BANCO DE PORTUGAL
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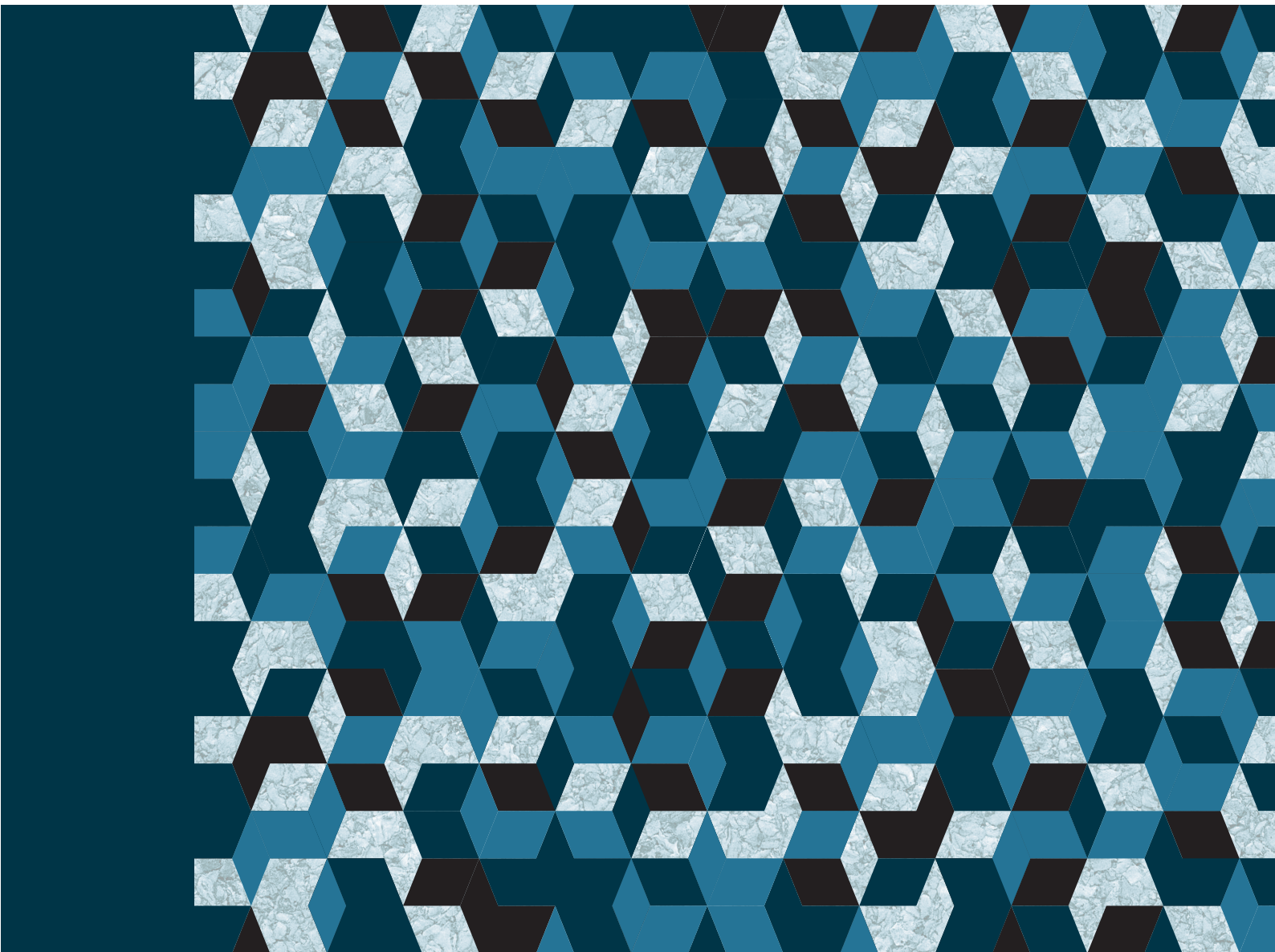
# Economic Bulletin

## October 2016



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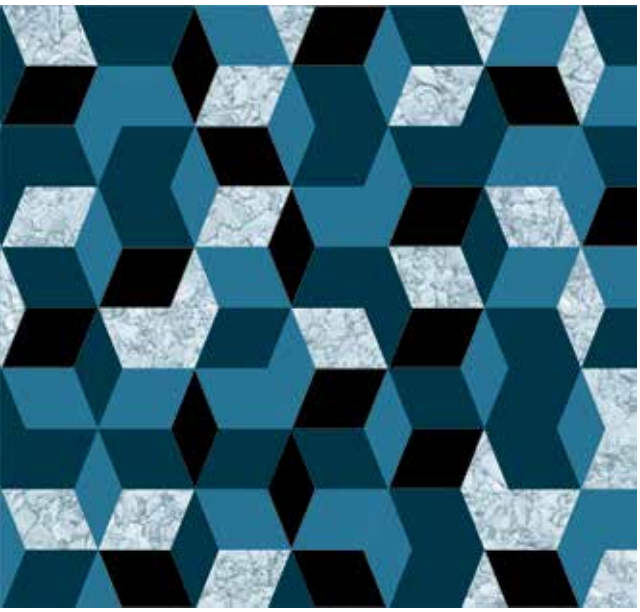
# Contents



# I
# The portuguese economy in the first half of 2016

# 1. Overview

Over the course of 2016, the Portuguese economy has maintained some of the main features that have characterised the economic recovery observed since 2013. The pace of growth in economic activity has stood below that of previous business cycles, namely affected by high levels of indebtedness in the public and private sectors, adverse demographic developments and a macroeconomic environment characterised by relatively weak external demand dynamics. Against a background of employment growth and a strong decline in unemployment, labour productivity stabilised somewhat in recent quarters, driven *inter alia* by the strong cumulative drop in investment in the past few years, which has hampered the adoption of new technologies and new productive processes. However, these developments have coexisted with a growing shift of productive inputs to economic sectors that are more exposed to international competition, a gradual improvement in the level of human capital in the labour force and a shift of credit flows to firms with a better risk profile.

The ongoing recovery process remains compatible with preserving a number of key macroeconomic balances. In the case of the Portuguese economy, one of the most relevant features of the macroeconomic adjustment process was the transition to a current and capital account surplus, on the basis of a goods and services surplus. These external surpluses are needed in order to reduce the high external debt characterising the Portuguese economy, in a sustained manner. Nevertheless, preserving these external surpluses is not indubitable, in particular within a macroeconomic environment requiring an acceleration in investment for stronger growth in potential output, together with considerable uncertainty regarding developments in terms of trade, which have namely been affected by oil prices.

Another key aspect for macroeconomic stability is ensuring balanced and sustained public accounts. In the case of the Portuguese economy, this objective requires additional structural adjustment efforts. Available evidence for the first half of the year seems to suggest that the deficit target established by the Council of the European Union for 2016 as a whole is feasible, but it should nonetheless be noted that budget execution in the second half of the year continues to be rather demanding and subject to non-negligible risk factors. In addition, the government debt level as a percentage of GDP remains very high and is still not following a clear downward trend, which underlines the importance of complying with the commitments made under European fiscal rules.

An analysis of cumulative developments in the main components of global demand since the first half of 2013 – adjusted for an estimate of their imported content – confirms that exports are the most dynamic demand component, and the only one with cumulative growth above GDP. Despite having weakened somewhat in the recent past, exports continued to gain market share in the first half of 2016. By contrast, over this period, government consumption stabilised and public investment recorded a negative cumulated contribution to GDP dynamics, reflecting the need to sustain the ongoing fiscal consolidation process. Net private consumption has recorded a cumulated path close to GDP, given that this aggregate's high buoyancy over the past few years was concentrated in goods with high imported content, in particular car purchases. Finally, total investment declined in the second half of 2015 and the first half of 2016, reversing the increases seen in the previous two years. This weak investment dynamic in the current cycle of economic recovery, which has also been observed in other developed economies, is particularly adverse for the Portuguese economy, given the relatively low levels of capital *per worker*, compared with the euro area average. There is more than one reason behind the absence of recovery in investment,

in particular in the private sector. These developments are being influenced by, *inter alia*, a high level of indebtedness of non-financial corporations, domestic and foreign uncertainty, unutilised capacity, as well as expectations that overall demand will be weaker over the long term than previously expected, which was reflected in the relative stabilisation of business confidence observed since the start of 2015.

This Bulletin updates the macroeconomic projections for 2016, broadly maintaining the key features identified above. Compared with the last projection published, GDP growth is revised downwards, as a result of revisions to investment and, to a lesser extent, private consumption, which are not offset by an upward revision to total exports. After two years of GDP growth similar to the euro area average, the Portuguese economy is projected to record a real divergence in 2016. However, taking into account the decline in total population, the pace of *per capita* growth is expected to be similar in Portugal and the euro area. The absence of real convergence in the current period of economic recovery – particularly given the severity and length of the recession preceding it – should be interpreted taking into account the structural constraints on Portuguese economic growth, associated, among other factors, with weaknesses in market functioning, with the quantity and quality of productive inputs, as well as with the past accumulation of inefficient allocations of resources and excessive indebtedness levels.

The Portuguese economy faces a number of important challenges. At external level, the Economic and Monetary Union has not yet been completed, which requires strengthening the European institutional architecture. At domestic level, and in the current context of low nominal growth in economic activity, the process of structurally restoring the macroeconomic balances requires a continuous strengthening of macroeconomic stability and the promotion of incentives for sustainable economic growth. In this respect, it is particularly important to ensure a predictable institutional and tax framework and to pursue structural reforms aimed at supporting investment, innovation and factor mobility. It is also necessary to continue the fiscal consolidation efforts, in order to ensure a sustained decrease in the levels of public indebtedness. In addition, in the context of a more stringent regulatory environment at European level, it is important to ensure that adequate incentives are in place for an efficient pursuit of financial intermediation. In all these different aspects, the quality of public policies is important, including their design, continuity and consistency. Coordinating the expectations of domestic and external agents around this long-term institutional environment is also crucial. This coordination would also contribute to preserving sustained financing flows in international debt markets, which should remain a macroeconomic priority in Portugal. Currently, the ECB's comprehensive monetary policy package, including the communication regarding its expected duration and evolution, has contributed to significantly improve the financing conditions of sovereigns and private agents in the euro area and in Portugal in particular. In addition, this package has protected the euro area from the adverse financial implications of the global economic shocks which have occurred over the past year. Nevertheless, this exceptional degree of monetary accommodation will not continue indefinitely. This is therefore an urgent and unique opportunity to deepen a framework promoting macroeconomic stability and economic growth, as well as to anchor agents' expectations around this regime.

# 2. International environment

## The world economy is subject to a high degree of uncertainty

In the course of the first half of 2016, the world economy maintained the main features that characterised it throughout 2015 (Table 2.1). The advanced economies recorded moderate economic growth. The outlook for emerging market and developing economies improved slightly, despite high heterogeneity across countries. The outcome of the referendum in the United Kingdom in favour of withdrawal from the European Union (EU) resulted in a slight deterioration in the outlook for the world economy, given a substantial increase in economic, political and institutional uncertainty and despite the relatively orderly reaction of financial markets and the partial recovery of confidence indicators. Nevertheless, there is high uncertainty underlying further developments regarding the outcome of the referendum and the process of withdrawal from the EU, which makes it difficult to quantify its impact (Box 'The economic impact of the United Kingdom's withdrawal from the European Union (*Brexit*)'). In this context, the IMF made a slight downward revision to the outlook for the world economy due to lower growth in the advanced economies. The IMF projects world GDP growth of 3.1 and 3.4 per cent in 2016 and 2017 respectively. The IMF identifies mostly downside risks mainly associated with potential political instability in some countries, the adoption of protectionist measures at global level, stagnation in the advanced economies and the possibility of an abrupt economic adjustment process in China.

Developments in financial markets throughout the first half of the year were mainly conditioned by the outlook for the world economy and the UK referendum. After falling strongly in 2015, the price of oil reached a minimum of 28 US dollars / barrel in January 2016. The gradual rise observed since then benefited from the reduction in oil supply, in particular from non-OPEC countries. The evolution of oil prices in 2016 contributed to a decline in global uncertainty. In August, the price of oil reached nearly 50 US dollars / barrel, compared with 59 US dollars / barrel in the first half of 2015. The sharp fall in oil prices in 2015 represented a positive shock on income in oil-importing economies. However, these countries did not record a significant acceleration in activity, which may be related to the high level of debt characterising most of these economies.

**Table 2.1** • Gross Domestic Product | Real growth rate, percentage

| | *WEO* October 2016 | | | Revisions from April 2016 *WEO* (p.p.) | |
|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2016 | 2017 |
| World | 3.2 | 3.1 | 3.4 | -0.1 | -0.1 |
| Advanced economies | 2.1 | 1.6 | 1.8 | -0.3 | -0.2 |
| USA | 2.6 | 1.6 | 2.2 | -0.8 | -0.3 |
| Japan | 0.5 | 0.5 | 0.6 | 0.0 | 0.7 |
| United Kingdom | 2.2 | 1.8 | 1.1 | -0.1 | -1.1 |
| Euro area | 2.0 | 1.7 | 1.5 | 0.2 | -0.1 |
| Germany | 1.5 | 1.7 | 1.4 | 0.2 | -0.2 |
| France | 1.3 | 1.3 | 1.3 | 0.2 | 0.0 |
| Italy | 0.8 | 0.8 | 0.9 | -0.2 | -0.2 |
| Spain | 3.2 | 3.1 | 2.2 | 0.5 | -0.1 |
| Emerging and developing economies | 4.0 | 4.2 | 4.6 | 0.1 | 0.0 |

Source: IMF, *World Economic Outlook*, October 2016.

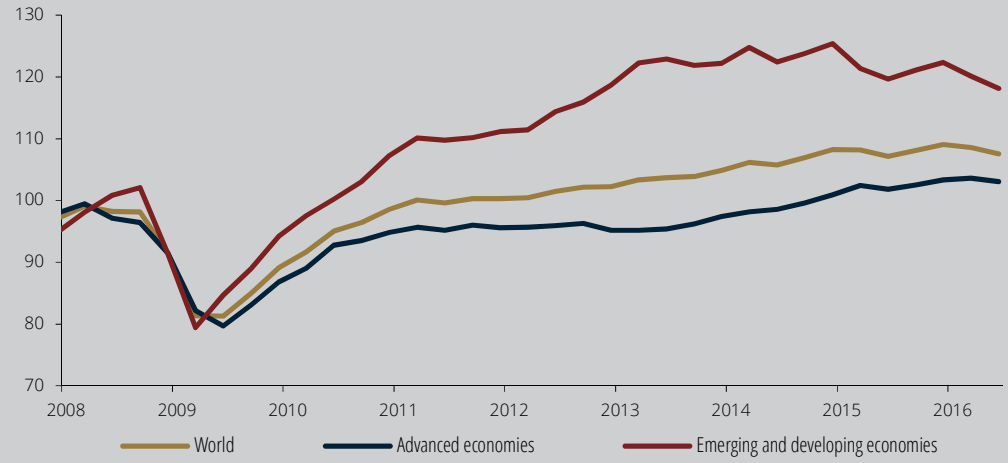
In early 2016, financial markets were somewhat volatile, with asset valuation losses, against a more negative outlook for the world economy. Between March and June, global and euro area financial market conditions stabilised, supported by better than expected economic data, rising oil prices and the additional monetary stimulus in the euro area. In the aftermath of the UK referendum, volatility and risk increased sharply. However, these movements were rapidly reversed and their impact on the real economy thus far has not been visible. The euro area banking sector is a relevant exception to these normalisation movements, translated into the maintenance of the downward trend in this sector's equity prices in view of prospects of lower profitability in the future.

World trade remained rather weak in the early months of 2016. In the first half of the year, world imports of goods increased 0.3 per cent year-on-year, combining sustained growth in advanced economies (1.2 per cent) with further contraction in emerging market and developing economies (-1.5 per cent) (Chart 2.1). World trade was particularly weak in Asia and Latin America, also possibly reflecting weak economic activity in these regions. The IMF suggests in the *World Economic Outlook* of October 2016 that approximately ¾ of the slowdown in world trade growth since 2012 has been due to reduced growth of activity and, in particular, of investment. The interruption of the trend towards free trade and the return of protectionist movements, in addition to smaller growth in global value chains, are also behind the weak dynamism of world trade.

## Moderate growth persisted in the advanced economies, while prospects for emerging economies improved slightly

The pace of economic growth in the advanced economies remained moderate, standing at 1.5 per cent year-on-year in the first half of 2016. In most economies, growth was underpinned by domestic demand and, in particular, by private consumption. Investment, as measured by gross fixed capital formation (GFCF), continued to grow moderately, making a marginal contribution to GDP growth (Chart 2.2). Another common characteristic among the main advanced economies in the ongoing recovery process is the strengthening of labour markets. Rising employment and moderate GDP growth indicate that productivity growth has also been weak and well below pre-crisis levels (Chart 2.3). Note, however, that charts 2.2 and 2.3 compare

**Chart 2.1 •** World trade - volume of goods and services imports | Index Jan. 2008=100




Source: CPB Netherlands Bureau for Economic Policy Analysis.

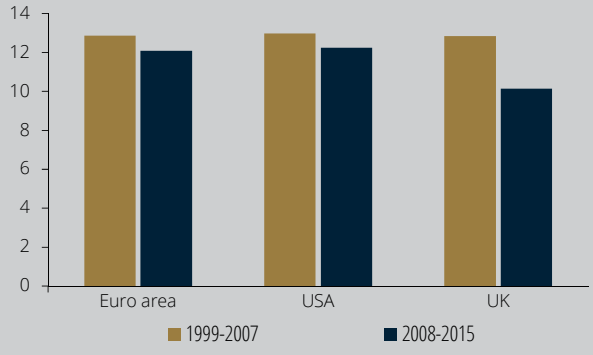
two very different periods, with the most recent including a strong recession and the subsequent ongoing recovery.

The research agenda has failed so far to provide an explanation for these developments. Countless and closely interlinked factors have been suggested to explain these developments. The high indebtedness level of the advanced economies may be restricting credit growth, despite the low financing costs, mitigating the buoyancy of investment. Companies may also be restraining investment due to uncertainty about future demand and profitability. Moreover, low productivity growth may also be reflecting the weak dynamism of investment in the recent past, implying lower capital stock renewal. Another factor that may explain weak productivity growth is associated with persisting effects of strong credit growth in the period before the international financial crisis, that led to labour allocation to sectors with lower productivity growth. Against this background, the considerable easing of financial conditions may have created incentives for banks, in particular of the European economies, to 'evergreen' loans, i.e., to continue rolling over loans to unproductive firms and postponing the reallocation of productive factors in the economy. Finally, a number of more secular hypothesis have been advanced in explaining the weak dynamism of investment, such as the deceleration of technological progress or the ageing population.

In the first half of the year, GDP in the United States grew 1.4 per cent on average, year-on-year, below potential growth and in contrast to robust growth in 2015 (2.6 per cent). Similarly to the recent past, growth was boosted by private consumption, despite the deceleration in this demand component. In turn, net exports continued to make a negative contribution. The US labour market remained robust, with sustained employment growth. Inflation rose to levels around 1 per cent throughout the year, while headline inflation remained slightly above 2 per cent. In this context, the Federal Reserve System at its December 2015 meeting decided to keep the federal funds rate target within a range of 0.25 to 0.50 per cent.

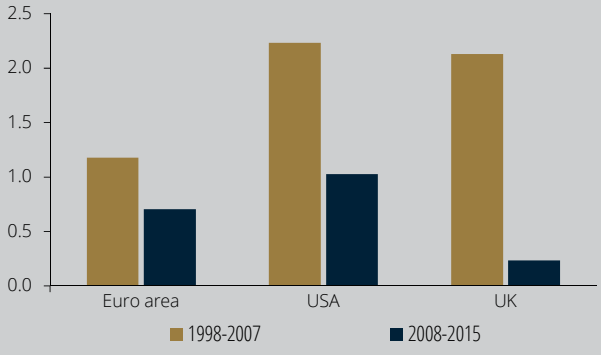
Economic growth in the United Kingdom was stronger than anticipated in the first half of the year, with a year-on-year rate of change of 2.1 per cent. This buoyancy was driven by private consumption growth, with a very slight contribution from net exports. However, the outcome of the referendum led to a substantial downward revision to the outlook for activity. In the IMF's October projections, this revision was of -0.1 p.p. in 2016 and -1.1 p.p. in 2017. According to the Bank of England, the downward revision to growth mainly reflects

**Chart 2.2** • Private non residential GFCF
| Percentage of GDP, period average




Source: AMECO and Bureau of Economic Analysis.

**Chart 2.3** • Labour productivity growth
| Average growth rate of real GDP per hour worked in the period




Source: OECD.

a revision to the economy's supply capacity in the medium to long term. In turn, the near term weakness in demand, signalled by the fall in confidence indicators, is likely to lead to an increase in spare capacity and an eventual rise in unemployment. In parallel, inflation in the United Kingdom, which remained slightly above 0 per cent in the first few months of 2016, is likely to rise in the near term to levels close to the 2 per cent target. This upward pressure on inflation is chiefly due to the strong depreciation of the pound sterling in the aftermath of the referendum. In fact, the pound sterling fell 9.7 per cent in nominal effective terms between the referendum date and 1 September. Against this background, the Bank of England adopted a package of measures designed to support the economy: (i) a 25 basis point cut in the Bank Rate to 0.25 per cent; (ii) a Term Funding Scheme to provide funding for eligible institutions with a maturity of four years and with lower cost for banks that maintain or expand net lending to the real economy; (iii) the purchase of sterling denominated investment-grade corporate non-financial bonds, issued by firms making a material contribution to the UK economy, in an amount up to 10 billion pounds; (iv) an increase in the stock of purchased UK government bonds by 60 billion pounds, taking the total stock of these asset purchases to 435 billion pounds.

In emerging market economies, real GDP increased by 4.4 per cent in the first half of 2016 year-on-year, slightly higher than anticipated, due to improvements in major economies. Stronger growth in emerging market economies and the slow recovery from the crisis in advanced economies continued to widen the gap in economic growth between the two groups of countries. The stimulus given by the economic policy in China seems to be have been effective and growth prospects remain unchanged. Reflecting government support, investment in infrastructures was strong, having moderated in the manufacturing industry and construction. In Brazil, the contraction in GDP at the start of the year was lower than anticipated, but political uncertainty remains high. In turn, Russia benefitted from higher oil prices, adding to lower GDP contraction in early 2016, following the strong fall in 2015.

## The moderate recovery in the euro area continued, driven by domestic demand

The process of economic recovery continued in the euro area, with stronger-than-expected growth at the beginning of 2016. In the first half of the year GDP grew 1.7 per cent year-on-year, mainly fuelled by domestic demand, while net exports continued to make a slightly negative contribution. With regards to domestic demand, private consumption made a contribution of 1.1 p.p. and GFCF of 0.5 p.p., both in line with figures for 2015. The recovery was broadly based across most euro area countries, albeit at a different pace (Chart 2.4). Among the largest euro area countries, Spain recorded positive developments with a year-on-year growth above 3 per cent, driven by private consumption and GFCF. In Germany, GDP growth has been slightly above the euro area average, with relatively more dynamic public consumption and GFCF. In turn, growth in France and Italy was below the euro area average. French GDP grew 1.4 per cent year-on-year in the first half of 2016, with a 2.3 p.p. contribution from domestic demand. In Italy, GDP increased slightly below 1 per cent and also with a stronger contribution from domestic demand. Weak growth in Italy in the past few years implies that GDP is still far below its pre-crisis level (nearly 8 p.p.).

The euro area labour market continued to improve. This is evident in developments in employment, despite remaining below pre-crisis levels in most euro area countries (Chart 2.5). The unemployment rate in the euro area continued its trend of slight decline, albeit remaining above 10 per cent. At individual country level, heterogeneity is high. While in Germany the unemployment rate fell to 4.2 per cent in June,

in Spain it dropped to below 20 per cent for the first time since mid-2010.

