencies as a percentage of the total number of firms) of the province of the firm's registered office, 17 sectoral dummy variables and 17 provincial dummy variables.
b Results based on a log-logistic duration model estimated by maximum likelihood using 519 insolvencies declared between 8 December 2013 and 8 June 2014. The estimates include the control variables mentioned in note a) and a dummy variable for "express insolvencies" (insolvency proceedings that are dismissed as the assets are not sufficient to cover the costs of the process).

considering that only 9% of the firms in the sample obtained reorganisation agreements.[7] This suggests that, thanks to the reform, a larger proportion of firms benefited from a restructuring of their debt, without being wound up and having their assets sold off, which may in many cases be a sub-optimal option. Moreover, this impact on the probability of a reorganisation agreement appears to have been greater for firms with a lower liquidation value (approximated by the proportion of their total assets that are tangible fixed assets; see column 2), which suggests an increase in ex-post efficiency; i.e. in the probability of restructuring firms whose value as a going concern is greater than their liquidation value and of liquidating those for which the opposite is the case.

These effects may be a result of the changes to the appointment and composition of insolvency trustees effected by the 2012 reform. Previously, the general rule was that there were three trustees (a lawyer; an auditor, economist or commercial graduate, and an unsecured creditor), all of whom were appointed by the judge hearing the insolvency proceedings. Following the reform, there is generally only one single trustee (except in very complex insolvencies, when a large unsecured creditor is appointed as a second trustee). This may have reduced problems of coordination (e.g. conflicts between trustees) and has probably involved cost savings, factors that would be conducive to the reaching of a reorganisation agreement. In addition, the reform sought to increase the professionalism of insolvency trustees, which may have increased the capacity to distinguish between viable and non-viable firms. Thus, the requirements to become a trustee, relating to experience and specific training, were tightened and legal persons that have at least one practising lawyer and one auditor, economist or commercial graduate on their staff (e.g. consultancies) can be appointed as insolvency trustees.

The results obtained also indicate that the March 2014 reform has substantially reduced the duration of insolvency proceedings.[8] Specifically, their average duration was reduced by at least 17% (see column 3). This may be due to the fact that the reform improved certain aspects of the legal framework for refinancing agreements (the so-called *"preconcurso de acreedores").* Although the number of firms that reach refinancing agreements with their creditors is very small (between 100 and 200 per annum), they are much larger than the majority of those entering insolvency proceedings; for example, in 2013, the average assets of those that obtained a refinancing agreement were €117 million, while the average assets of firms subject to insolvency proceedings were €6 million.[9] This suggests that, by increasing refinancing agreements as an alternative to insolvency, the March 2014 reform may have freed up mercantile court resources, reducing their congestion and, therefore, the duration of insolvency proceedings.

7 This percentage is in line with the literature. For example, E. Van Hemmen (2014), "La sociología de la liquidación concursal en la realidad española", in La liquidación de la masa activa, edited by Á. J. Rojo FernándezRío, J. Quijano González and A. B. Campuzano, Aranzadi-Thomson Reuters, finds that 5-10% of the firms in the sample reached a reorganisation agreement during the period 20062012.

8 Royal Decree-Law (RDL) 4/2014 of 7 March 2014 adopting urgent measures on corporate debt refinancing and restructuring, which entered into force on 8 March 2014.

9 E. Van Hemmen (2014), "La sociología de la liquidación concursal en la realidad Española", in *La liquidación de la masa activa,* edited by Á. J. Rojo FernándezRío, J. Quijano González and A. B. Campuzano, AranzadiThomson Reuters.

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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
CEIPOS	Committee of European Insurance and Occupational Pensions Supervisors
CESR	Committee of European Securities Regulators
CNE	Spanish National Accounts
CNMV	National Securities Market Commission
CPI	Consumer Price Index
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
MMFs	Money market funds
MROs	Main refinancing operations
MTBDE	Banco de España quarterly macroeconomic model
NCBs	National central banks
NFCs	Non-financial corporations
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
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
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.