Since 2009 the euro area has recorded a surplus in the combined current and capital account, which has increased over time, reaching 3 per cent of GDP in 2015 (Chart 2.6). These developments are seen across most euro area countries, albeit with some differences in magnitude. The surplus is particularly high in Germany, standing at 8.5 per cent of GDP. The countries under ongoing adjustment processes have also recorded surpluses in the past three years. The persistence of these external imbalances in the euro area, in particular in countries with no need to deleverage the whole economy, may reflect weak domestic demand and may represent an economic inefficiency for the euro area as a whole.

In the first half of the year, external demand for Portuguese goods and services decelerated substantially to 2.9 per cent, year-on-year, after 4.2 per cent growth in 2015 (Table 2.2). This deceleration was due to lower growth in demand from euro area trading partners (4.4 per cent in the first half of the year, compared with 6.3 per

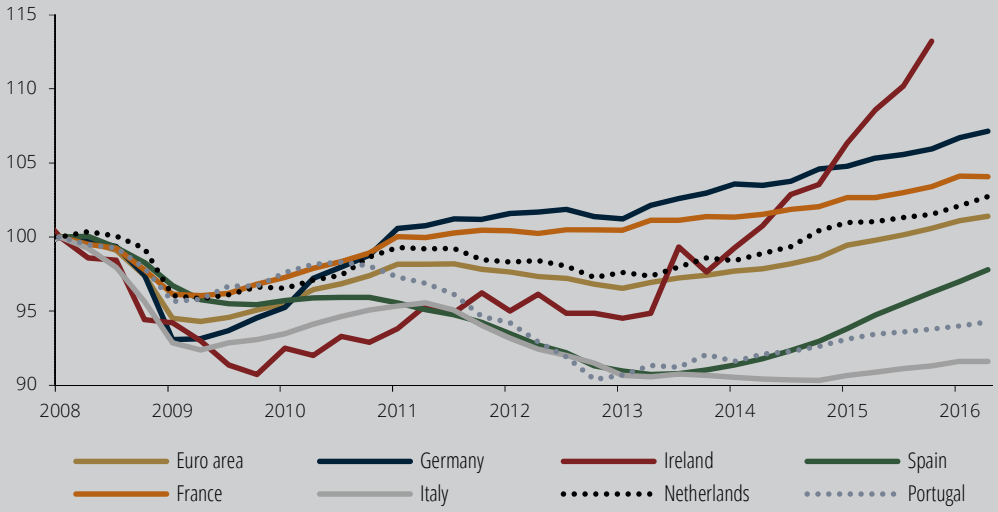



**Chart 2.4 •** Real GDP in the euro area | Index 2008 Q1=100

Source: Thomson Reuters.

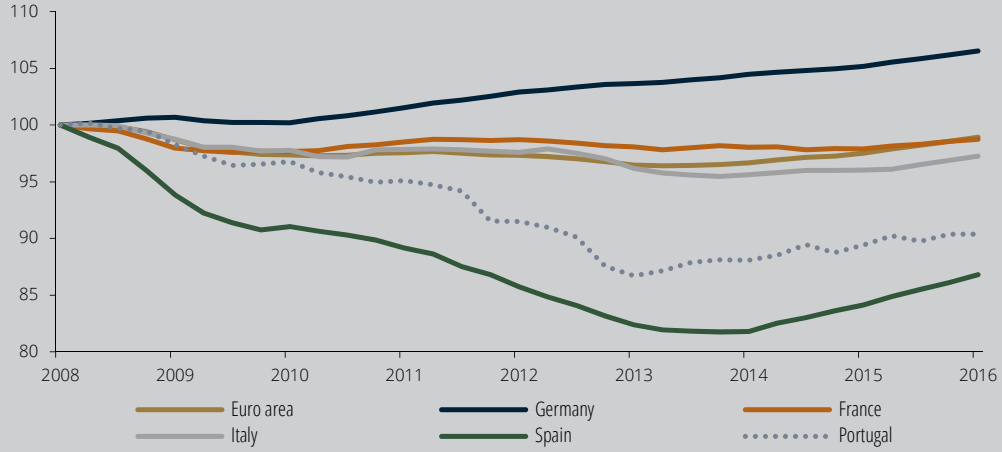



**Chart 2.5 •** Euro area employment | Index 2008 Q1=100

Source: Eurostat.

cent in 2015). Conversely, the growth of external demand by economies outside the euro area remained stable at very low levels in the first half of the year (0.5 per cent, after 0.8 per cent in 2015). Taking into account external demand by Angola, the effect is even more pronounced.[1] In fact, external demand for goods and services taking into account imports by Angola increased by 1.9 per cent in the first half of 2016 compared with 2.4 per cent in 2015 and 5.2 per cent in 2014.

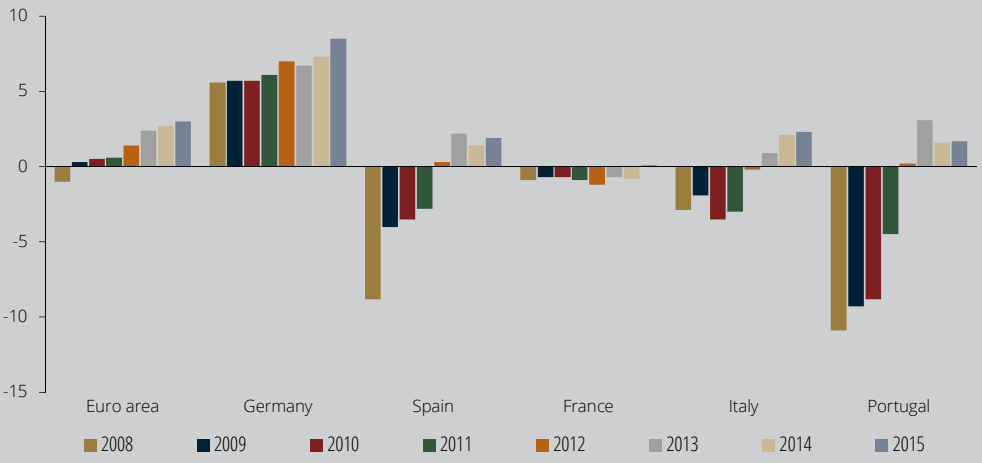
**Table 2.2** • External demand of goods and services for the Portuguese economy | Real year-on-year rate of change, percentage

| | | *y-o-y* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Weights [b] | 2012 | 2013 | 2014 | 2015 | H2 2014 | H1 2015 | H2 2015 | H1 2016 |
| External demand (ECB) [a] | 100.0 | -0.2 | 1.9 | 4.8 | 4.2 | 4.9 | 4.6 | 3.8 | 2.9 |
| Intra euro area external demand | 66.3 | -2.5 | 1.0 | 5.1 | 6.3 | 5.5 | 6.5 | 6.2 | 4.4 |
| of which: | | | | | | | | | |
| Spain | 27.1 | -6.2 | -0.3 | 6.4 | 7.5 | 7.1 | 7.5 | 7.5 | 6.0 |
| Germany | 13.7 | 0.3 | 3.2 | 4.0 | 5.0 | 3.6 | 5.4 | 4.7 | 3.2 |
| France | 12.5 | 0.8 | 2.2 | 4.8 | 6.4 | 5.3 | 6.6 | 6.3 | 3.8 |
| Italy | 3.9 | -8.3 | -2.2 | 3.0 | 5.8 | 3.2 | 6.4 | 5.3 | 2.1 |
| Extra euro area external demand | 33.7 | 4.3 | 3.7 | 4.3 | 0.8 | 4.0 | 1.6 | 0.0 | 0.5 |
| of which: | | | | | | | | | |
| United Kingdom | 5.6 | 2.9 | 3.4 | 2.5 | 5.8 | 1.9 | 6.1 | 5.6 | 3.3 |
| USA | 3.5 | 2.2 | 1.1 | 4.4 | 4.6 | 4.9 | 5.4 | 3.8 | 0.7 |
| *Memo:* | | | | | | | | | |
| Goods and services imports from Angola [c] | 4.6 | 8.5 | 9.0 | 11.2 | -23.8 | | | | |
| Adjusted external demand [d] | | 0.3 | 2.4 | 5.2 | 2.4 | 5.3 | 2.8 | 2.1 | 1.9 |

Sources: ECB, CPB, IMF, Thomson datastream and Banco de Portugal calculus.

Notes: (a) External demand is computed as weighted average of the imports volume of Portugal's main trading partners. Each country/region is weighted by its share in Portuguese export. (b) Shares computed using 2015 data. (c) The weight refers to the weight of nominal goods and services exports to Angola on portuguese exports. (d) External demand indicator adjusted for the importance of the foreign trade with Angola. Corresponds to the weighted average (by the exports weight) between the external demand indicator calculated by the ECB and the volume of the goods and services imports of the Angolan economy.

**Chart 2.6** • Current and capital account in the euro area | Percentage of GDP



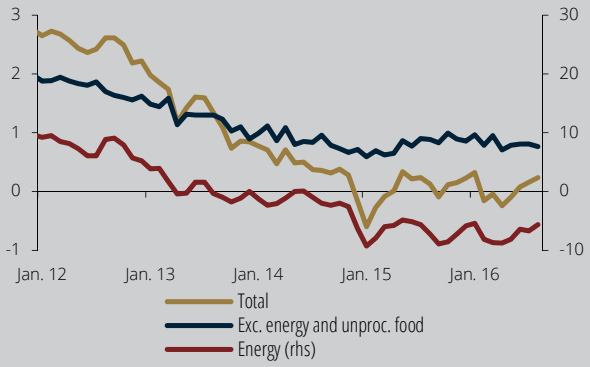

Source: Eurostat.

## Inflation in the euro area stabilised at very low levels

Inflation in the euro area, as measured by the annual rate of change in the HICP, has been around 0 per cent throughout 2016, standing at 0.2 per cent in July. These low inflation levels have been seen across euro area countries. Energy prices continued to make a negative contribution to total inflation, although this contribution is expected to decrease in the course of the year as the base effect from the fall in oil prices seen until January unwinds. Nevertheless, the annual rate of change in the HICP excluding unprocessed food and energy also remained stable at relatively low levels, standing at 0.8 per cent between May and July (Chart 2.7). Regarding the four largest euro area countries, the annual rate of change in the HICP excluding unprocessed food and energy stood at 1.2 per cent in July in Germany, while in France, Italy and Spain it was around 0.5 per cent.

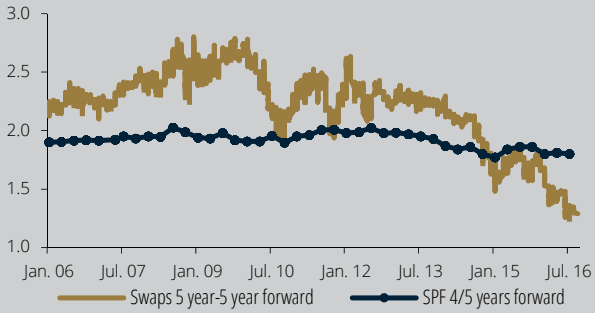
These developments in inflation, clearly below the ECB's objective of price stability are also associated with the evolution of inflation expectations. In fact, despite a new package of monetary stimulus measures, inflation expectations did not increase in the euro area. Expectations as measured by market instruments continued on a downward trend, while expectations measured by surveys stabilised at slightly below 2 per cent (Chart 2.8).

**Chart 2.7** • IHCP euro area inflation
| Year-on-year rate of change




Source: Eurostat.

**Chart 2.8** • Euro area inflation expectations
| Percentage




Sources: ECB and Thomson Reuters.

Note: Expectations implicit in inflation swaps (Swaps 5 year-5 year forward) and expectations implicit in the Survey of Professional Forecasters (SPF 4/5 years forward).

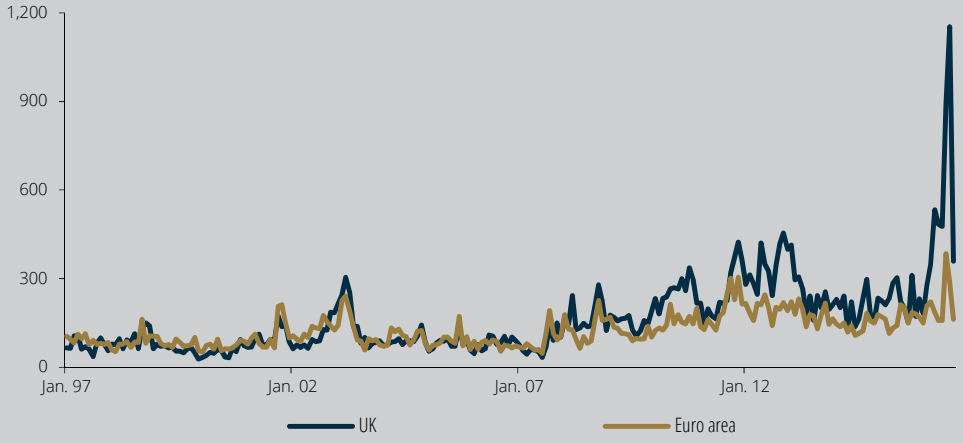
## Box 2.1 | The economic impact of the United Kingdom's withdrawal from the European Union (Brexit)

Following the United Kingdom's (UK) vote on 23 June to leave the European Union (EU), a complex political process has started, with significant economic implications. However, how this process will evolve and end is still surrounded by uncertainty and may take several years. The design of the future relationship between the UK and the EU is also unknown. To start the withdrawal process, the British government will have to activate Article 50 of the Treaty on European Union, which has not been done yet.

The most immediate effects of the referendum were considerably higher economic, political and institutional uncertainty, in particular in the UK (Chart 1). In the financial markets, volatility reached very high levels, given the broad based sentiment of higher risk aversion, triggering an increase in the demand for assets that are perceived as safer by investors. However, turbulence in the financial markets was fairly short-lived. In early September, the visible impact of the vote to leave the EU was basically concentrated in the UK, with the pound sterling falling nearly 10 per cent in nominal terms. In turn, the adverse impact of the referendum result on consumer and business confidence in the UK was also partly reversed, as financial markets calmed down, a new government was appointed and the Bank of England adopted an wide set of monetary policy measures (Section 2 of this *Economic Bulletin*).[2]

In the short term, the persistence of high uncertainty may have negative macroeconomic spillovers on the European economy, as economic agents become more cautious, postponing investment and consumption decisions and seeking safer assets. These spillovers will obviously be

**Chart 1** • Economic policy uncertainty index | 1997-2009=100




Source: www.policyuncertainty.com.

Notes: (a) The index is based on monthly count of press articles that include references to economic uncertainty and economic policy issues. (b) The index for the euro area results by aggregating the indices for the four largest economies, using as weight the respective GDP.

more significant in the UK, although a number of political risks triggered by the referendum result should also be considered as well as the persistence of some fear about the situation of banks in a number of economies, which may lead to a deterioration of financing conditions. In this context, projections for economic growth in the UK were significantly revised downwards, particularly in 2017, while in the euro area there was only a slight downward revision. In particular, the European Commission estimates a cumulative loss in GDP in 2017 between 1.0 and 2.75 p.p. in the UK and between 0.25 and 0.5 p.p. in the euro area, considering scenarios with different degrees of severity.[3] However, it should be noted that the economic indicators released for the United Kingdom over the last few months have been better than expected, which together with financial market stabilisation and relatively greater confidence of economic agents, suggest than in the near term the macroeconomic impact of the referendum may be less negative than initially expected.

Albeit dependent on future negotiations, the UK's withdrawal from the EU is expected to imply a decrease in the degree of economic integration between the two economic blocks. At this point, considering a decreasing degree of economic integration, the clearer alternatives are: (1) accession to the European Economic Area (EEA) translated into wide access to the single European market, but also including the adoption of EU rules and regulations, contribution to the EU budget and free movement of persons; (2) the possibility of concluding free trade agreements (FTAs), translated into greater autonomy for the UK, but potentially a more restricted access to the single market (this type of agreement may possibly eliminate customs barriers in trade in goods, but are traditionally limited as regards the trade in services without the counterparts of a single market); (3) return to the conditions of the general agreement on trade of the World Trade Organisation (WTO), where there is no need to agree on common rules and regulations, but under which UK exports would be subject to the EU's common external tariff (according to the mostfavourednation clause).

According to economic literature, the decrease in the degree of economic integration between the UK and the EU may have significant economic repercussions. The impact on external trade and foreign investment stands out among the possible transmission channels. Customs and non-customs barriers are expected to increase in the UK's trade with the EU. It is also important to note that even conditions for the UK's trade with third countries will cease to be regulated by the agreements thus far in force within the scope of the EU, which will also affect the UK's trade with these economies. Trade with the EU represents around half of total UK trade. Therefore, the decline in these trade flows as compared with permanence in the EU does not seem to be liable of being offset by an increase in the UK's trade with third countries. The UK is also likely to lose attractiveness as a destination of foreign direct investment, which may translate into a decrease in inflows, but also into potential disinvestment, notably in the financial sector, should the UK lose the passport rights prevailing at EU level.[4] The decline in external trade and foreign investment is also likely to be amplified by potential negative indirect effects on productivity and potential long-term growth.[5] It should also be noted that all these effects will start to be immediately felt, given that economic agents will now make their investment and consumption decisions according to the situation expected over the long term. Moreover, the reallocation of factors between sectors, resulting from the change in the nature and degree of economic integration, may also raise some transition costs. Comparatively, the UK's trade and financial exposure to the euro area is clearly higher than the euro area's (or Portugal's) exposure to the UK (Table 1).[6]

**Table 1** • Trade and financial exposure

| 2014 data | | UK to the euro area | Euro area to the UK | Portugal to the UK |
|---|---|---|---|---|
| Exports of goods | % of GDP | 7.0 | 2.6 | 1.7 |
| | % of total | 43.8 | 13.3 | 6.1 |
| Exports of services | % of GDP | 4.1 | 1.3 | 1.9 |
| | % of total | 33.9 | 19.0 | 13.8 |
| Imports of goods | % of GDP | 10.7 | 1.6 | 1.0 |
| | % of total | 46.9 | 9.4 | 3.1 |
| Imports of services | % of GDP | 3.1 | 1.0 | 0.8 |
| | % of total | 42.7 | 16.7 | 11.1 |
| FDI – assets (position) | % of GDP | 23.9 | 15.6 | 1.4 |
| | % of total | 31.5 | 20.1 | 3.1 |
| FDI – liabilities (position) | % of GDP | 33.3 | 11.5 | 4.6 |
| | % of total | 45.0 | 18.9 | 6.3 |
| Portfolio investment – assets (position) | % of GDP | 50.1 | 9.8 | 4.3 |
| | % of total | 38.3 | 16.2 | 6.2 |

Sources: ECB, Eurostat, IMF, ONS and Banco de Portugal.

Notes: (a) FDI: Foreign direct investment. (b) In the case of UK FDI, exposure to the euro area does not include Cyprus, Latvia, Lithuania and Malta.

In particular for the UK, various studies have empirically assessed the macroeconomic impact of the UK's withdrawal from the EU through economic models, which depending on the horizon envisaged, consider some of the above-mentioned channels (Table 2). Generally, simulations for the long-term impact consider mainly a decline in external trade, foreign direct investment and potential output. They also consider the various possibilities mentioned above for a future relationship of the UK with the EU. These estimates, which are obviously surrounded by high uncertainty, suggest that over the long term, UK GDP may be approximately between 2 and 8 p.p. lower than if the UK remained in the EU. The impact in the euro area is likely to be far smaller, but it will probably reflect some heterogeneity across countries. In the case of Portugal, the main impact will result from developments in external trade flows, being potentially more relevant in the case of services exports (Table 1).

**Table 2** • Estimates of the macroeconomic impact of Brexit in the long run (percentage deviations from a baseline level with UK remaining in the EU)

| | OECD | LSE/CEP | HM Treasury | | | NIESR | | | |
|---|---|---|---|---|---|---|---|---|---|
| UK future relationship with EU: | FTA | FTA | EEA | FTA | WTO | EEA | FTA | WTO | WTO+ |
| UK GDP | -5.1 | -7.9 | -3.8 | -6.2 | -7.5 | -1.8 | -2.1 | -3.2 | -7.8 |
| UK trade | -15.0 | -12.6 | -9.0 | -16.5 | -20.5 | -13.5 | -15.5 | -25.0 | -22.0 |
| FDI in the UK | -27.5 | – | -10.0 | -17.5 | -22.0 | -10.0 | -17.0 | -24.0 | -24.0 |

Sources: HM Treasury, London School of Economics/Centre for Economic Performance, National Institute of Economic and Social Research and OECD.

Notes: (a) Long run: around 2030 in most estimates. (b) The values are generally central points of a range of estimates (sometimes quite large) that comprise different assumptions for each alternative to the EU membership. The alternatives considered are EEA (membership of the European Economic Area), FTA (realization of a Free Trade Agreement) and WTO (return to the conditions of the General Agreement on Tariffs and Trade of the World Trade Organization), which represent decreasing degrees of integration. (c) In the NIESR results, only the WTO + scenario includes effects on productivity, adding a drop of 5 per cent in this variable to the WTO scenario. (d) All but the LSE/CEP estimates are based on the NiGEM model.

# 3. Monetary and financial conditions in the euro area

## 3.1. Euro area

### The Eurosystem has adopted additional stimulus measures

At its March meeting, the ECB Governing Council adopted further monetary stimulus, in light of the deteriorating economic and financial conditions and the increase in downside risks to inflation. The Governing Council's decision resulted in four new sets of measures. First, a further cut in key interest rates, lowering the interest rate on the main refinancing operations to 0 per cent, the rate on the deposit facility to -0.4 per cent and the rate on the marginal lending facility to 0.25 per cent. Second, an expansion in the monthly purchases under the Asset Purchase Program (APP) from €60 billion to €80 billion and its extension until March 2017. To ensure the continued smooth implementation of the programme, the Council also decided to increase the issuer and issue share limits for the purchases of debt securities issued by eligible international organisations and multilateral development banks. Third, the Governing Council decided to include debt securities issued by non-bank corporations established in the euro area in the Corporate Sector Purchase Program (CSPP). Finally, a new series of targeted longer-term refinancing operations was launched, to boost lending to the economy (TLTRO-II). Counterparties are entitled to borrow up to 30 per cent of the stock of eligible loans as at the beginning of the year. Each operation has a maturity of four years and a maximum rate equal to that on the Eurosystem's main refinancing operations. For banks whose net lending exceeds a benchmark, the rate applied can be as low as the interest rate on the deposit facility, which is, in practice, a 'subsidy' to lending in light of the current level of key interest rates.

### Monetary and financial conditions in the euro area posted relatively favourable developments

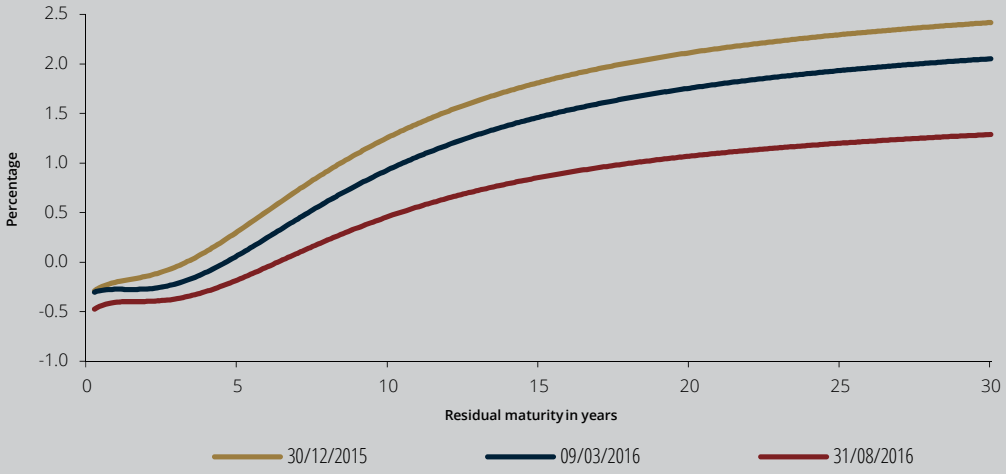
The measures adopted by the Governing Council contributed overall to an improvement in monetary and financial conditions. This was most noticeable in downward interest rate developments, by contrast with an appreciation in the euro exchange rate. The euro area yield curve edged down, particularly in longer maturities (Chart 3.1). The ten-year government bond yield in the euro area is at very low levels, below 0.5 per cent, which corresponds to a 70 b.p. fall from that seen at the end of 2015. This decrease was common to other advanced economies, reflecting *inter alia* a reduction in risk-free interest rates worldwide. Within the euro area, interest rate spreads across euro area countries widened in a number of jurisdictions. In the case of Portugal, the spread of the ten-year sovereign bond yield against Germany increased by more than 100 b.p. in the first half of the year (Chart 3.2). Nevertheless, long-term yields remain clearly below the levels that would be consistent with macroeconomic fundamentals across the various countries.[7]

In foreign exchange markets, the euro appreciated slightly in the course of the year, reflecting in particular the outcome of the UK referendum, the outlook for the global economy and mixed expectations about monetary policy developments in the various jurisdictions. As such, between 31 December and 1 September, the euro effective exchange rate appreciated by 2.6 per cent, chiefly reflecting an appreciation of 13.1 per cent against the pound sterling, 6.3 per cent against the Chinese renmimbi and 0.9 per cent against the US dollar, as well as a 16 per cent depreciation against the yen.

The monetary stimulus measures adopted by the ECB have contributed to a reduction in financing costs of the (financial and non-financial) private sector, and helped to improve the credit market. In this context, banks' funding costs are at historically low levels, due to a reduction in both the cost of market financing and deposit interest rates. Furthermore, the cost of bank lending in the euro area declined by 20 b.p. in the first half of the year for non-financial corporations, to 1.90 per cent, and by 25 b.p. in the case of households for house purchase, to 1.97 per cent. Finally, the APP's expansion to private sector securities also contributed to a reduction in financing costs of the non-financial private sector (Chart 3.3), and there is some evidence that this segment's activity has increased.

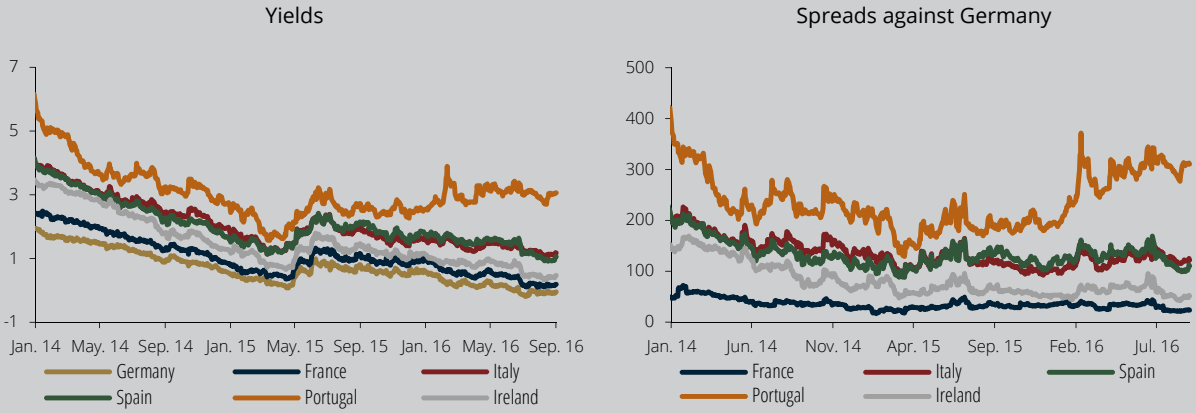
Bank lending to the euro area private sector has continued to recover gradually. Loans to non-financial corporations grew by 1.7 per cent, in annual terms, in June, which compares with 0.4 per cent growth at the end of 2015. Likewise, loans to households also accelerated, from 1.4 to 1.7 per cent over the same period (Chart 3.4).

**Chart 3.1** • Euro area yield curve | Percentage




Source: ECB.

**Chart 3.2** • 10-year sovereign debt yields for euro area countries and spreads against Germany | Percentage and basis points




Source: Thomson Reuters.

## 3.2. Portugal

### Monetary and financial conditions continued to improve in the first half of 2016

The monetary and financial conditions in the non-financial private sector remained favourable in the first half of 2016, partly due to the adoption of new non-standard monetary policy measures by the ECB. In the first half of 2016, the developments in bank loans granted to non-financial corporations and households in terms of quantity and price were in line with the improvement of the monetary and financial conditions in Portugal. In turn, the Portuguese sovereign debt yields increased substantially in the first half of 2016, remaining at higher levels than those observed in 2015. The spreads of sovereign debt *vis-à-vis* Germany, Spain, and Italy also increased (for more details, see section 3.1). These developments in the Portuguese public debt market are a result of the structural fragilities in the Portuguese economy, most notably the low nominal

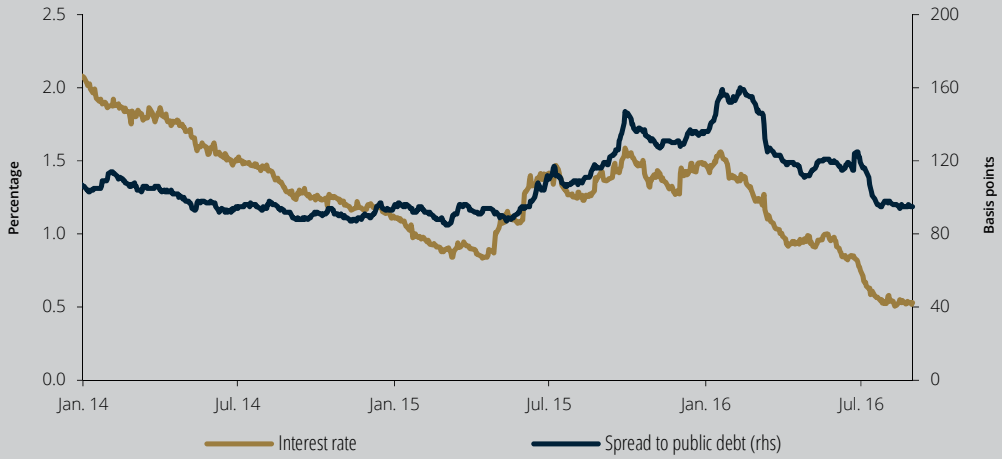



**Chart 3.3 •** Interest rates of the euro area non-financial private sector – Bank of America Merrill Lynch index | Percentage

Source: Bloomberg – Bank of America Merrill Lynch.


**Chart 3.4 •** Anual rate of change of bank loans in the euro area | Percentage

Source: ECB.

economic growth and the demanding challenges associated with the fiscal consolidation path. Nevertheless, the yields of the Portuguese sovereign debt remain in historically low levels motivated *inter alia* by the full implementation of the asset purchase programme by the ECB.

In the first half of 2016, the Portuguese banking system partially reversed the improvements observed throughout 2015, with a reduction in profitability indicators, a slight decrease in solvency ratios, and the maintenance of the liquidity position.[8] The position of the Portuguese banking system remains fragile when compared to other euro area countries, creating challenges to the transmission of the monetary policy. The high level of credit at risk poses a risk to the financing of the economy, although there is no evidence of generalized restrictions in credit supply. In this context, the banks surveyed in the Bank Lending Survey (BLS) continued to participate in the targeted long-term refinancing operations promoted by the ECB, driven by the positive impact on profitability and the fulfilment of the regulatory liquidity requirements.[9] According to the BLS, the participation in these operations contributed positively for credit supply, specifically for firms and households for consumption and other purposes.

## New loans to households increased considerably, particularly in the consumption segment

New loans granted by resident banks to households maintained the upward trend in the first half of 2016 (Chart 3.5). This trend was common to loans for house purchase and loans for consumption, with new loans for consumption standing close to the levels observed in mid-2010. In the case of loans for house purchase, the upward trend observed for loans with interest rate initial fixation period above 1 year accentuated in the first half of 2016, accounting for approximately 30 percent of new loan amounts in June 2016. This trend suggests that banks have been adapting their credit supply standards for house purchase to market conditions. The substantial decrease in loans with more than 45 years maturity observed in 2015 is in line with this new credit supply policy (Chart 3.6).

The recovery in new loans for consumption continued to be associated with car purchase (Chart 3.7), as well as with a greater dynamic in personal loans in this period. The share of credit for consumption in total private consumption maintains the upward trend, standing close to the values observed in 2009 (for more details, see section 6). The annual rate of change in the stock of loans for consumption granted by resident banks maintained the upward trend (Chart 3.8), approaching the levels reported in mid-2009.

According to the results of the BLS conducted in July 2016, and despite the relative stability in credit standards on loans to households, banks' competitive pressures, reduced risk perceptions of the general economic situation and outlook, more favourable housing market prospects, as well as a reduction in the costs of funds and balance sheet constraints, contributed to easing the credit standards on loans to households. The results also suggest that the demand for loans in this segment slightly increased, driven by increased consumer confidence and, to a lesser extent, the general level of interest rates. In particular, more positive housing market prospects, including the expected housing price developments, motivated an increase in the demand of loans for house purchase (Box 'Recent developments in Portugal house prices in light of its macroeconomic fundamentals').

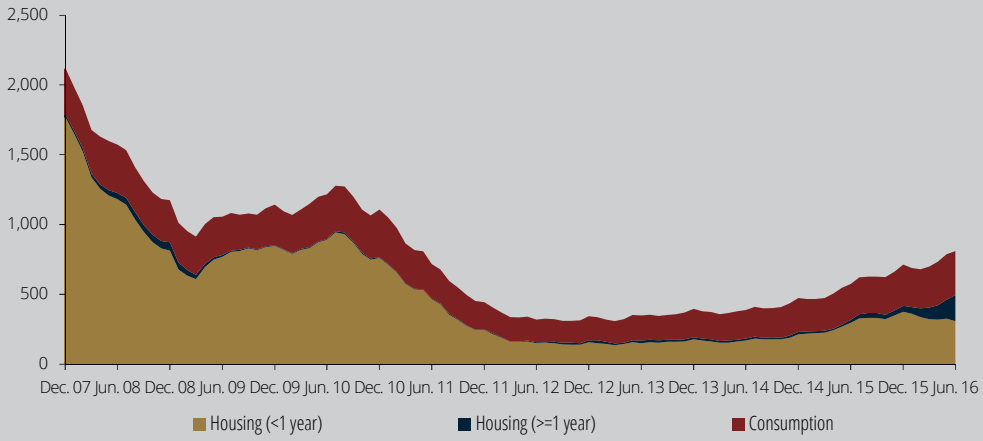



**Chart 3.5 •** New loans granted by resident banks to households | 3-month moving average, EUR millions

Source: Banco de Portugal.

Note: In the case of housing, new loan amounts are disaggregated by interest rate fixation period.

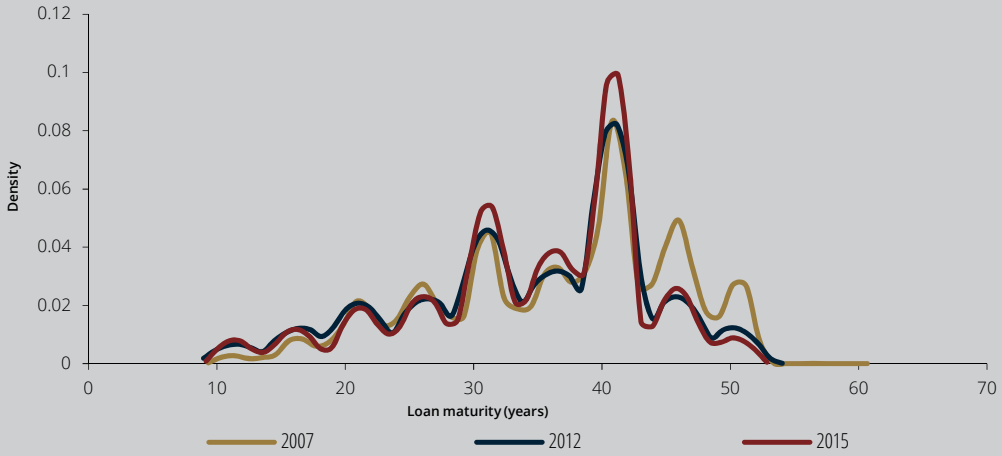



**Chart 3.6 •** Density distribution of new loans for house purchase maturities

Source: Banco de Portugal.

Note: Maturities (in years) of loans for house purchase and related, weighted by loan amounts. The analysis includes credit agreements with more than 10 years maturity.

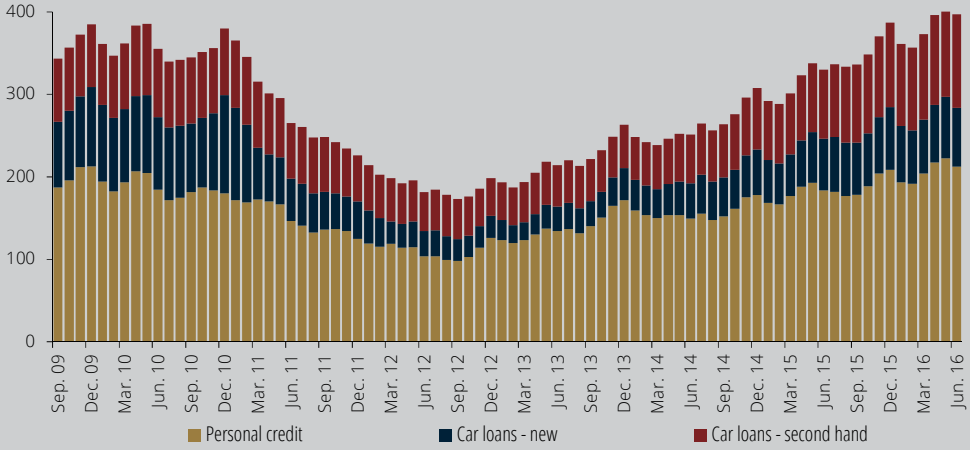



**Chart 3.7 •** New loans to households for consumption by credit category | 3-month moving average, EUR millions

Source: Banco de Portugal.

Note: New loan amounts for consumption granted by financial institutions. The analysis excludes credit cards, current accounts, and overdraft facilities.

## The deleveraging process of households continued, specifically in the housing segment

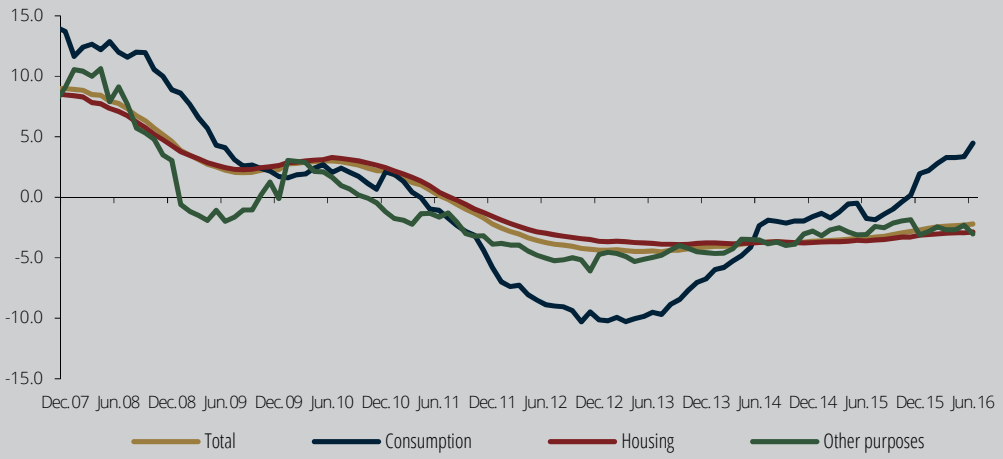
The monthly amounts of new loans for house purchase continued to increase even though remaining at levels well below the pre-financial crisis levels. The annual rate of change in the stocks of bank loans granted by resident banks to households remained negative in the first half of 2016 due to the high share of loans for house purchase in total loans and the high amount of early repayments (Chart 3.8). According to the information on retail banking markets[10], the number and amount of early repayments increased considerably in 2015 *vis-à-vis* 2014 (8.5 percent and 36.1 percent, respectively). This is mostly explained by the 16.5 percent increase in the number of early total repayments.

In 2015, (total and partial) early repayments were substantially larger for credit agreements signed between 2011 and 2014. This repayment profile may be associated with the spreads applied on these agreements because the average spread applied on credit agreements with repayments in 2015 is higher than the average spread of outstanding credit agreements by the end of 2014 (Box 'Early repayment of housing credit in 2015').

## Interest rates on new loans to households maintained the downward trend

In the context of declining reference interest rates, and along the increase observed in new loans granted to households, the cost of credit of new loans for house purchase and consumption continued to decrease in the first half of 2016 (Chart 3.9). The average spread applied on credit agreements for house purchase with floating interest rate was 2.10 p.p. in June 2016, less 12 b.p. than in June 2015, and close to the levels observed in 2011. In the case of loans for consumption, the average spread continued to decrease and reached the levels observed in 2011.

**Chart 3.8 •** Loans granted by resident banks to households | Annual rate of change, percentage




Source: Banco de Portugal.

Note: Annual rates of change are based on the relation between end-of-month outstanding amounts (adjusted for securitisation operations) and monthly transactions. Monthly transactions correspond to the difference in the end-of-month outstanding amounts adjusted for reclassifications, write-offs/write-downs, exchange rate and price revaluations, and any other variations that do not correspond to financial transactions. Whenever relevant, figures are additionally adjusted for sales of credit portfolios.

## The distribution of spreads applied on credit agreements for house purchase and related shifted to the left in 2015

The distribution of spreads applied on credit agreements for house purchase and related[11] signed in each year changed considerably over the last years (Chart 3.10). In the pre-crisis period, the distribution of spreads applied by banks on these agreements was skewed to the right. Between 2007 and 2013, the distribution of spreads applied on credit agreements for house purchase and related shifted to the right, and displayed more dispersion in 2013 than in the

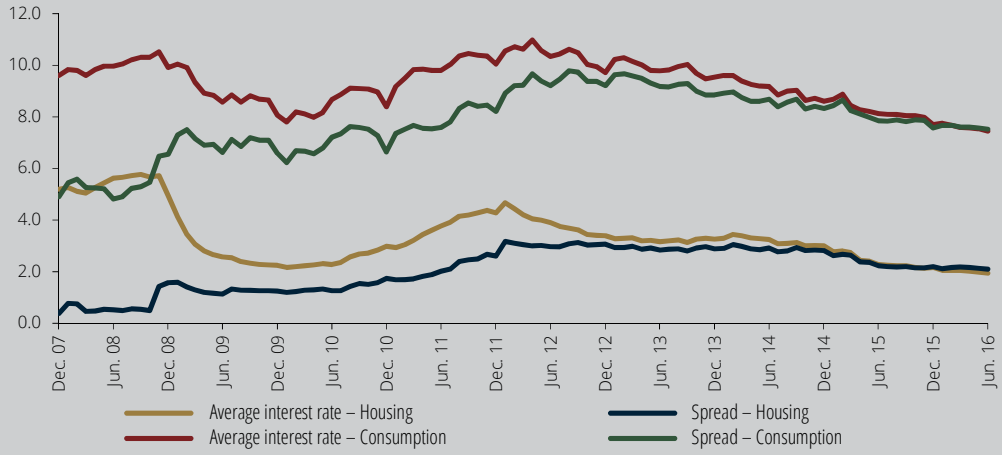



**Chart 3.9** • Interest rates on new loans granted by resident banks to households | Percentage and percentage points

Sources: Thomson Reuters and Banco de Portugal

Note: Average interest rates are based on new loans by initial fixation period and weighted by new loan amounts in each period. In the case of loans for consumption, the 6-month Euribor, the 1-year Euribor and the 5 year swap rate were considered as reference interest rates for loans with initial fixation period of less than 1 year, 1 to 5 years, and more than 5 years, respectively. In the case of housing, the reference interest rate is the 6-month Euribor.

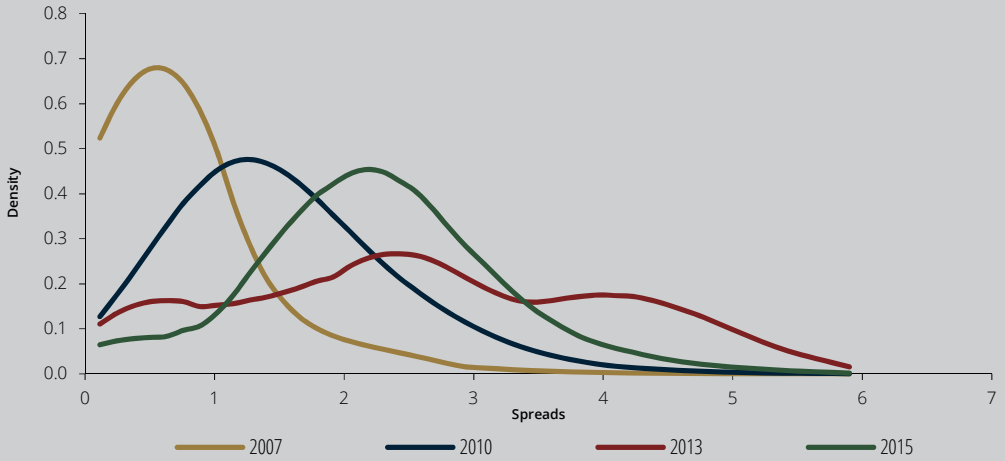



**Chart 3.10** • Density distribution of spreads applied on loans for house purchase and related

Source: Banco de Portugal.

Note: Spreads applied on loans for house purchase and related, weighted by loan amounts. The analysis includes credit agreements with more than 10 years maturity.

previous years. This greater dispersion suggests a greater differentiation in the spreads applied on this type of credit agreements. In 2015, the distribution of these spreads shifted to the left and the shape of the distribution turned similar to that observed in 2010, with decreased dispersion. Nevertheless, in 2015, the distribution of these spreads remained considerably to the right and more disperse than in the pre-crisis period.

## Household deposits remained robust in a context of low interest rates

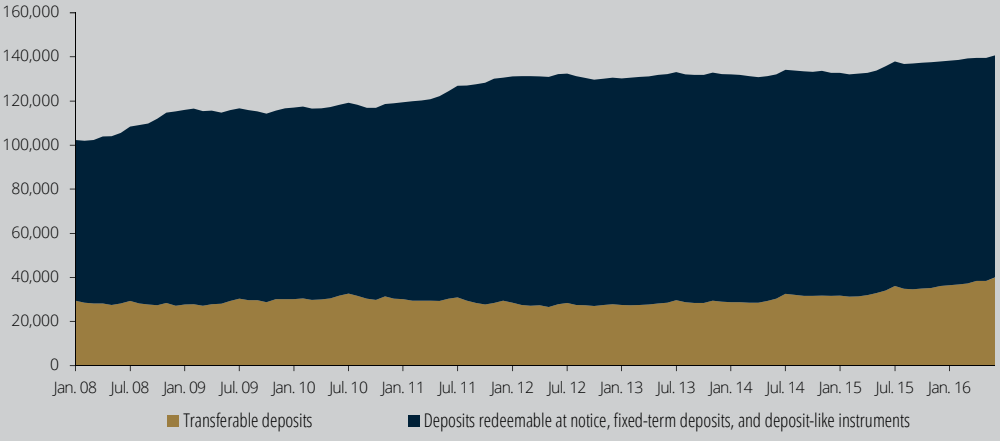
Household deposits remained robust since the onset of the financial crisis (Chart 3.11). In the current context of low short-term interest rates, the increase in the amounts invested in transferable deposits[12] together with the stability observed in the amounts invested in other types of deposits (deposits redeemable at notice, fixed-term deposits, and deposit-like instruments) contributed to the upward trend in household deposits. This resembles the adjustment of the household financial assets portfolio shifting from riskier assets toward capital-guaranteed assets, with net purchases of savings and Treasury certificates and the net collection of deposits.[13]

The low yields on fixed-term deposits and the small difference between the yields of deposits with different maturities may explain the increase in transferable deposits and the increased demand for capital-guaranteed complex instruments. The invested amount in indexed and dual deposits exceeded 10 billion euros by the end of 2015, which accounts for a 44 percent increase *vis-à-vis* 2014 and approximately 10 percent of total household fixed-term deposits.[14]

## The annual rate of change in loans to non-financial corporations remained at slightly negative levels in the first half of 2016

The annual rate of change in total credit[15] granted to non-financial corporations remained slightly negative in the first half of 2016 (Chart 3.12). Since mid-2015, resident non-financial corporations obtained funding from non-resident banks through bank loans and, to a lesser extent, debt securities, leading to a positive contribution of the non-resident sector for total credit developments. In turn, the annual rate of change in the stock of loans granted by resident banks continued to recover, even though remaining slightly negative in June 2016 (Chart 3.13). This analysis tallies with the results of the BLS

**Chart 3.11 •** Household deposits in resident banks | EUR millions




Source: Banco de Portugal.

Note: Includes deposits of emigrants.

conducted in June 2016, which point to a reduction in the spreads applied to average-risk loans, in particular for small and medium-sized enterprises, and the stabilization of credit demand by non-financial corporations.

The negative developments observed in the stock of loans granted by resident banks to non-financial corporations in the first half of 2016 are mainly driven by the very negative rate of change in the construction and real estate

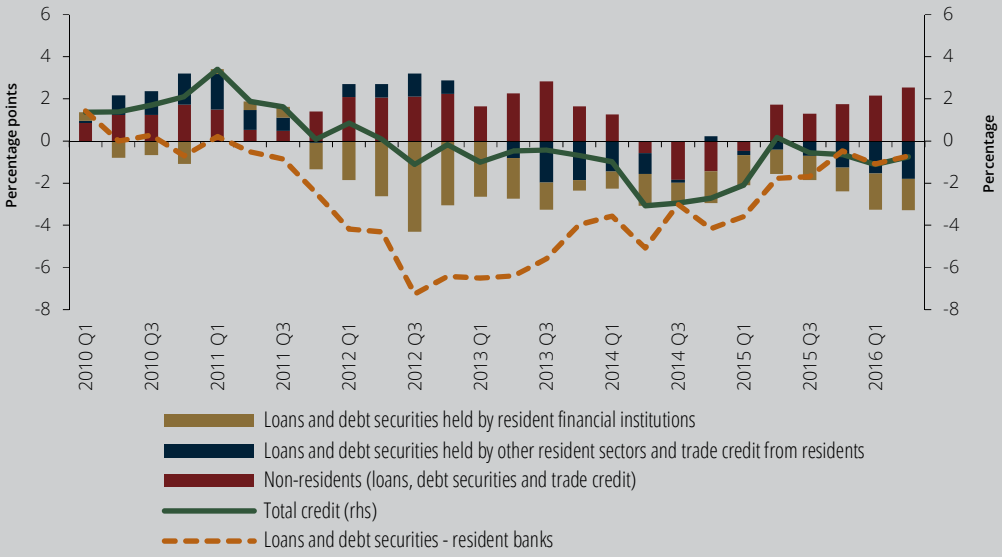



**Chart 3.12 •** Total credit granted to non-financial corporations | Annual rate of change and contributions, percentage and percentage points

Source: Banco de Portugal.

Note: Annual rates of change are based on the relation between end-of-month outstanding amounts (adjusted for securitisation operations) and monthly transactions. Monthly transactions correspond to the difference in the end-of-month outstanding amounts adjusted for reclassifications, write-offs/write-downs, exchange rate and price revaluations, and any other variations that do not correspond to financial transactions. Whenever relevant, figures are additionally adjusted for sales of credit portfolio.

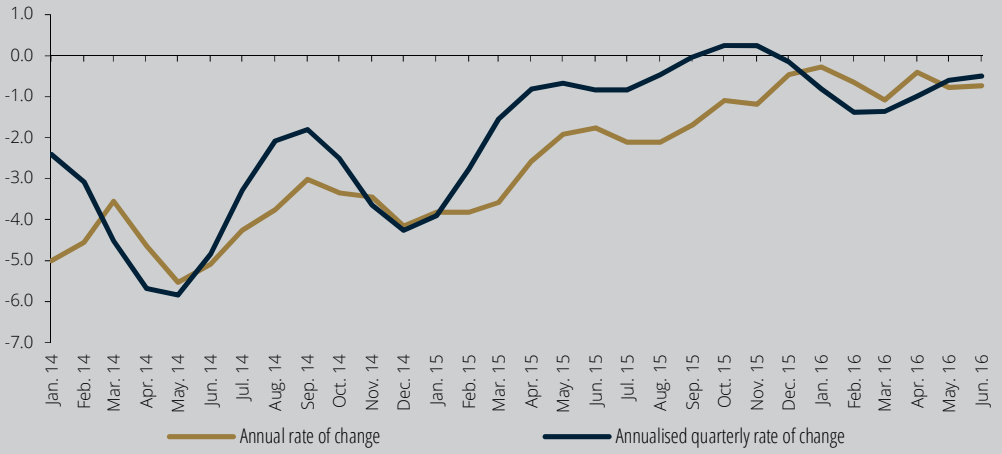



**Chart 3.13 •** Credit granted by resident banks to non-financial corporations | Annual rate of change and annualised quarterly rate of change, percentage

Source: Banco de Portugal.

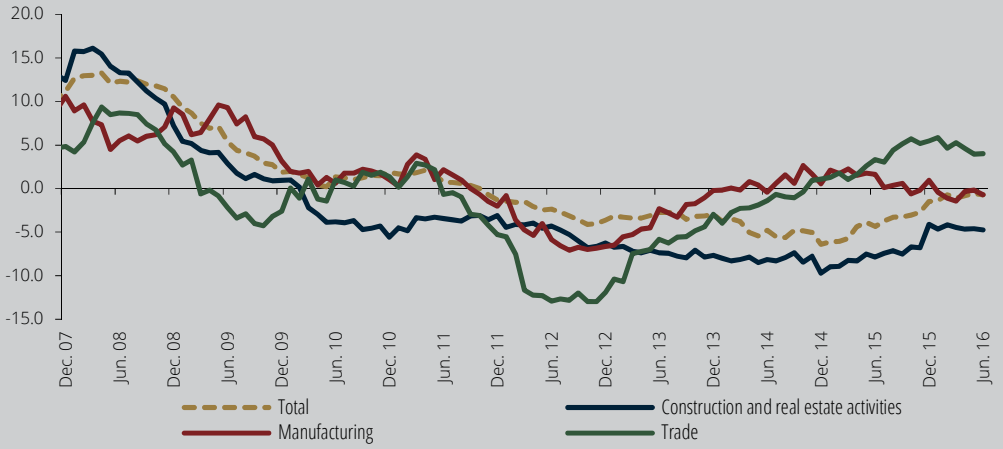
Note: Credit includes bank loans and debt securities held by resident banks. Annual rates of change and annualised quarterly rates of change are based on the relation between end-of-month outstanding amounts (adjusted for securitisation operations) and monthly transactions. Monthly transactions correspond to the difference in the end-of-month outstanding amounts adjusted for reclassifications, write-offs/write-downs, exchange rate and price revaluations, and any other variations that do not correspond to financial transactions. Whenever relevant, figures are additionally adjusted for sales of credit portfolio.

activities sector (Chart 3.14). The rate of change in loans granted by resident banks to manufacturing firms was close to zero in June 2016, following the gradual decline throughout 2015. In turn, the rate of change in loans granted by resident banks to firms in the trade sector remained in high levels.

The analysis of credit granted by resident banks by firm size suggests a progressive recovery in the annual rate of change in credit granted to small and medium-sized enterprises (Chart 3.15). Also, credit developments by firm size are less heterogeneous in the first half of 2016, which is in line with the gradual normalisation of the credit market.

## Bank loans continued to be channelled to firms with a better risk profile

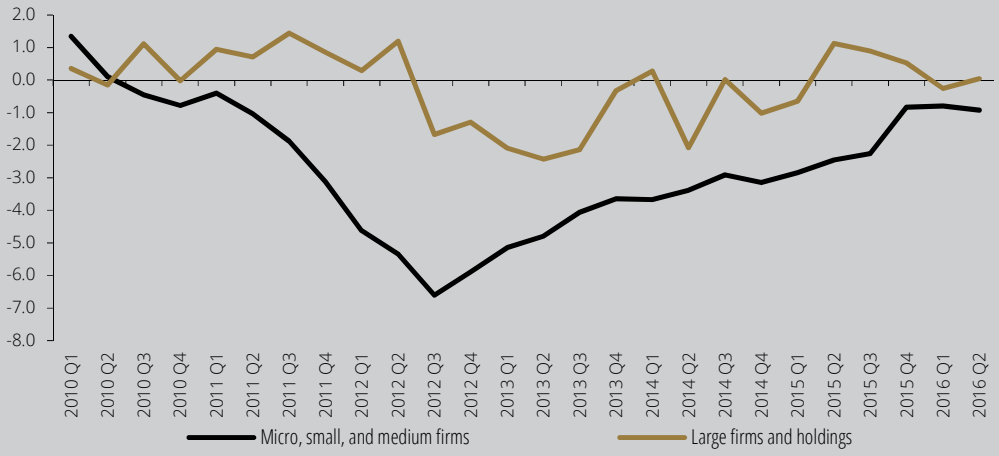
**Chart 3.14 •** Loans granted by resident banks to non-financial corporations by sector of activity | Annual rate of change, percentage




Source: Banco de Portugal.

Note: Annual rates of change are based on the relation between end-of-month outstanding amounts (adjusted for securitisation operations) and monthly transactions. Monthly transactions correspond to the difference in the end-of-month outstanding amounts adjusted for reclassifications, write-offs/write-downs, exchange rate and price revaluations, and any other variations that do not correspond to financial transactions. Whenever relevant, figures are additionally adjusted for sales of credit portfolio.

**Chart 3.15 •** Credit granted by resident banks to non-financial corporations by firm size | Annual rate of change, percentage




Source: Banco de Portugal.

Note: Credit includes bank loans and debt securities held by resident banks. Figures are adjusted for securitisation operations, reclassifications, write-offs/write-downs, and exchange rate and price revaluations. Whenever relevant, the figures are additionally adjusted for sales of credit portfolio.

Bank loans granted to non-financial corporations continued to display a differentiated path by risk profile (Chart 3.16). The fact that bank credit is being channelled to firms with a better risk profile leads to a gradual improvement of the banks' credit portfolio (Chart 3.17). In 2015, the distribution of the probability of default of banks' credit portfolio shifted to the left, with a higher density of credit granted to firms with a better risk profile, moving closer to the distribution observed in the period before the international financial crisis.

## Firms' indebtedness declined slightly amid a recovery in profitability

The statistics on non-financial corporations of the Central Balance Sheet Database for the first

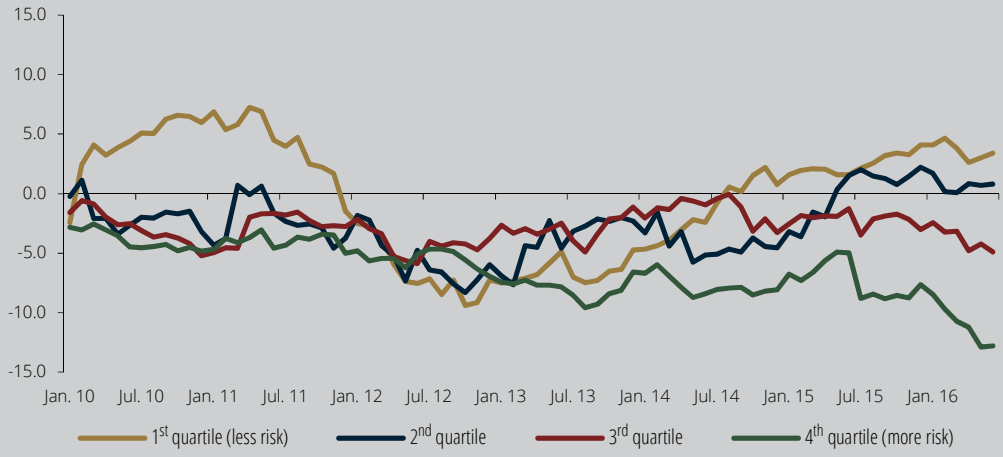



**Chart 3.16 •** Loans granted by resident financial institutions to private non-financial corporations by credit risk quartile | Year-on-year rate of change, percentage

Source: Banco de Portugal.

Note: Credit risk is measured by the *Z-score* estimated according to Antunes, Gonçalves and Prego, 'Firm default probabilities revisited', *Banco de Portugal Economic Studies*, Vol. 2, No. 2, April 2016. The year-on-year rate of change is the annual rate of change of outstanding amounts in each month.

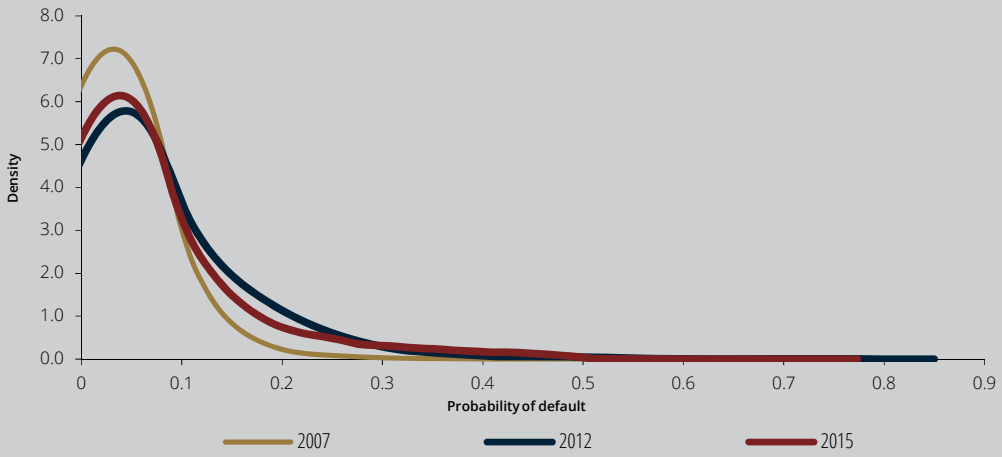



**Chart 3.17 •** Density distribution of the probability of default on bank loans portfolio

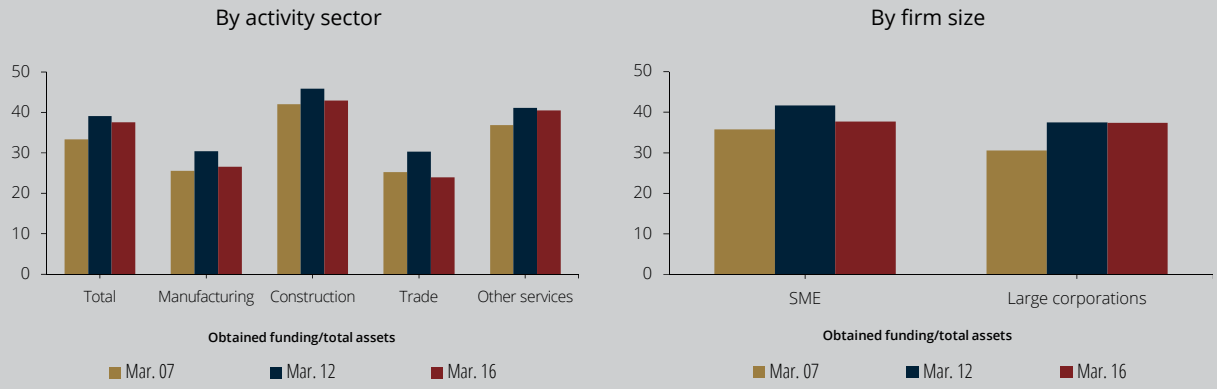
Source: Banco de Portugal.

Note: Probabilities of default weighted by loan amounts. The sample includes private corporations. Credit risk is measured by the *Z-score* estimated according to Antunes, Gonçalves and Prego, 'Firm default probabilities revisited', *Banco de Portugal Economic Studies*, Vol. 2, No. 2, April 2016. The year-on-year rate of change is the annual rate of change of outstanding amounts in each month.

quarter of 2016 suggest that indebtedness ratios of non-financial corporations continued to improve, although remaining in high levels (Chart 3.18). This improvement in the indebtedness ratios was common to the different sectors of activity (Chart 3.18). The analysis by firm size shows that this improvement is mainly due to small and medium-sized enterprises (SMEs), since the indebtedness ratio of large firms remained virtually stable. The improvement in indebtedness ratios occurred in parallel with a recovery in profitability ratios (Chart 3.19) across all sectors of activity and size classes.

The combination of these two indicators may suggest that firms are able to substitute external sources of funding by internal funding. According to the results of the Survey on the Access to Finance of Enterprises (SAFE)[16] for the period between October 2015 and March 2016, the percentage of small and medium-sized enterprises reporting that did not apply for a bank loan because of sufficient internal funds increased

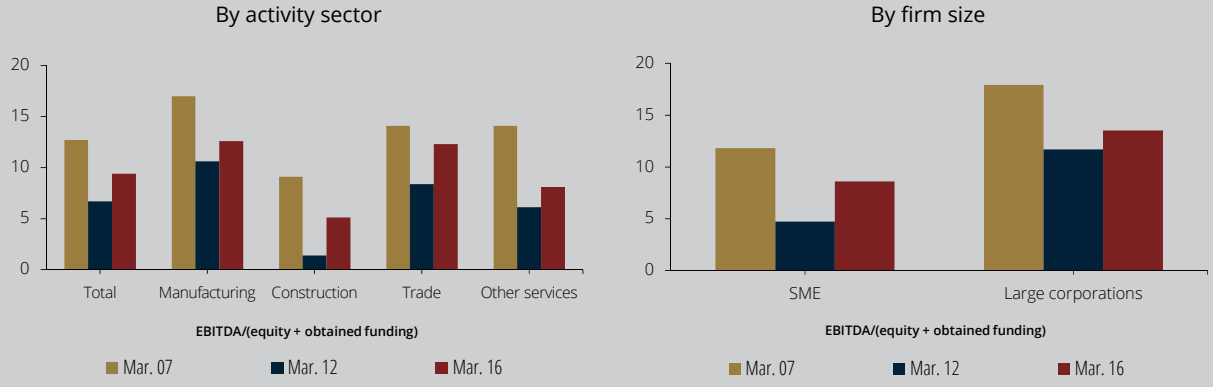
**Chart 3.18** • Firms' indebtedness | Percentage




Source: Banco de Portugal.

Note: The sample includes private corporations with activity sector other than agriculture, forestry, and fishing.

**Chart 3.19** • Firms' profitability | Percentage




Source: Banco de Portugal.

Note: The sample includes private corporations with activity sector other than agriculture, forestry, and fishing. EBITDA stands for earnings before depreciations and amortizations, interest expenses, and income tax.

substantially (approximately 13 p.p.) *vis-à-vis* the period between April and September 2013.

## Interest rates on new loans to firms continued to decrease in the first half of 2016

Interest rates on new loans granted to non-financial corporations maintained the downward trend in the first half of 2016, reaching historically minimum values (Chart 3.20). In June 2016, and despite the gradual decrease, spreads remained at levels well above those observed in the period before the international financial crisis. The downward trend in the spread applied on new loans to non-financial corporations has contributed to reduce the differential between interest rates in Portugal and the euro area (Chart 3.21). The reduction in the differential between interest rates in Portugal and the euro area is consistent with the normalisation of the monetary and financial conditions in the Portuguese economy.

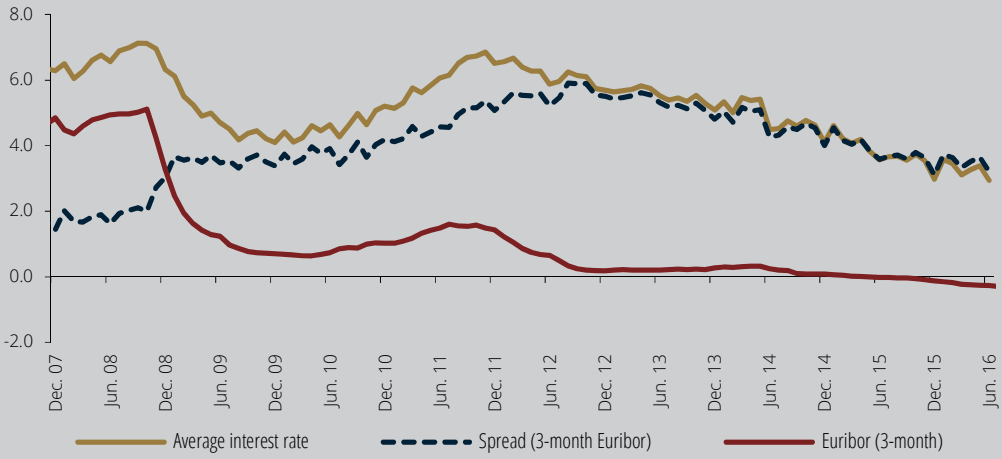



**Chart 3.20** • Interest rates on new loans granted by resident banks to non-financial corporations | Percentage and percentage points

Sources: Consesus Economics, Thomson Reuters and Banco de Portugal.

Note: Average interest rates are based on new loans by initial fixation period, weighted by new loan amounts in each period.

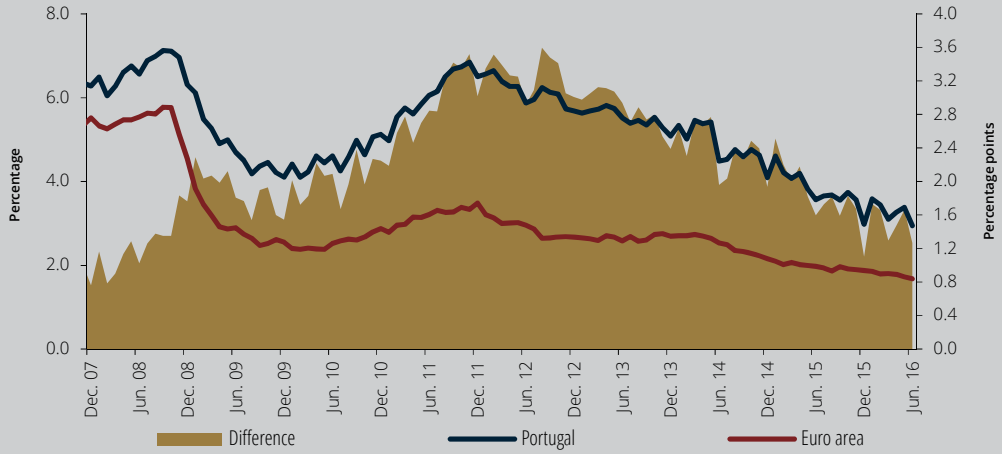


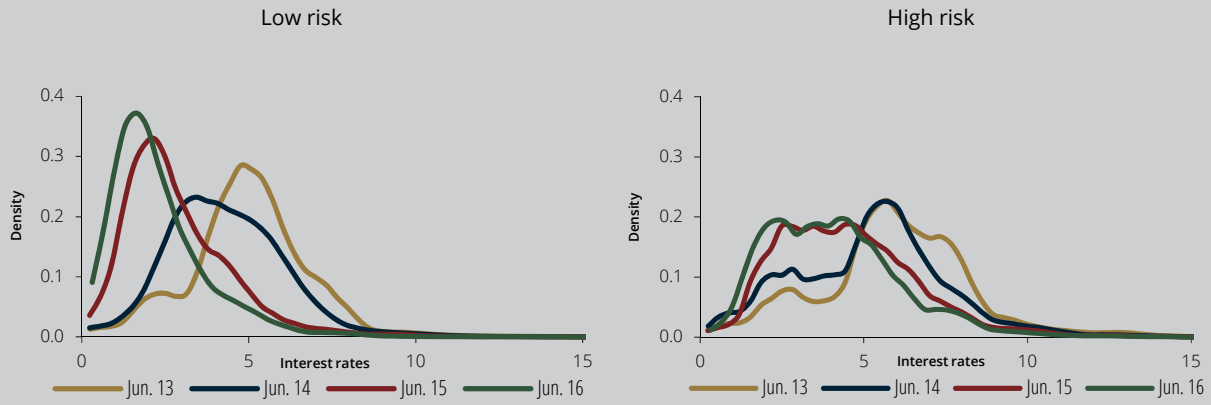

**Chart 3.21** • Interest rates on new loans granted to non-financial corporations – International comparison

Source: Banco de Portugal.

## The distribution of interest rates on new loans continued to shift to the left, with a greater impact on firms with lower credit risk

The distribution of interest rates on new loans to non-financial corporations continued to move leftwards in the first half of 2016. This leftward shift of the distribution of interest rates is common to different credit risk profiles, even though it is more pronounced for firms with a better credit risk profile (Chart 3.22). Notice that firms with a better risk profile pay a considerably lower interest rate.

**Chart 3.22** • Density distribution of interest rates on new loans granted by banks to private corporations by credit risk profile




Source: Banco de Portugal.

Note: Interest rates weighted by loan amounts. The sample includes private corporations. High (low) risk firms lie in the first (last) two deciles of the credit risk distribution. Credit risk is measured by the *Z-score* estimated according to Antunes, Gonçalves and Prego, 'Firm default probabilities revisited', *Banco de Portugal Economic Studies*, Vol. 2, No. 2, April 2016.

## Box 3.1 | Recent developments in Portugal house prices in light of its macroeconomic fundamentals

Following consecutive declines between 2010 and 2013, house prices in Portugal posted robust annual growth rates in recent years, reaching 4.3 and 3.1 per cent in 2014 and 2015, respectively (Chart 1). Given the key role of house price dynamics in macro-financial developments, this box examines the link between house price developments in Portugal and a set of macroeconomic fundamentals.

### House prices and macroeconomic fundamentals

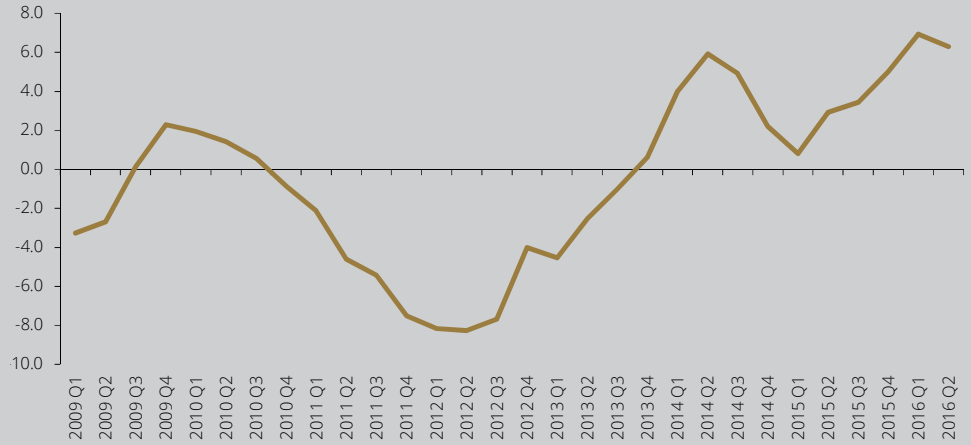
The analysis focuses on the assessment of drivers of house prices based on a single equation error correction model. Supply and demand forces central to the determination of house prices in equilibrium and its dynamics are considered, following a methodology recently used for the euro area.[17]

In order to establish a long-run link between the real house price index ($\mathrm{hpi}$)[18] and a set of macroeconomic fundamentals, a regression was estimated using the ordinary least-squares method, including real disposable income ($\mathrm{y}$), the unemployment rate ($\mathrm{ur}$) and real residential gross fixed capital formation ($\mathrm{rgfcf}$).[19] The first two variables mainly reflect demand-side developments. Housing investment reflects supply-side factors and aims at capturing the cyclical pattern according to which this variable reacts to house price dynamics.[20] The model was estimated for the period between the first quarter of 1988 and the second quarter of 2016.[21]

The long-run equation estimated on the basis of quarterly data is as follows:

$$\widehat{\mathrm{lnhpi}}_t = 2.878 + 0.093\,\mathrm{lny}_t + 0.144\,\mathrm{lnrgfcf}_t - 0.026\,\mathrm{ur}_t \qquad (1)$$

**Chart 1** • House price index | Year-on-year rates of change, per cent




Source: Statistics Portugal.

where $\ln$ (.) denotes the natural logarithm of the corresponding variable and subscript $t$ indexes time. Formal tests suggest that house prices and this set of macroeconomic fundamentals are cointegrated.

Chart 2 shows adjusted/actual figures and residuals for the estimated equation.

The chart analysis of deviations from the long-run equilibrium suggests that house prices may have been undervalued between 2007 and the beginning of 2009. In recent years, house prices have been fairly aligned with the underlying macroeconomic fundamentals driving the long-run equilibrium.

### The general error correction model

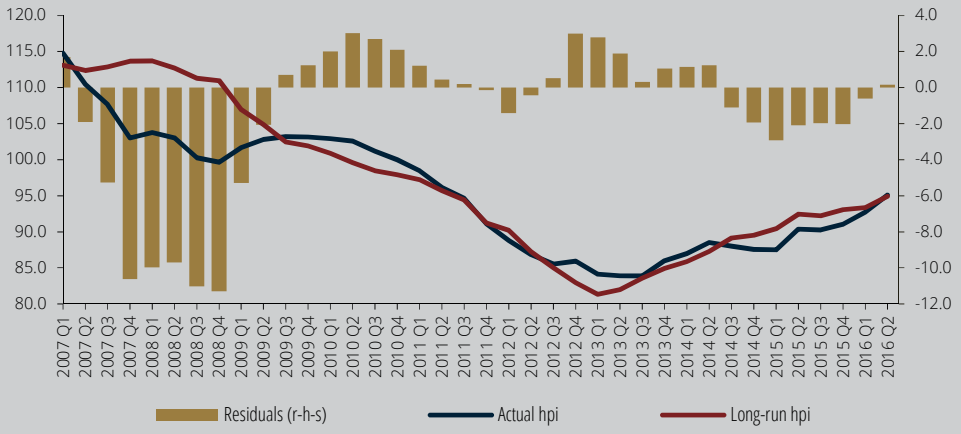
In order to understand the driving forces of house price dynamics, a general error correction model was estimated, where the lagged residuals from the long-run model – equation (1) – enter as the error correction term ($\ln hpi_{t-1} - \widehat{\ln hpi_{t-1}}$). The error correction model is described as follows:

$$\Delta\widehat{\ln hpi_t} = -0.003 + 0.358\Delta \ln hpi_{t-1} + 0.256\Delta \ln y_t + 0.202\Delta \ln y_{t-1} - 0.006\Delta ur_t - 0.079\left(\ln hpi_{t-1} - \widehat{\ln hpi_{t-1}}\right) \quad (2)$$

where $\Delta$(.) denotes the first-difference operator. All regression coefficients are statistically significant at the 10 per cent level.[22] The mean reversion coefficient (-0.079) is highly statistically significant.

Chart 3 depicts the contribution in percentage points of each macroeconomic fundamental to house price growth on year-on-year terms, considering equation (2), following the breakdown methodology described in the box entitled 'Developments in nominal exports of goods weighted by the non-imported content', *Economic Bulletin*, April 2014.

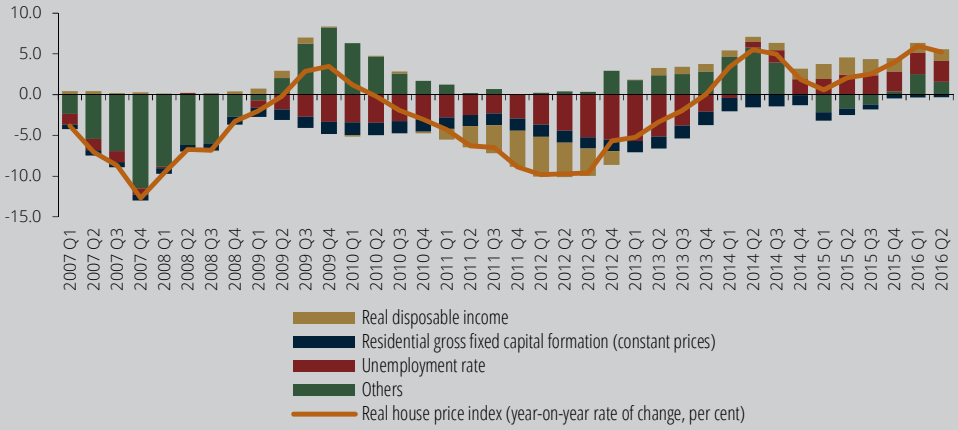
**Chart 2** • Error Correction Model for Portugal – deviations from the long-run equilibrium | Index (2010=100)




Sources: Statistics Portugal and Banco de Portugal calculations.

Overall, the unemployment rate explains most of the real house price dynamics over the horizon. Real disposable income exhibits a less sizable contribution to house price dynamics. Residential gross fixed capital formation, in turn, has made a negative contribution to house price growth in the period under review. Finally, changes in house prices not explained by the equation (under 'Others' in Chart 3) have been considerable over several periods, particularly 2007-10 and 2013-14. Focusing on the last two years, the growth in house prices has been associated with a marked fall in unemployment and an increase in real disposable income, while developments in residential gross fixed capital formation have helped to dampen house price dynamics.

**Chart 3** • Contributions to year-on-year growth in house prices
| In percentage points




Sources: Statistics Portugal and Banco de Portugal.

## Box 3.2 | Early repayment of housing credit in 2015

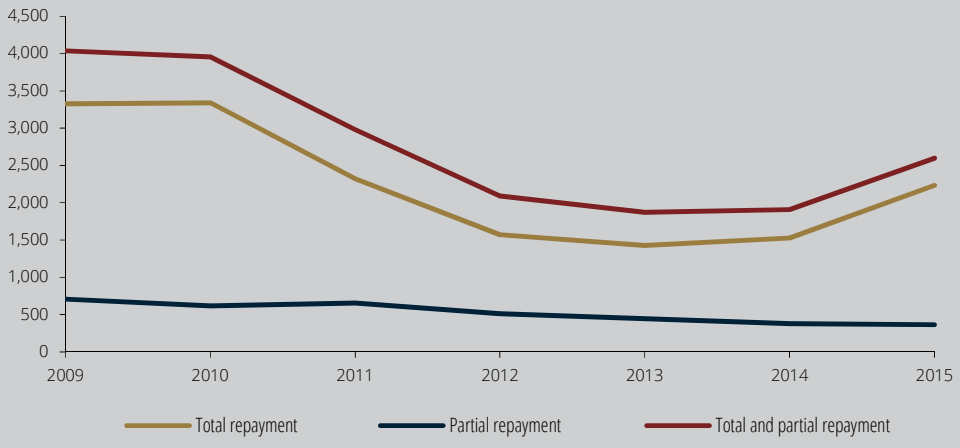
Early repayments of home loans[23] increased substantially in 2015, reaching around €2.6 billion and accounting for approximately 2.5 per cent of outstanding amounts at the end of the previous year (Chart 1). These developments were driven by the repayment in full of loans (which had already recovered slightly in 2014, thus reversing the downward trend seen between 2010 and 2013). Partial early repayments, at a much lower level, continued to follow a downward trend.

The breakdown of early repayments in 2015 by year of origination of the loan shows that the percentage of loans repaid is higher in the case of agreements signed in 2012, which accounts for around 6 per cent of loans entered into during that year and that were outstanding at the end of 2014 (Chart 2). This percentage is approximately 2 per cent, on average, for loans entered into between 2000 and 2010.

In the current environment of very low interest rates, a major share of early repayments may be related to the fact that a number of indebted households want to seize the current opportunity to repay debts with relatively high spreads. Comparing the distribution of spreads on all outstanding loans at the end of 2014 with the distributions of spreads on home loans with early repayments in 2015, it is possible to conclude that the right tail accounts for a larger share in the latter (Chart 3).

Furthermore, Chart 4 compares average spreads on loan agreements repaid in 2015 with average spreads on loan agreements outstanding at the end of 2014, broken down by year of origination of the loan. This comparison suggests that the largest share of repayments relates to loans entered into after 2011, when spreads on home loans became particularly high against a background of a tightening of credit supply in this segment.

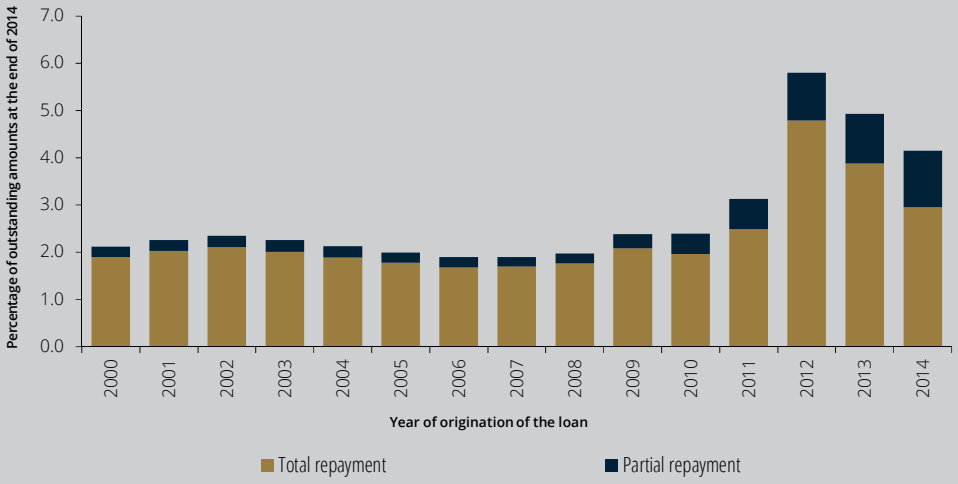
**Chart 1** • Developments in the amount of early repayments in the housing credit market | EUR millions




Source: Banco de Portugal.

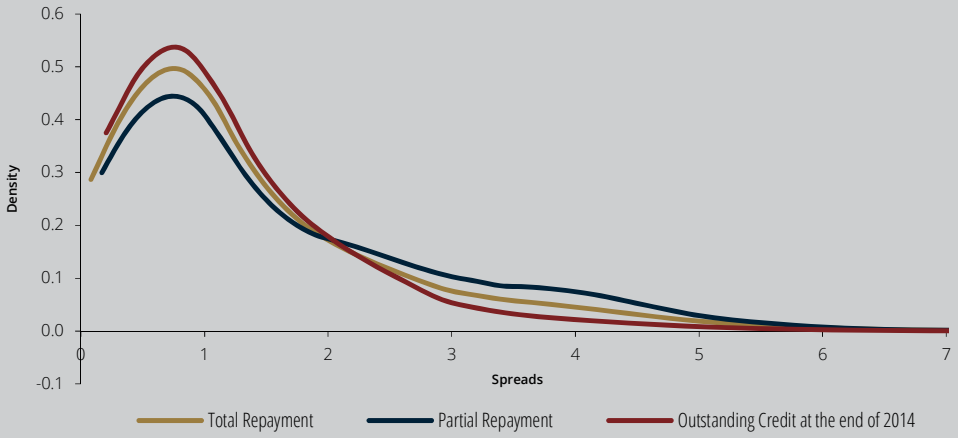
Finally, information reported by banks on the reasons behind early repayments indicates that in 2015 around 4 per cent of repaid amounts were due to the transfer of loans to other banks, the highest since 2012 (2 per cent in 2014; 1 per cent in 2013; 7 per cent in 2012; 11 per cent in 2011).[24] The consolidation of bank loans is less significant (negligible in 2011 and 2015; 2 per cent in 2012; 3 per cent in 2013; 1 per cent in 2014). When analysing these results, it should be borne in mind that, in most cases, the reason for the early repayment is unspecified.

**Chart 2** • Early repayments in 2015 as a percentage of outstanding amounts at the end of 2014, by loan origination date




Source: Banco de Portugal.

**Chart 3** • Distribution of spreads on home loans outstanding at the end of 2014 and on loans with early repayments in 2015

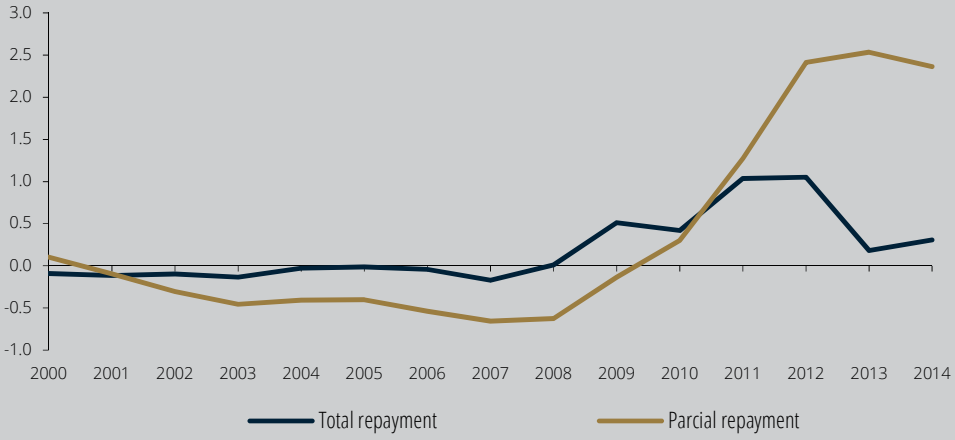



Source: Banco de Portugal.

Note: Spreads on outstanding loans at the end of 2014 were weighted by remaining amounts and spreads on loans with early repayments in 2015 were weighted by the amounts repaid.

To sum up, in 2015 early repayments were particularly significant as regards loan agreements entered into after 2011 and, on average, involved loans with higher spreads than the average spread in outstanding loans with the same year of origination. Among these agreements, the main purpose was to transfer the loan to another bank, which suggests that households transferred loans granted after 2011 with relatively high spreads to other banks, where they may have been offered more favourable financing conditions. This may be due to a slight increase in competitiveness among banks in the residential mortgage market.

**Chart 4** • Difference between the average spreads of loans with early repayments in 2015 and average spreads of home loans outstanding at the end of 2014, by loan origination date | Percentage points




Source: Banco de Portugal.

# 4. Fiscal policy and situation

## In the first half of 2016 the fiscal deficit declined considerably *vis-à-vis* 2015

According to the Quarterly National Accounts published by Statistics Portugal, the general government deficit stood at 2.8 per cent of GDP in the first half of 2016, compared with 4.6 per cent in the same period of the previous year (Chart 4.1). This improvement is slightly less marked when excluding the base effect associated with extraordinary transactions registered in the first half of 2015, which aggravated the corresponding deficit by 0.3 per cent of GDP.[25]

In the Excessive Deficit Procedure (EDP) notification of September 2016, the Ministry of Finance maintained the estimate for the general government deficit at 2.2 per cent of GDP for the year as a whole.[26] In early August, the Council of the European Union adopted the European Commission recommendation on the reduction of the government deficit in Portugal to 2.5 per cent of GDP in 2016, (excluding potential support to the financial system), under the excessive deficit procedure (Box 'The corrective arm of the Stability and Growth Pact and its application to Portugal').

Considering the seasonal profile of the half-year deficits in the recent period, as illustrated in chart 4.1, the annual objective set out by the Council for the deficit in 2016 seems to be feasible. In the second half, however, budget execution is not without risks, and is affected by different factors, such as the late entry into force of the budget, and the impact of fiscal policy measures.

## In the first half of the year, total revenue growth fell short of the projection for the year as a whole

In the first half of 2016 total revenue grew, year-on-year, by 1.7 per cent, which was significantly lower than the yearly projection (3.3 per cent), even when adjusted for the one-off impact of the reimbursement of prepaid margins by the European Financial Stability Facility (Table 4.1).

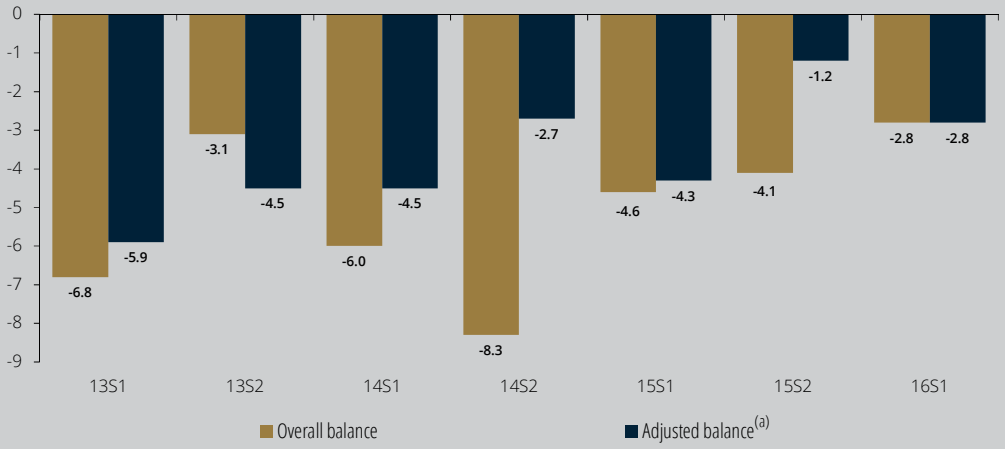



**Chart 4.1** • General government budget balance | As a percentage of GDP

Sources: *INE* and Banco de Portugal.

Note: (a) The adjusted balance excludes the following one-off effects: in 2013, capital injection in *Banif* and the impact of the special sheme for the payment of tax arrears; in 2014, recording of the stock of debt of transportation corporations *STCP* and *Carris*, write-off of non-performing loans on the *BPN Crédito* balance sheet, equity increases in *Efisa* and *Novo Banco*; in 2015, equity increase in *Efisa* and in the corporations *Carris* and *STCP*, reclassification of loans to *Caixa Imobiliária* by shareholder Wolfpart and the resolution measure applied to *Banif*.

**Table 4.1** • General government accounts: outturn in the first half of the year | Million EUR

| | First half 2015 | First half 2016 | y-o-y (%) | Memo: official forecast[a] | |
|---|---|---|---|---|---|
| | | | | 2016 | y-o-y (%) |
| Total revenue | 36,770 | 37,393 | 1.7 | 81,606 | 3.3 |
| Current revenue | 36,075 | 36,887 | 2.3 | 79,978 | 3.2 |
| Tax and contributory revenue | 30,629 | 31,673 | 3.4 | 68,222 | 2.9 |
| Taxes on income and wealth | 8,145 | 7,896 | -3.1 | 19,202 | -1.2 |
| Taxes on production and imports | 12,339 | 13,281 | 7.6 | 27,758 | 6.3 |
| Social contributions | 10,145 | 10,497 | 3.5 | 21,262 | 2.3 |
| Other current revenue | 5,445 | 5,213 | -4.3 | 11,756 | 5.3 |
| Capital revenue | 696 | 506 | -27.2 | 1,628 | 6.6 |
| Total expenditure | 40,822 | 39,902 | -2.3 | 85,790 | -1.2 |
| Current expenditure | 38,484 | 38,423 | -0.2 | 81,278 | 2.8 |
| Social payments | 16,294 | 16,467 | 1.1 | 34,645 | 0.0 |
| Compensation of employees | 10,464 | 10,680 | 2.1 | 20,309 | 0.2 |
| Intermediate consumption | 4,783 | 4,941 | 3.3 | 11,525 | 11.6 |
| Subsidies | 446 | 396 | -11.2 | 1,132 | 1.9 |
| Interest | 4,047 | 3,809 | -5.9 | 8,489 | 3.6 |
| Other current expenditure | 2,450 | 2,131 | -13.0 | 5,178 | 13.7 |
| Capital expenditure | 2,338 | 1,479 | -36.7 | 4,512 | -41.6 |
| Gross fixed capital formation | 1,662 | 1,219 | -26.6 | 3,677 | -10.0 |
| Other capital expenditure | 676 | 260 | -61.6 | 835 | -77.1 |
| Overall balance | -4,052 | -2,510 | | -4,183 | |
| *Memo:* | | | | | |
| *Primary current expenditure* | *34,437* | *34,614* | *0.5* | *72,788* | *2.7* |
| *Budget balance (% of GDP)* | *-4.6* | *-2.8* | | *-2.2* | |

Source: *INE*, Finance Ministry and Banco de Portugal calculations.
Note: (a) Official estimate underlying the State Budget for 2016.

This is due to the significant fall in non-tax and non-contributory revenue, in contrast to the positive developments expected for the year as a whole. This outcome is driven by the fall in interest and dividends received by the general government, as well as by the execution of community funds. Tax and contributory revenue grew by 3.4 per cent in the same period, driven by positive developments in revenue from taxes on production and imports (7.6 per cent) and social contributions (3.5 per cent). Developments in tax and contributory revenue as a whole in the first half of 2016 seem broadly consistent with the growth forecast for the year (2.9 per cent), in spite of a deceleration in economic activity. Developments in revenue from taxes on production and imports have largely benefitted from the growth of net receipts from VAT, taxes on oil products and on tobacco. The projection for VAT revenue in the second half of the year is surrounded by particular uncertainty due, *inter alia*, to the entry into force of the VAT reduction applicable to restaurants, in July this year. In turn, revenue from taxes on income and wealth declined, year-on-year, by 3.1 per cent over this period, as a result of drops in the collection of taxes on both household and corporate income, falling short of the estimate for the year as a whole (-1.2 per cent). Note that the growth of revenue from taxes on households' income in the second half of the year is conditioned by the significant increase in refunds, as a result of the changes in personal income tax introduced in 2015.

## The decline in total expenditure in the first half of the year exceeded the annual estimate

In the first half of the year, the decline in total expenditure was more pronounced than that expected for the year as a whole (-2.3 per cent in the first half, compared with an estimate of -1.2 per cent for the year). Primary current expenditure grew by 0.5 per cent in the first half, 2.1 p.p. below the increase estimated for the year. This result was largely due to the fact that growth fell short of the initial estimate in both intermediate consumption (3.3 per cent in the first half of the year, compared with an expected increase of 11.6 per cent for the year) and other current expenditure (-13 per cent in the first half of the year, compared with an estimate of 13.7 per cent for the year). In turn, the near stabilisation of spending on compensation of employees and social benefits forecasted for the year as a whole did not materialise in the first half of the year, with these aggregates showing increases of 2.1 per cent and 1.1 per cent respectively. It should be noted that there are upward pressures on compensation of employees in the second half of the year, as a result of the phased elimination of the wage cuts in the public sector and the possible increase in hiring, due to the entry into force of the 35-hour working week in the general government.

Capital expenditure, even adjusted for the above-mentioned one-off impacts, fell significantly, in contrast to the annual estimate, largely due to developments in public investment. Indeed, it is important to underline that developments in this item in the second half of the year are surrounded by particular uncertainty, as a result of the late entry into force of the budget for this year and the expenditure profile associated to investment projects co-financed by community funds.

## The budget execution in the year as a whole is surrounded by high uncertainty

The upward revision of the Council target for the deficit in 2016 facilitates the accommodation of some previously identified fiscal pressures. Nevertheless, there is still high uncertainty regarding the behaviour of tax revenue net of refunds, in particular due to the impact of the policy measures implemented and macroeconomic developments, as well as of public expenditure. Compliance with the target for the deficit (actual and structural) recommended by the Council seems to be feasible, but it should nonetheless be noted that the budget execution in the second half of the year is rather demanding and subject to non-negligible risk factors. Finally, it is worth noting that the materialisation of a 2.5 per cent of GDP deficit in 2016 is consistent with its structural stabilisation. However, convergence towards the medium-term objective, currently corresponding to a structural balance of 0.25 per cent of GDP (Box 'Update of minimum medium-tem objectives for the period 2017-2019: the Portuguese case'), requires the adoption of a fiscal consolidation strategy starting in 2017.

## At the end of June, the debt ratio was clearly above the level recorded at the end of 2015

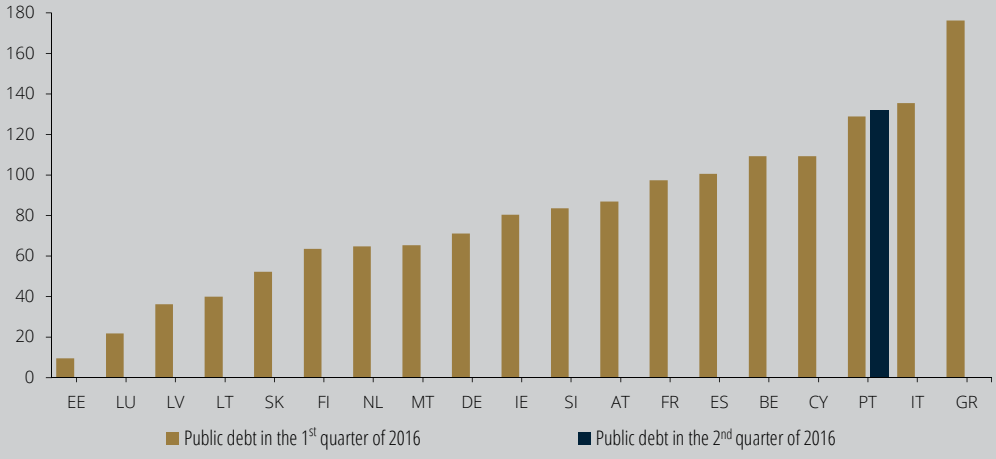
At the end of the first half of 2016, the public debt-to-GDP ratio stood at 131.7 per cent (121.8 per cent of GDP, excluding central government deposits), after reaching 129 per cent at the end of 2015 (121.6 per cent of GDP, excluding central government deposits). This indebtedness level is one of the highest in the euro area (Chart 4.2). The rise of the public debt ratio was due, to a large extent, to the accumulation

of central government deposits (2.6 per cent of GDP), as a result of the financing strategy of the Portuguese Treasury and Government Debt Agency, which aims to preemptively cover financing needs and, to a lesser extent, due to the interest expenditure effect. Conversely, the most important contribution was the impact of GDP nominal growth (through the denominator effect), reinforced by the effect of the primary surplus.

Throughout the first half of 2016, the Portuguese State ensured a regular presence in the sovereign debt markets, carrying out issuances with different maturities. As regards short-term issues, the average interest rate of one-year Treasury Bill auctions was similar to that observed in 2015, remaining below 0.1 per cent in the first half of the year. As regards developments in long-term rates, in the 10-year maturity, the average rate in auctions was 3.1 per cent, 0.8 p.p. higher than in 2015. The implicit interest rate of public debt continued to decline, reflecting better refinancing conditions *vis-à-vis* the rates underlying maturing debt. Early repayments to the IMF in 2015 and in the first half of 2016 also contributed to this outcome.

Regarding the annual public debt target, the estimate for 2016 published in the context of the EDP notification points to a decline in its ratio to GDP to 124.8 per cent at the end of the year, in line with the forecast presented in the Stability Programme update. In general, the projection for the government debt level is particularly demanding, as it depends, *inter alia*, on assumptions regarding transactions in financial assets, the impact of exchange rate fluctuations and other valuation effects, and the difference between the accrual and cash figures. As regards financial asset transactions, it's worth highlighting the decisions relating to the level of general government deposits, this year also conditional on the materialization of sales of financial assets, as well as early repayments to the IMF. Finally, note that, in its latest assessment report under article IV, the IMF puts into perspective the benefits of early loan repayments, stressing the importance of maintaining adequate cash buffers to face negative developments in market conditions.

**Chart 4.2 •** Public debt in the euro area
| As a percentage of GDP




Source: Eurostat.

### Box 4.1 | The corrective arm of the Stability and Growth Pact and its application to Portugal

The main purpose of the European Union's Stability and Growth Pact is to safeguard sound government finances, setting out the mechanisms to strengthen the surveillance of budgetary positions and the coordination of economic policies of the different Member States (preventive arm) and to ensure that Member States take the appropriate policies within the scope of the implementation of the excessive deficit procedures – EDP (corrective arm). This box provides a brief overview of the corrective arm rules and their application to Portugal, with particular focus on the recent past.[27]

The EDP, ruled by Article 126 of the Treaty on the Functioning of the European Union, is triggered when a Member State's government deficit, on a National Accounts basis, exceeds the 3 per cent of GDP reference value or its government debt ratio, in line with the Maastricht definition, exceeds 60 per cent of GDP and is not approaching the reference value at a satisfactory pace.

The first EDP step is the EU Council's decision on the existence of an excessive deficit in a given Member State, based on a proposal from the European Commission.[28] Following this decision a recommendation is issued to the Member State in question, to correct the deviation over a defined period of time (Figure 1). In addition, annual objectives are set for the headline fiscal balance and the corresponding structural balance,[29]considering the Commission's economic forecasts.

In response to the Council's decision, the Member State needs to show that it has taken effective action within the deadline defined in the Recommendation, usually six months. Based on the Member State's report, the Commission shall undertake its assessment. If the Member State has complied with the recommendation and reached the fiscal targets, the procedure may be put in abeyance, but it will be subject to continuous monitoring. The procedure may be reactivated if a risk of non-compliance is identified. In case of compliance with the recommendations, but with no results in terms of budgetary objectives, due, in particular, to adverse economic conditions, the deadline for correction may be extended.[30] If the Member State has not taken effective action, the Council may decide that the procedure must be stepped up. Within 20 days after the Council's decision, the Commission will prepare again a recommendation including annual budgetary targets, a deadline for the correction of the deviation and the magnitude of the sanctions to be imposed. Subsequently, the assessment of whether the country has taken effective action is repeated, and the Member State will then submit reports every three months. While moving through the EDP stages, monitoring becomes tighter and sanctions heavier, given that the Member State has repeatedly not complied with the recommendations.

In the different EDP stages, when the decision to impose a sanction is taken (non-remunerated deposit or fine), the Member State may, within 10 days of the adoption of the decision, submit a reasoned request to cancel it or reduce its amount (Regulation 1173/2011). The Commission may also recommend reducing the amount or cancelling a sanction on grounds of exceptional economic circumstances.

The EDP is closed when the excessive deficit is corrected in a durable manner, i.e., when the deficit observed in the previous year is below the threshold of 3 per cent of GDP and the deficits in the projection horizon are also below the reference value, considering a scenario of invariant policies usually underlying the Commission's economic forecasts.[31] Closing the EDP requires a Council's decision, following a recommendation from the Commission.

In 2002 Portugal was the first Member State subject to an EDP since the Stability and Growth Pact came into force. The Recommendation then issued established that 2003 would be the deadline for the correction of the excessive deficit. In 2002 and 2003 the reported deficits stood below the reference value of 3 per cent of GDP, allowing the EDP to be closed in May 2004.

Portugal was again subject to an EDP in 2005, with the recommendation to correct the excessive deficit by 2008 in a credible and sustainable manner. In 2006 the Commission considered that the recommendations were being complied with, and the procedure was closed in 2008, one year before the deadline established. Currently, Portugal is subject to another EDP that was started in December 2009. The deadline for correcting the excessive deficit was firstly set at 2013. In 2012 and 2013 the Commission and the Council considered that Portugal had taken effective action, even though budgetary targets had not been reached. Thus, according to the Pact's rules, the deadline for the correction of the excessive deficit was extended in each of the assessments (firstly to 2014 and subsequently to 2015). This decision was justified by the adverse economic conditions with unfavourable consequences for public accounts.

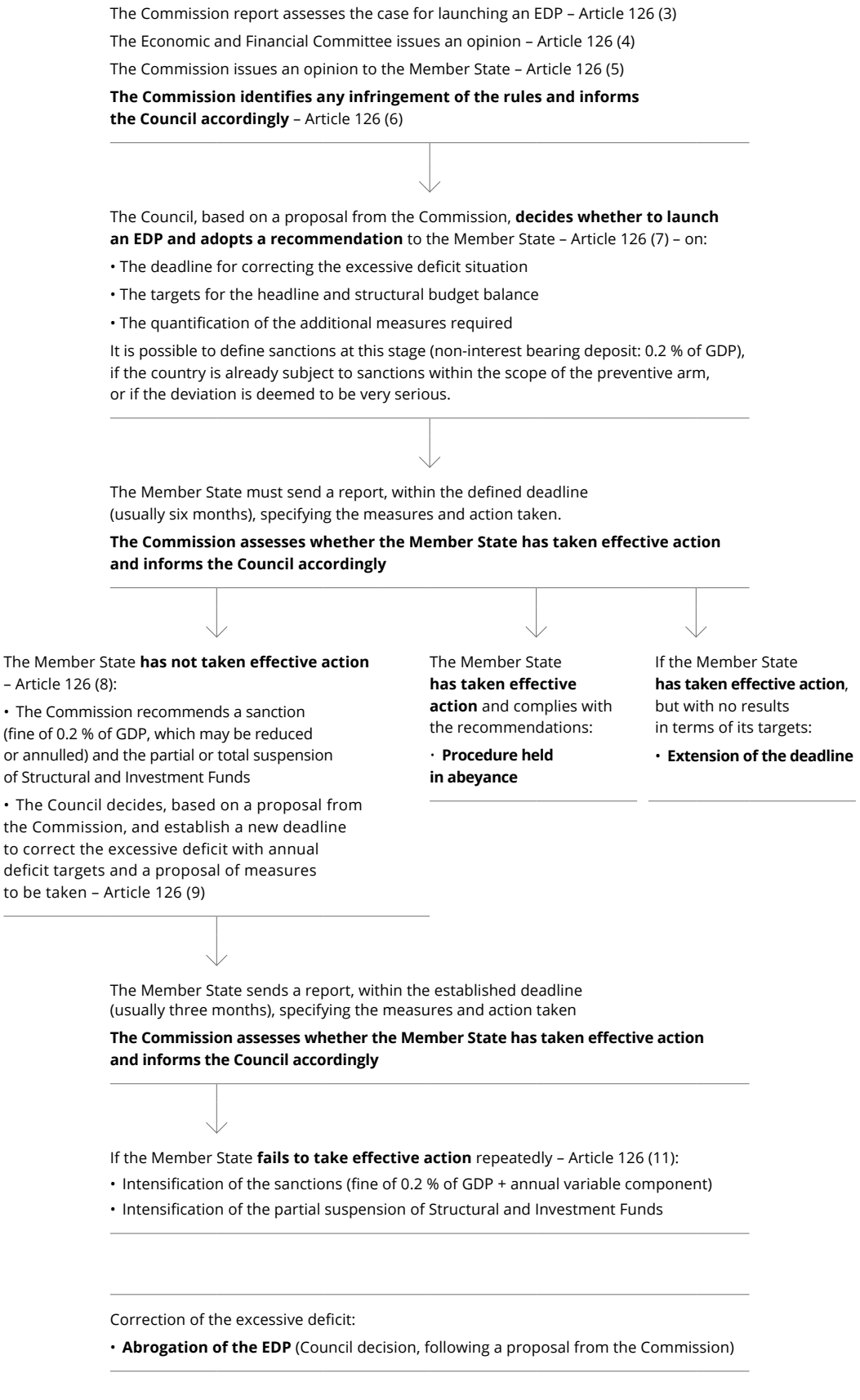
In order to correct the excessive deficit by 2015 in a sustainable manner, the Council recommended that Portugal should reach a budget balance of 5.5 per cent of GDP in 2013, 4 per cent in 2014 and 2.5 per cent in 2015. These developments would be consistent with a consolidation, measured through the change in the structural balance, of 0.6 per cent in 2013, 1.4 per cent in 2014, and 0.5 per cent in 2015.

In 2015 Portugal recorded a deficit of 4.4 per cent of GDP, 1.4 p.p. above the reference value. On 12 July 2016, the Council adopted the Commission Recommendation which concluded that Portugal had not taken effective action to correct the excessive deficit in 2015. The structural adjustment during the period under review (2013-2015) was 1.2 per cent of GDP, significantly below the recommendation of 2.5 per cent of GDP.

Within the scope of the EDP rules and following a reasoned request by Portugal to cancel possible sanctions, on 5 August the Council decided, following a Commission's proposal, not to apply a fine to Portugal, in spite of the absence of effective action.

In its recent decision, the Council also extended the deadline for the correction of the excessive deficit to 2016. The nature of this extension, however, is different from previous ones, given that this time Portugal moved to the next stage of the EDP, and is now under Article 126 (9). In addition, a recommendation was addressed to Portugal with a view to bringing the deficit down to 2.5 per cent of GDP in 2016, which is consistent with a stabilisation of the structural balance and requires, according to the Commission's calculations, the adoption of new measures with a magnitude of 0.25 per cent of GDP. As regards the suspension of Community funds, the decision was postponed until after a structured dialogue with the European Parliament. Finally, by 15 October, Portugal shall submit a report identifying actions taken in order to comply with the recommendations issued.

**Figure 1** • Stages of the excessive deficit procedure for euro area member states



## Box 4.2 | Update of minimum medium-term objectives for the period 2017-2019: the Portuguese case

In 2005, within the scope of the revision of the Stability and Growth Pact, a medium-term objective (MTO) for each Member State, defined in terms of the structural balance, was introduced.[32] This budgetary target is intended to ensure that Member States maintain appropriate fiscal policies over the economic cycle, keeping of public finances on a sustainable path.

Minimum MTOs are calculated by the European Commission and represent the lower bound for national MTOs to be included in Stability/Convergence Programmes. These objectives are regularly updated every three years, in order to incorporate the *Ageing Report 's* long-term projections, and exceptionally if the Member State has implemented a structural reform with a significant impact on its public finances. The definition of minimum MTOs seeks to ensure: i) a safety margin against breaching the 3 per cent of GDP deficit threshold; ii) the sustainability of public finances or a rapid convergence of the debt ratio towards sustainable values; and iii) taking into account the two previous points, iii) the existence of fiscal room for manoeuvre, considering in particular public investment requirements.

Based on this definition, minimum MTOs are set as the most demanding of three indicators:

- The minimum value ensuring a deficit below the 3 per cent of GDP threshold over the whole economic cycle. This is calculated by adjusting the 3 per cent of GDP deficit for the 'normal' effect of cyclical fluctuations, based on historical data from a 25-year period.
- The minimum value ensuring the sustainability of public finances, taking into account the sum of three factors: a) the budget balance that stabilises the debt ratio at the 60 per cent of GDP reference level;[33] b) the necessary adjustment to cover a fraction of the future increase in ageing costs;[34] c) an additional effort for countries with debt ratios exceeding 60 per cent of GDP, ensuring a more rapid convergence to the reference value.[35]
- The countries that are euro area Member States or are part of the exchange rate mechanism II have the additional restriction of setting a MTO of at least -1 per cent of GDP.

Also, the countries that have signed the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG) containing the Fiscal Compact, have committed to adopting MTOs of at least -0.5 per cent of GDP, except if their the debt ratios are significantly below the 60 per cent threshold.

In 2016 the European Commission updated the minimum MTOs for European Union Member States (except Greece). As with previous updates, the values for the minimum MTOs now calculated differ considerably among countries, from a minimum (less demanding) of -2.25 per cent of GDP and a maximum (more demanding) of 0.25 per cent of GDP. Eighteen Member States currently have a minimum MTO equal to or below -1 per cent of GDP. Portugal is among the small number of countries with a positive minimum MTO of 0.25 per cent of GDP, showing the most important revision (1.25 p.p.) from the previous update.

In the case of Portugal, similarly to the result obtained in 2012, the decisive indicator in the calculation of the minimum MTO was the one that aims at guaranteeing the sustainability of public finances or a rapid convergence towards it (Table 1). As previously mentioned, this indicator covers three components, the most relevant of which is the additional effort required by the fact

that the public debt level stands above the 60 per cent of GDP threshold. The sizeable revision *vis-à-vis* 2012 is also due to this component, reflecting the significant increase in the public debt ratio since the latest update of the minimum MTOs. To a lesser extent, the budgetary costs due to the ageing population and the slowdown in economic activity in nominal terms have also contributed to the upward revision of the minimum MTO.

In the wake of these results, the national MTO for Portugal was changed in the April 2016 update of the Stability Programme, from a structural balance of -0.5 per cent of GDP to 0.25 per cent of GDP.

**Table 1** • Update of the minimum MTO for Portugal: as a percentage of GDP

| | Update of: | |
|---|---|---|
| | 2012 | 2016 |
| Minimum benchmark to reach a deficit < 3% | -1.8 | -1.6 |
| Sustainability of public finances | -0.9 | 0.3 |
| Debt stabilizing balance at 60% | -2.1 | -1.8 |
| Supplementary debt-reduction effort for debt > 60% | 1.3 | 1.9 |
| Additional adjustment due to cost of ageing | -0.2 | 0.2 |
| Lower bound for euro area Member States | -1 | -1 |
| **Minimum MTO** | **-1** | **0.25** |

Sources: European Commission and own calculations.

Note: The minimum MTO for the structural balance is rounded to the immediately lower ¼ of percentage point.

# 5. Supply

## Moderate economic recovery in the first half of 2016

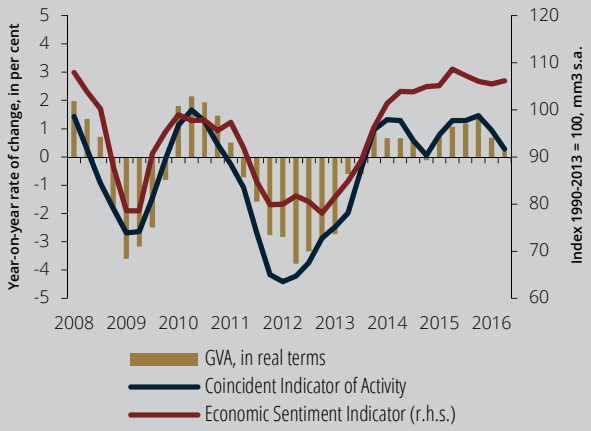
In the first half of 2016 Gross Value Added (GVA) at basic prices increased by 0.4 per cent in real terms from the same period a year earlier, after 1.2 per cent growth in 2015. This increase consolidated the moderate recovery path started at the end of 2013, showing overall developments consistent with the economic sentiment indicator (Chart 5.1). Notwithstanding, the level of GVA was still 4.0 per cent below the value recorded in 2008.

GVA in the services sector increased by 0.7 per cent year-on-year in the first half of 2016, following a 1.1 per cent rise in 2015. Growth in this sector continued on the recovery path observed since early 2014, albeit less sharply. This increase mainly reflected 3.0 per cent growth in activity in the trade and repair of motor vehicles and hotels and restaurants subsectors (Chart 5.2). These sectors reflect robust growth in tourism exports joined with a somewhat dynamic domestic demand.

There was a 0.9 per cent reduction in industry year-on-year, in the first half of 2016, in contrast to a 2.0 per cent increase in 2015. Overall, this was consistent with the evolution of the industrial confidence indicator (Chart 5.3).

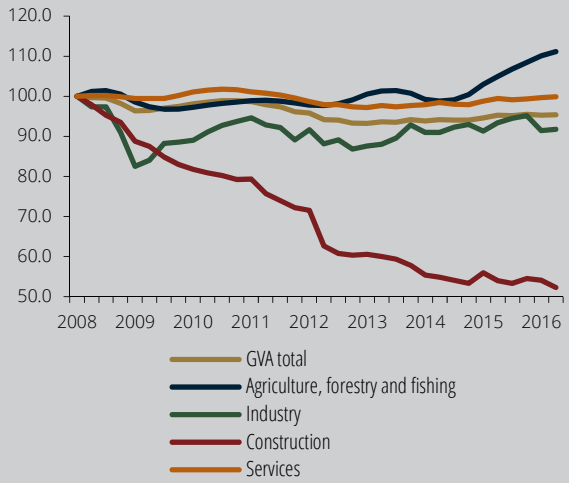
In the first half of 2016 activity in the construction sector declined by 3.2 per cent, after nil growth in 2015. This should be seen in the context of a downward trend of activity in the construction sector. This trend reflected a structural adjustment to a markedly lower activity level, following high public and private investment in construction in previous decades. Hence, GVA in construction at the end of the first semester of 2016 accounted for little over half the value recorded in 2008.

**Chart 5.1** • GVA, coincident indicator of activity and economic sentiment indicator




Sources: European Comission, *INE* and Banco de Portugal.

**Chart 5.2** • GVA by main sectors of activity | Index 2008 Q1 =100




Source: *INE*.

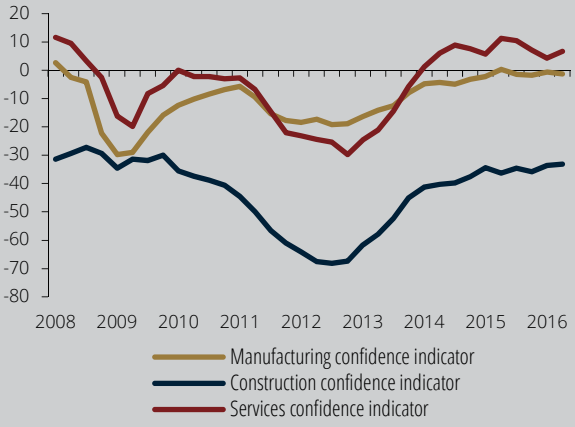
GVA in the agriculture, forestry and fishing sector has been particularly buoyant in the past few years. In the first half of 2016 GVA in this sector rose by 6.4 per cent, after 6.4 per cent growth in 2015. However, this sector as a share of total GVA was quite low, at around 2.4 per cent.

## Downward trend in population and labour force

In the first half of 2016 the resident population and labour force continued to decline, falling by 0.3 and 0.7 per cent respectively (Table 5.1). This is in line with the downward trend observed since 2011. Resident population in the 25-34 age group declined by 2.7 per cent, while the labour force declined by 2.9 per cent. However, these falls are less sharp than those seen in the past few years. In cumulative terms since 2008, the population and the labour force fell quite substantially (Chart 5.4). Throughout this period the resident population and the labour force decreased by approximately 243 and 377 thousand individuals respectively. This decline in the participation rate continued to make a negative contribution to the trend of *per capita* GVA in Portugal (Box 'Recent developments in real *per capita* GVA in Portugal').

In addition to internal demographics-related factors, this evolution cannot be separated from the recent dynamic of migration flows. According to Statistics Portugal, the reduction in the resident population also resulted from negative net migration, which in 2015 stood at around 1.0 per 1,000 inhabitants (more than 10,000 individuals). This balance, however, was of a less pronounced magnitude than seen in the past few years, which in 2012 had reached approximately 38,000 individuals. This dynamic reflected a reduction in the number of permanent emigrants compared to the last few years (to around 40,000 individuals), and also an increase in the number of permanent immigrants (to around 30,000 individuals) (Chart 5.5).[36]

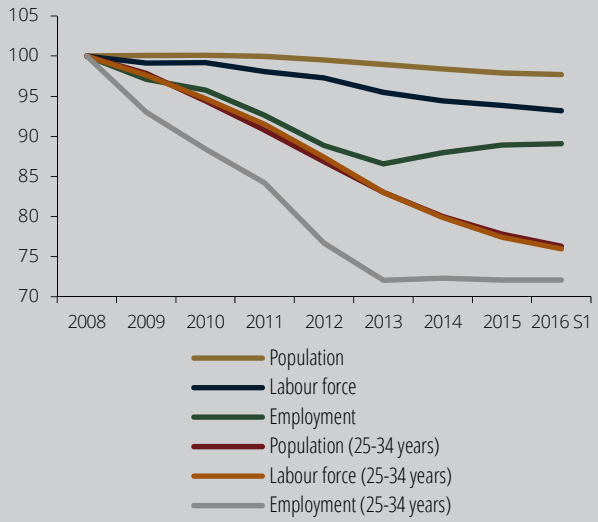
**Chart 5.3** • Confidence indicators – (2008 Q1–2016 Q2) | Balances (quarterly mean)




Source: European Commission.

Note: Seasonally adjusted figures.

**Chart 5.4** • Population, labour force, employment – Total and age group (25-34 years) | Index 2008 =100




Source: *INE* (Labour Force Survey).

**Table 5.1** • Labour market indicators | Year-on-year rate of change , in per cent, unless otherwise stated

| | Thousands of individuals in 2015 | Years | | | Semesters | | |
|---|---|---|---|---|---|---|---|
| | | 2013 | 2014 | 2015 | S1 2015 | S2 2015 | S1 2016 |
| Population | 10,337 | -0.6 | -0.6 | -0.5 | -0.5 | -0.5 | -0.3 |
| Population 25-34 years | 1,211 | -4.4 | -3.6 | -2.8 | -2.9 | -2.7 | -2.7 |
| Labour force | 5,486 | -1.8 | -1.1 | -0.6 | -0.6 | -0.5 | -0.7 |
| Labour force 25-34 anos | 1,400 | -5.0 | -3.8 | -3.1 | -3.2 | -3.1 | -2.9 |
| Participation rate 15-64 years (in % of population) | | 73.0 | 73.2 | 73.4 | 73.3 | 73.5 | 73.4 |
| Total Employment | 4,549 | -2.6 | 1.6 | 1.1 | 1.3 | 0.9 | 0.6 |
| Employees | 3,711 | -2.4 | 4.4 | 2.8 | 3.6 | 1.9 | 1.7 |
| Self-employment | 815 | -3.3 | -8.2 | -5.7 | -7.7 | -3.6 | -5.0 |
| Total Unemployment | 647 | 2.3 | -15.1 | -11.0 | -12.1 | -9.7 | -10.0 |
| Unemployment rate (in % of labour force) | | 16.2 | 13.9 | 12.4 | 12.8 | 12.1 | 11.6 |
| Unemployment rate 25-34 years (in % of labour force) | | 19.0 | 15.5 | 13.1 | 13.6 | 12.5 | 13.4 |
| Long-term unemployment (in % of total unemployment) | | 62.1 | 65.5 | 63.5 | 64.3 | 62.7 | 61.5 |
| Discouraged inactives (in % of labour force) | | 5.2 | 5.2 | 5.0 | 4.8 | 5.2 | 4.5 |

Source: *INE*.

Notes: Long-term unemployment includes the unemployed individuals that have been actively seeking employment for 12 months or more. The discouraged inactives include the inactive individuals who were available for work but had not looked for a job during the period.

## Improved labour market conditions amid moderate growth in both economic activity and wages in the first half of 2016

Labour market developments in the first half of 2016 continued to be characterised by a rise in employment and a significant decline in the unemployment rate, maintaining the improvement seen as of the second quarter of 2013, still in a context of wage moderation. According to data released by the Ministry of Solidarity, Employment and Social Security, in the first half of 2016 average wages declared to Social Security grew by 1.2 per cent compared to the same period a year earlier. This represents a slight acceleration from the previous year, when 0.6 per cent growth was recorded. This greater dynamic of wages declared to Social Security seems to be associated with an increase in the minimum wage early in the year, higher pressures in the labour market – stemming from a considerable decline in unemployment – and to a lesser extent, the reversal of civil servants' wage cuts.

## Marked reduction in the unemployment rate, despite remaining at very high levels

According to Statistics Portugal's Labour Force Survey, the total number of unemployed in the first half of 2016 declined by 10.0 per cent year-on-year, after a 11.0 per cent fall in 2015 (Table 5.1). The unemployment rate stood at 11.6 per cent in the first half of 2016, continuing to follow the downward trend started in 2013 (when a peak of 16.2 per cent was reached) and

standing close to the level observed in 2010. In the first half of 2016 the decline in the total number of unemployed year-on-year was particularly marked in the 35-44 age group. The share of unemployed receiving unemployment benefits stood at 25.9 per cent in the first half of 2016, against 28.5 per cent in 2015 (Chart 5.6).

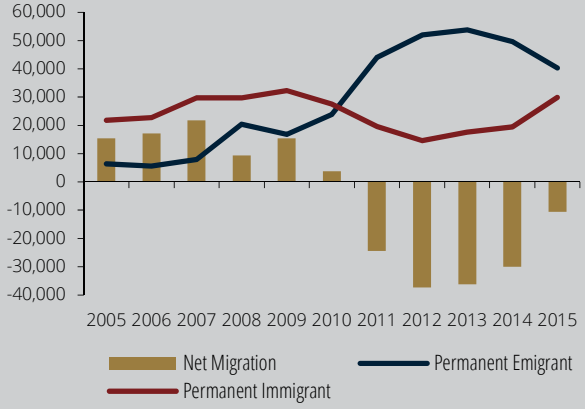
In addition, the number of discouraged workers, i.e. individuals not actively seeking a job but who are available to work, accounted for around 4.5 per cent of the labour force in the first half of 2016, slightly below the value recorded in 2015 (around 5.0 per cent). Nevertheless, this group represents a total of approximately 230,000 inactive individuals.

One of the most serious aspects of recent developments in the Portuguese labour market has been the very high level of long-term unemployment, which tends to cause a sharp depreciation of human capital, having an adverse impact on the economy's potential growth. In this context, the number of unemployed seeking work for 12 months and over fell by 13.9 per cent in the first half of 2016 (13.7 per cent fall in 2015). Nevertheless, long-term unemployment as a share of total unemployment remained at a very high level (61.5 per cent in the first half of 2016, totalling approximately 369,000 individuals). This level becomes particularly relevant since it reflects in particular the very long-term unemployed, i.e. those seeking a job for 24 months and over, which account for 76 per cent of long-term unemployment (Box 'Characterising very long-term unemployment in Portugal'). In the same vein, in the first half of 2016 the number of unemployed seeking work for less than 12 months fell by 3.1 per cent (5.7 decline in 2015 ) (Chart 5.7). In this context, it is important to mention that the share of these short-term unemployed in the total labour force currently stands at levels close to those observed in the years prior to the international financial crisis.

## Employment recorded positive developments despite remaining at historically low levels

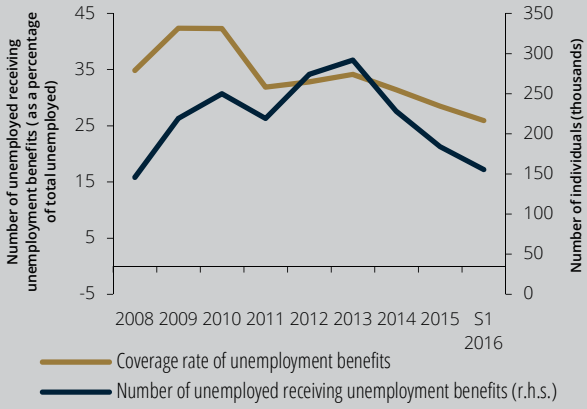
According to the Labour Force Survey, total employment increased by 0.6 per cent in the first

**Chart 5.5** • Net migration, permanent emigrants and immigrants | Number of individuals




Source: *INE*.

**Chart 5.6** • Number of unemployed receiving unemployment benefits and coverage rate




Source: *INE* (Labour Force Survey).

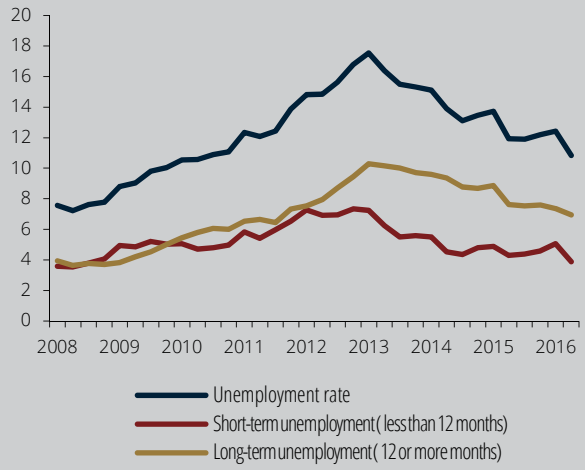
half of 2016, after a 1.1 per cent increase in 2015. This reflects an increase in the number of employees (1.7 per cent), given that self-employment fell markedly (-5.0 per cent). This increase in employees was particularly remarkable when framed by a year-on-year fall of about 18,000 workers who attended vocational training courses in the first half of 2016, according to data from the Institute of Employment and Professional Training (Chart 5.8). In spite of the upward trend of employment, its levels remain historically low, in the wake of the unprecedented fall observed between 2008 and 2013, which, according to quarterly national accounts, corresponded to around 630,000 individuals (Chart 5.4). In terms of general government employment, according to information from the Directorate General for Administration and Public Employment, the number of civil servants increased by 0.8 per cent year-on-year in the first half of 2016. This increase confirms the interruption of the downward trend observed up to the first half of 2015.

According to the Labour Force Survey, in the first half of 2016, employment in the segment of tertiary or upper secondary education increased by 4.2 and 5.1 per cent respectively, year-on-year, while employment in the other levels of education decreased (Chart 5.9). At the same time, there has been an increase in the relevance of the level of tertiary or upper secondary education in total employment, reaching around 50 per cent of total employment in this period (Chart 5.10).

## Apparent labour productivity changed slightly in the first half of 2016

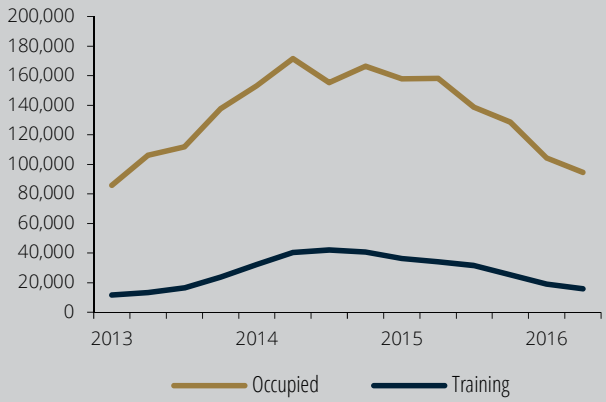
The Portuguese economy's current recovery phase brings together moderate activity growth and relatively more pronounced employment growth. Within this framework, the dynamic of apparent labour productivity based on the

**Chart 5.7** • Unemployment rate by duration of unemployment | Unemployment rate by duration of unemployment




Source: *INE* (Labour Force Survey).

**Chart 5.8** • Total number of individuals considered occupied or under training | Number of individuals

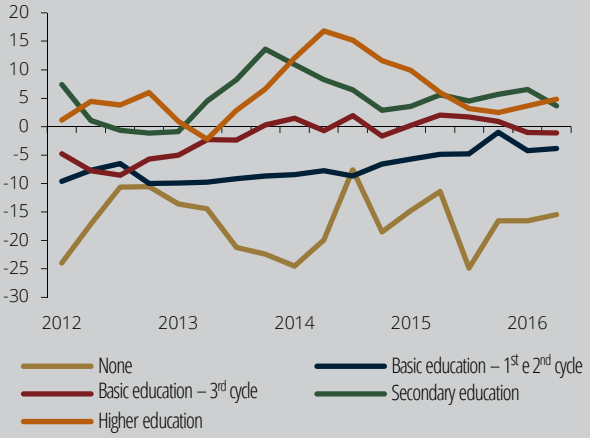



Source: *Instituto do Emprego e Formação Profissional*.

Note: Occupied individuals are the ones currently attending employment or training programs, excluding the ones that aim at a direct integration in the labour market.

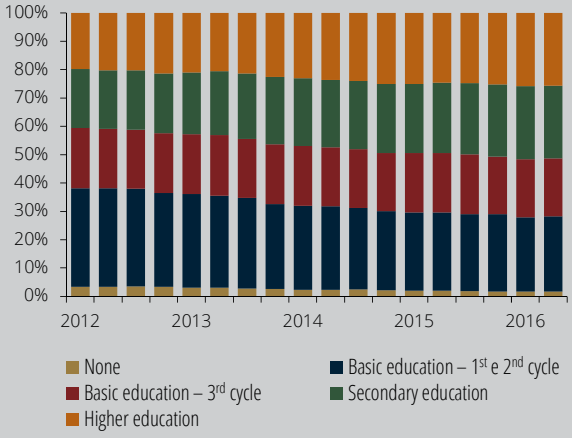
quarterly national accounts of Statistics Portugal was lower and atypical compared to previous phases of economic recovery. However, from 2011 to 2013 apparent labour productivity growth was strong, also in contrast to prior recessive phases of the cycle (Chart 5.11). Developments in productivity may also reflect the allocation of workers across the different sectors of activity (Box 'Productivity and job reallocation in Portugal').

**Chart 5.9** • Employment dynamics by education level | In per cent




Source: *INE* (Labour Force Survey).

**Chart 5.10** • Emploment by level of education | In per cent




Source: *INE* (Labour Force Survey).

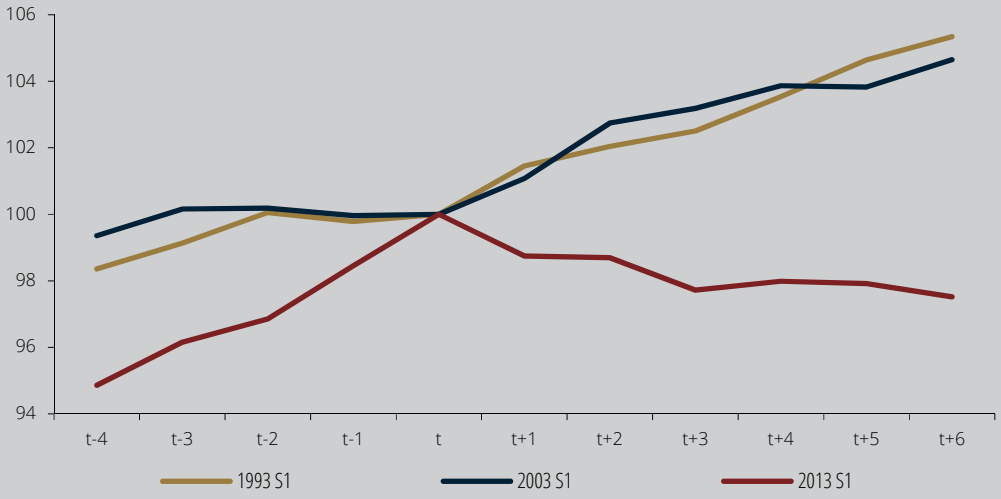



**Chart 5.11** • Apparent labour productivity in the last three crisis and recoveries | Biannual figures; Minimum level of activity = semester t=100

Sources: *INE* and Banco de Portugal.

Note: Apparent labour productivity was computed based on GVA, except for the crisis in 1992, in which GDP was considered instead.

## Box 5.1 | Recent developments in real *per capita* GVA in Portugal

The important demographic changes that have occurred in Portugal in the past few years, with a significant decline in the population in general and in the labour force in particular, rendered it relevant to complement the analysis of the behaviour of GVA with an analysis of *per capita* GVA.

This box presents an analysis of developments in real *per capita* GVA between 2011 and the first half of 2016, in an attempt to answer the following questions in particular: What is the relative importance of demographic changes to real *per capita* GVA growth in the past few years? What is the relevance of labour market dynamic, particularly employment, to this evolution? To what extent does *per capita* GVA growth reflect changes in GVA *per worker*?

This exercise uses sources such as the GVA of Statistics Portugal's quarterly national accounts and information on developments in employment, population and labour force from the Labour Force Survey.

To understand how *per capita* GVA growth can be broken down into changes in productivity (as measured by GVA *per worker*), employment and activity rate, real *per capita* GVA can be expressed as follows:

$$\frac{Y}{N} = \frac{Y}{E}\frac{E}{A}\frac{A}{N}$$

ou

$$y = w \times e \times a$$

where $Y$ represents total real GVA, $E$ total employment, $A$ the labour force, $N$ total population, and $Y/N$ real *per capita* GVA. In turn, $w = Y/E$ translates real GVA *per worker*, $e = E/A$ the share of employment in the labour force (hereinafter referred to as employment rate), and $a = A/N$ the share of the labour force in the total population (participation rate).

In this vein, real *per capita* GVA growth can be broken down into growth associated with changes in real GVA *per worker*, employment rate and participation rate.

The so-called Shapley decomposition makes it possible to break down the change in real *per capita* GVA into the contribution of those three components. Hence, the total change will equal the sum of growth associated with its three sub-components:$w$, $e$ and $a$. If the growth share assignable to each component is represented by$w$, $e$ and $a$, then real *per capita* GVA growth can be represented by:

$$\Delta y = \bar{w} \times \Delta y + \bar{e} \times \Delta y + \bar{a} \times \Delta y$$

or, expressed in terms of growth rate

$$\frac{\Delta y}{y} = \bar{w} \times \frac{\Delta y}{y} + \bar{e} \times \frac{\Delta y}{y} + \bar{a} \times \frac{\Delta y}{y}$$

For example, $\bar{w} \times \Delta y$ measures real *per capita* GVA growth consistent with a scenario where the participation rate and the employment rate remain constant. Likewise, $\bar{e} \times \Delta y$ and $\bar{a} \times \Delta y$ measure the impact on real *per capita* GVA that can be assigned respectively to changes in the employment rate and changes in the participation rate.

Table 1 shows the evolution of the relevant indicators for this decomposition between 2011 and the first half of 2016. In particular, the population and the labour force fell in all years under review. In turn, employment fell strongly between 2011 and 2013, followed by an uninterrupted recovery up to the first half of 2016. Since 2014 real *per capita* GVA has been growing considerably, in contrast to the case seen between 2011 and 2013, where it experienced a sharp fall.

**Table 1** • Main relevant indicators for the calculation of real GVA *per capita* and real GVA *per worker*

| | Value in 2011 | Growth rate in percentage or change in percentage points | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2012 | 2013 | 2014 | 2015 | 2015 H1 | 2016 H1 | 2011-2015 |
| Real GVA (EUR $10^9$) | 154.2 | -3.2 | -0.8 | 0.4 | 1.2 | 1.0 | 0.4 | -2.4 |
| Population (EUR $10^6$) | 10.6 | -0.4 | -0.6 | -0.6 | -0.5 | -0.5 | -0.3 | -2.0 |
| Labour force (EUR $10^6$) | 5.4 | -0.8 | -1.8 | -1.1 | -0.6 | -0.6 | -0.7 | -4.3 |
| Number of workers (EUR $10^6$) | 4.7 | -4.1 | -2.6 | 1.6 | 1.1 | 1.3 | 0.6 | -4.0 |
| GVA *per capita* (EUR $10^3$) | 14.6 | -2.8 | -0.2 | 1.0 | 1.6 | 1.5 | 0.8 | -0.4 |
| GVA *per worker* (EUR $10^3$) | 32.5 | 0.9 | 1.9 | -1.1 | 0.1 | -0.3 | -0.2 | 1.7 |
| Employment rate (% of labour force)[a),(b)] | 87.3 | -2.8 | -0.7 | 2.3 | 1.4 | 1.7 | 1.2 | 0.2 |
| Participation rate (% total pop.)[1] | 51.4 | -0.2 | -0.6 | -0.3 | -0.1 | -0.1 | -0.2 | -1.2 |

(a) Change in percentage points.

(b) Number of employees as a percentage of total labour force.

**Chart 1** • Main contributions to the change in the real GVA per capita; growth in percentage and contributions in percentage points

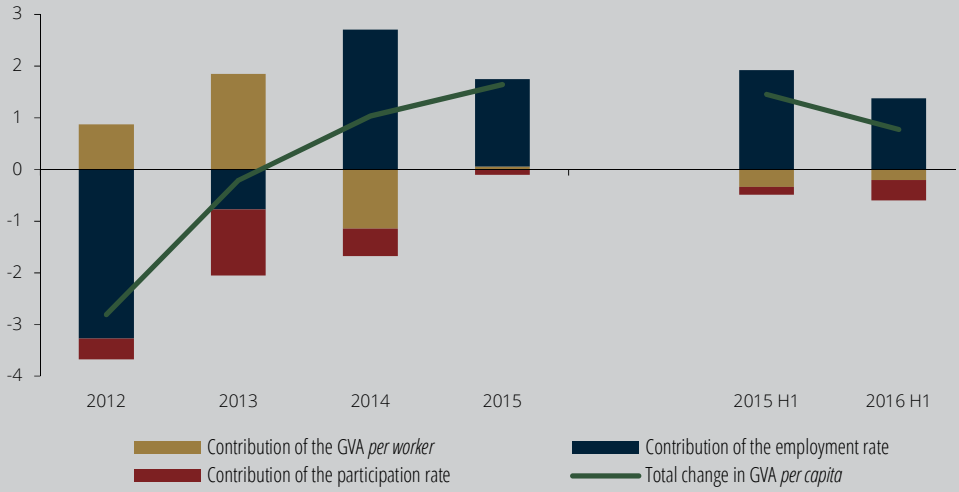


**Table 2** • Main contributions to the change in the real GVA *per capita* in Portugal

| | 2012 | 2013 | 2014 | 2015 | 2015 H1 | 2016 H1 | 2011-2015 |
|---|---|---|---|---|---|---|---|
| Real GVA *per capita* (%) | -2.8 | -0.2 | 1.0 | 1.6 | 1.5 | 0.8 | -0.4 |
| Contribution in p.p.: | | | | | | | |
| GVA *per worker* | 0.9 | 1.8 | -1.1 | 0.1 | -0.3 | -0.2 | 1.7 |
| Employment rate | -3.3 | -0.8 | 2.7 | 1.7 | 1.9 | 1.4 | 0.3 |
| Participation rate | -0.4 | -1.3 | -0.5 | -0.1 | -0.2 | -0.4 | -2.3 |

Based on this information, chart 1 and table 2 show the results of the decomposition of real *per capita* GVA growth. The decline in real *per capita* GVA from 2011 to 2013 reflects a sharp negative contribution from both the activity rate and the employment rate. In turn, GVA *per worker* made a positive contribution to real *per capita* GVA growth. By contrast, after 2013, the dynamic of real *per capita* GVA has been benefiting from the rise in the employment rate, which contrasts with the negative cumulative contribution of the trend of GVA *per worker* and the activity rate. These trends were maintained in the first half of 2016 and represented important challenges to the potential growth level of the Portuguese economy in the medium term.

## Box 5.2 | Characterising very long-term unemployment in Portugal

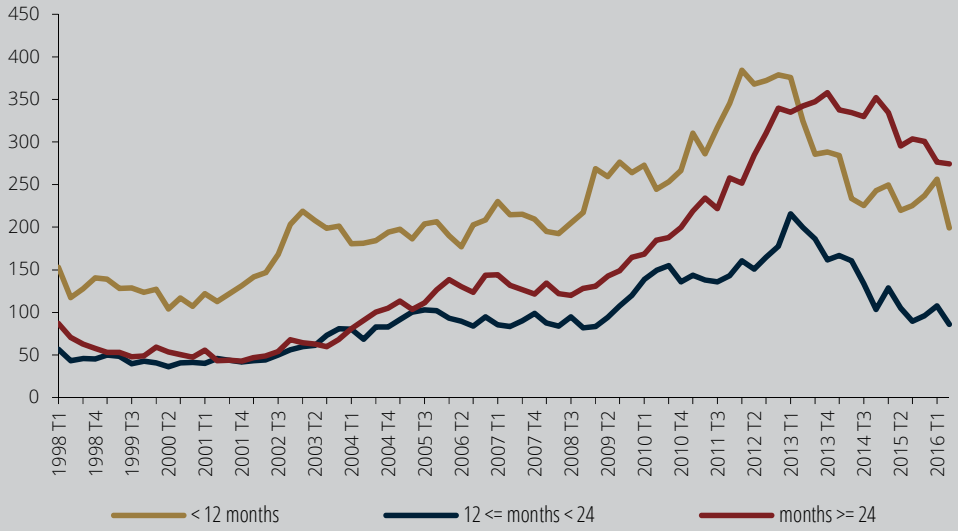
One of the most striking features of developments in unemployment in Portugal in the past few years is the increase in its duration. Early in 2011 the average duration of unemployment stood at around 24 months. In the first half of 2016 this level had already risen to 32 months. This is also noticeable in the evolution of the number of short-term (less than 12 months), medium--term[37] (12 months and over but less than 24 months) and very long-term (24 months and over) unemployed. In the second quarter of 2016 the number of short and medium-term unemployed amounted to around 199,000 and 86,000 respectively. These levels were not very different from those observed in the second half of the 2000s (Chart 1). By contrast, the number of very long-term unemployed in the second quarter of 2016 amounted to around 275,000, more than double compared to a decade ago. Hence, nowadays, around half of the unemployed in Portugal are very long-term unemployed (Chart 2).

In this context, this box aims to characterise the very long-term unemployed in Portugal, based on data from Statistics Portugal's Labour Force Survey. The descriptive evidence compares the features of the very long-term unemployed with those of short and medium-term unemployed. The features analysed are gender, age, schooling level, the last sector of activity before transition to unemployment, and access to unemployment benefits (Charts 3 to 7).

Chart 3 shows that the incidence of very long-term unemployment is relatively higher for men. In fact, around 54 per cent of the very long-term unemployed are men, compared to 46 per cent in the case of short-term unemployment.

In terms of age bracket, as expected, very long-term unemployment prevails more in higher age brackets, in contrast to short-term unemployment (Chart 4). Around 55 per cent of the very long--term unemployed are aged 45 and over (compared with approximately 25 per cent in the case of short-term unemployment). This notwithstanding, around 37 per cent of the unemployed aged under 45 years are very long-term unemployed (corresponding to about 126,000 individuals).

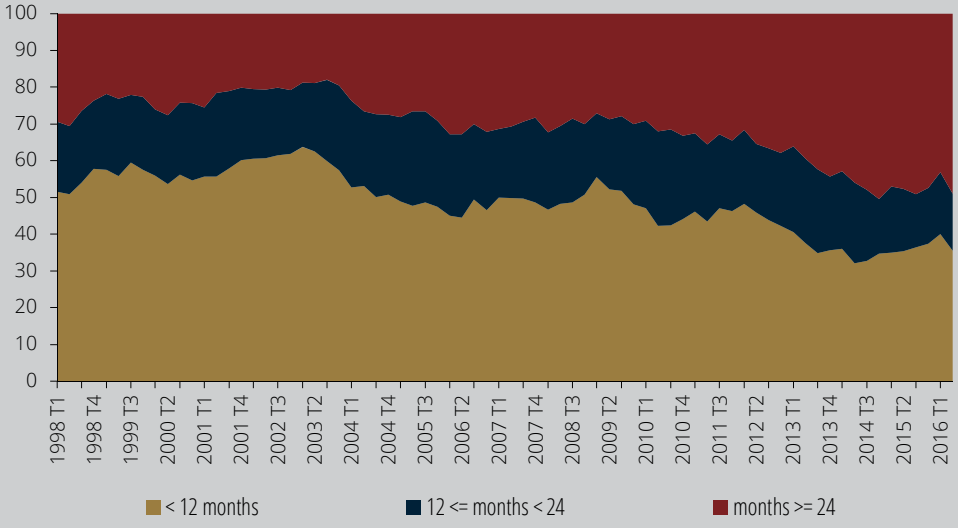
**Chart 1** • Number of unemployed, by unemployment duration
| Thousands of individuals




Source: *INE*, Employment Survey.

Note: There is a break in the series in 2011, due to a methodological change in the Survey.

**Chart 2** • Breakdown of total unemployment, by unemployment duration
| In percentage

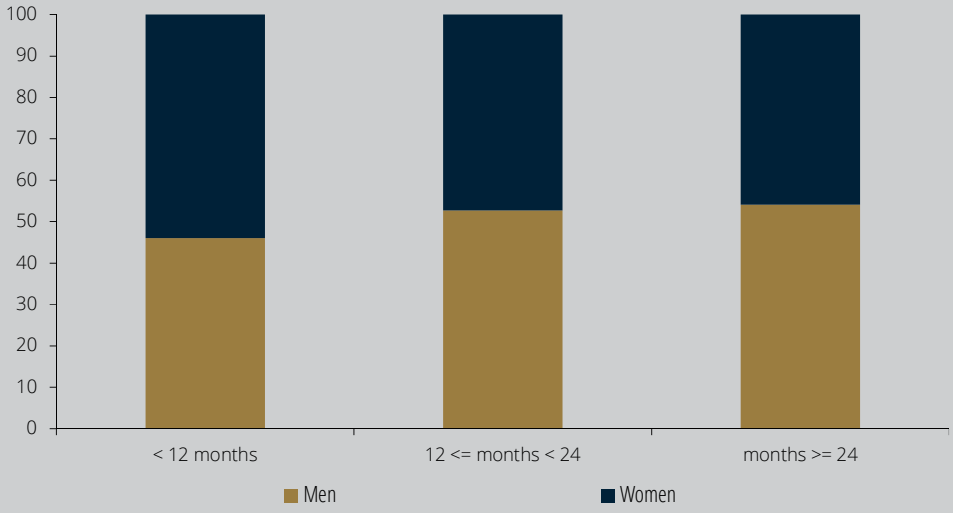



Source: *INE*, Employment Survey.

Note: There is a break in the series in 2011, due to a methodological change in the Survey.

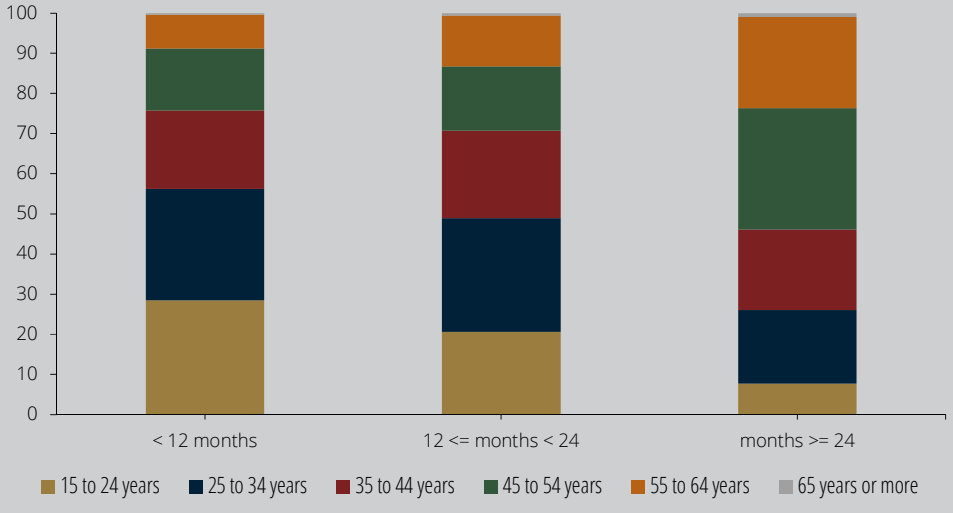
With regard to schooling level, chart 5 shows that the breakdown of very long-term unemployment by different schooling levels is comparable to that observed in the case of shorter duration unemployment, notwithstanding a greater prevalence of individuals with primary and lower secondary education in the very long-term unemployed. It is nevertheless important to refer that around 42 per cent of unemployed with secondary or tertiary education are very long-term unemployed (which corresponds to around 42,000 individuals). Within this scope, it

**Chart 3** • Breakdown of each unemployment duration, by gender
| In percentage




Source: *INE*, Employment Survey 2016 Q2.

**Chart 4** • Breakdown of each unemployment duration, by age group
| In percentage

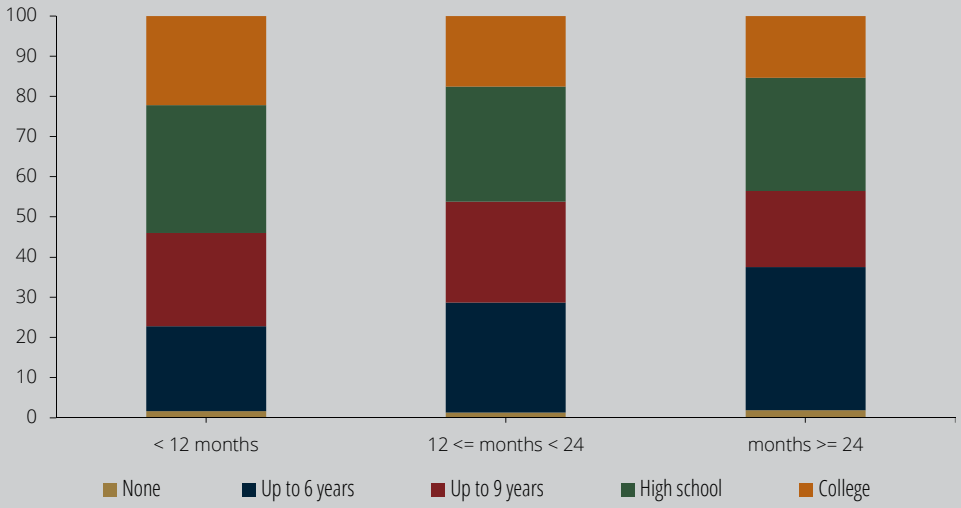



Source: *INE*, Employment Survey 2016 Q2.

should be noted that long unemployment spells determine a depreciation of the human capital of the unemployed, and thus the respective schooling level may become progressively less representative.

In terms of breakdown by sector of actizvity in the previous job (which excludes unemployed persons seeking their first job), chart 6 shows a relatively higher prevalence of construction and manufacturing sectors in very long-term unemployment. In absolute terms, the biggest contributions to

**Chart 5** • Breakdown of each unemployment duration, by schooling level
| In percentage




Source: *INE*, Employment Survey 2016 Q2.

**Chart 6** • Breakdown of each unemployment duration, by sector of activity
| In percentage

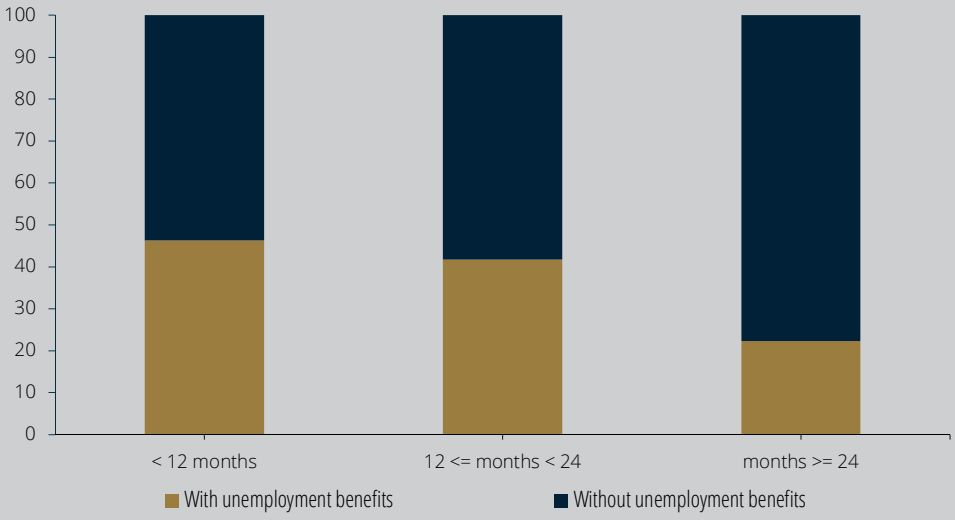

Source: *INE*, Employment Survey 2016 Q2.

very long-term unemployment – as in the other unemployment durations – are the services sector and, to a lesser extent, manufacturing.

Finally, chart 7 shows evidence on the share of the unemployed receiving unemployment benefits. Only 22 per cent of the very long-term unemployed receive unemployment benefits, compared to 46 per cent in short-term unemployment.

Overall, the evidence shown suggests that the features of the very long-term unemployed are not radically different from those observed in the other unemployment durations. The prevalence of the very long-term unemployed in all age brackets, at all skill levels and in all sectors of activity is the main conclusion emerging from this evidence. This observation may be relevant in designing policies to integrate the very long-term unemployed into the labour force. The importance of these policies stems from the impact of very prolonged durations of unemployment on poverty rates, social exclusion risk, the incidence of health problems, the economies' potential output, and the position of public finances (European Commission, 2015).[38]

**Chart 7** • Breakdown of each unemployment duration, by access to unemployment benefits | In percentage




Source: *INE*, Employment Survey 2016 Q2

## Caixa 5.3 | Productivity and job reallocation in Portugal

A recent strand of theoretical and empirical literature has sought to measure the efficiency level in the allocation of resources, particularly the labour factor, across enterprises and sectors of activity. In this context, developments in aggregate productivity depend on two important dimensions. The first has to do with the trend of productivity in each sector, and the second is associated with changes in the composition across sectors. In other words, even if productivity does not change significantly in any sector, aggregate productivity may increase if productive inputs are allocated to more productive sectors to the detriment of those with lower productivity.

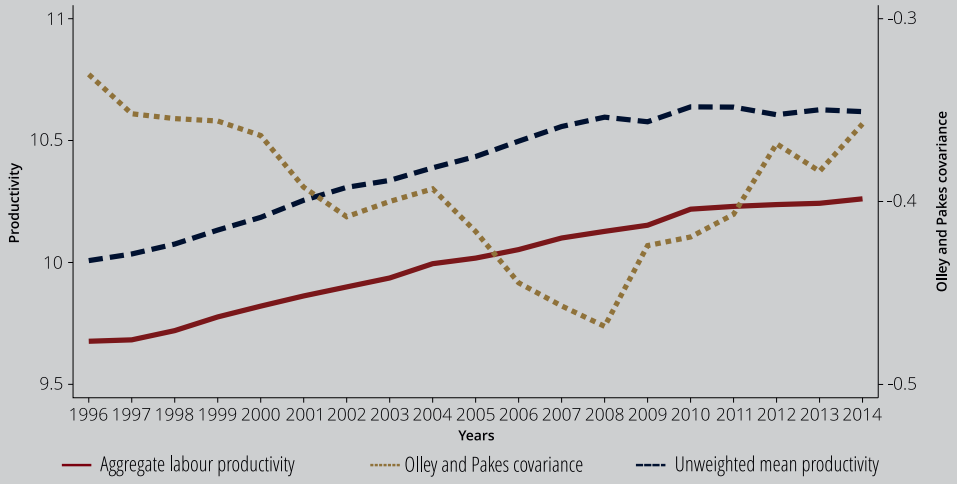
This box analyses the evolution of a simple measure of aggregate productivity: labour productivity.[39] Hence, aggregate labour productivity in year $t$ is defined as:

$$\Phi_t = \sum_i s_{it}\, \varphi_{it},$$

where $s_{it}$ is the weight of employment in sector $i$ and in year $t$, and $\varphi_{it}$ is labour productivity in sector $i$ and in year $t$. Labour productivity is calculated as the ratio of gross value added (GVA) at constant prices to (full-time equivalent) employment in sector $i$ and in year $t$.

Chart 1 shows the trend of aggregate labour productivity, $\Phi_t$ in Portugal between 1996 and 2014. Aggregate productivity has increased consistently since 1997. However, it has been decelerating since 2010.[40]

**Chart 1** • Productivity and job reallocation in Portugal




Sources: *INE* and Banco de Portugal.

According to Olley and Pakes (1996), it is possible to decompose aggregate labour productivity $\Phi_t$ in each year as follows:[41]

$$\Phi_t = \bar{\varphi}_t + \sum_i (s_{it} - \bar{s})\,(\varphi_{it} - \bar{\varphi}_t),$$

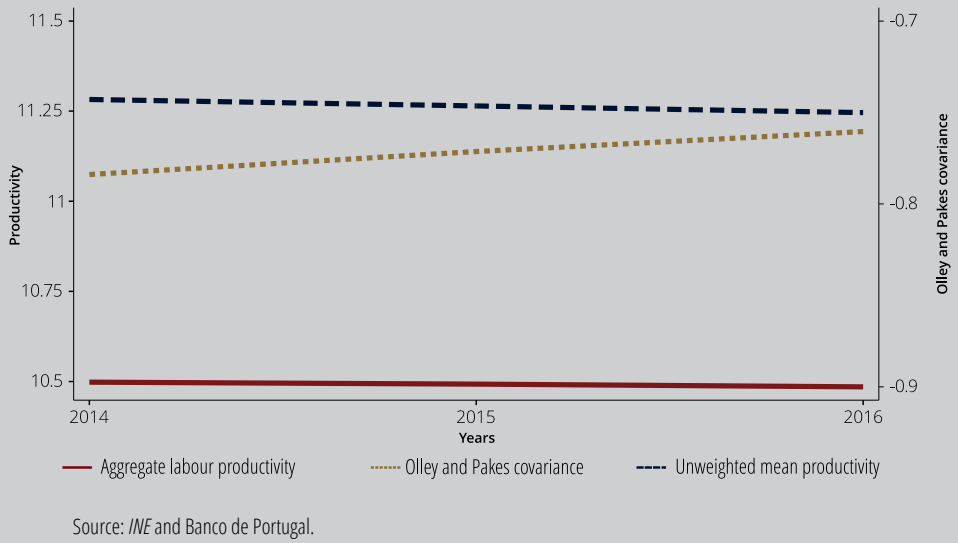
where $\bar{\varphi}_t = (\sum_{i=1}^{n} \varphi_{it})/n$ is the unweighted average of productivity, $n$ is the number of sectors, and $\bar{s} = 1/n$ is the average weight of each sector in terms of employment.

The interpretation is quite direct: aggregate productivity is higher than the unweighted average of productivity when sectors that are more productive than average (i.e. $\varphi_{it} > \bar{\varphi}_t$) show an average weight that is higher than average in terms of the labour factor, (i.e. $s_{it} > \bar{s}$ ). When all sectors have the same weight in terms of the labour factor (equal to $\bar{s}$) and/or all sectors are equally productive, aggregate productivity coincides with the unweighted average of productivity.

Using the Olley and Pakes decomposition, one may study the evolution of productivity. Hence, changes in productivity over time, $\Delta\Phi$, are obtained through changes in the unweighted average, $\Delta\bar{\varphi}$, and changes in the covariance term. These two dimensions of the trend of productivity provide a natural method for decomposing changes in productivity into a component that reflects the shifts of the distribution of productivity (through variation of the first moment, $\Delta\bar{\varphi}$), and another component that measures the reallocation of employment through the variation of covariance.

Chart 1 shows the trend of these two terms of the decomposition. One may draw two conclusions from this chart. First, in the period under review, employment is more concentrated on the economic sectors with a lower productivity level: the covariance term (measured on the right-hand axis) is consistently negative. Second, this allocative inefficiency worsened up to 2008, but has

**Chart 2** • Productivity and job reallocation in Portugal




Source: *INE* and Banco de Portugal.

been improving ever since.[42] The crisis period coincides with an improvement in the allocation of the labour factor across the various economic sectors.[43]

Annual national accounts only allow for a calculation of productivity up to 2014. To include the most recent years in the analysis it is necessary to use other databases and introduce some methodological hypotheses. First, gross value added at constant prices after 2014 is assumed to vary according to quarterly national accounts data.[44] Second, Social Security employment data are used up to the second quarter of 2016, and data from the Civil Service Pension Fund (*Caixa Geral de Aposentações*) are used to calculate the weight of employment by sector and gross value added *per worker*.[45] Against this background, it is possible to extend the analysis of chart 1 to the most recent period. The methodological hypotheses assumed in this exercise require some caution when interpreting results. Chart 2 shows the results of this exercise and seems to confirm that in the most recent period the efficiency of the allocation of the labour factor seems to have improved somewhat.

# References


**Dias**, Daniel, **Marques**, Carlos Robalo and **Richmond**, Christine, "Resource allocation, productivity and growth in Portugal", *Economic Bulletin*, October 2014, Banco de Portugal, Economics and Research Department.

**Olley**, G. Steven and **Pakes**, Ariel, 1996. "The Dynamic of Productivity in the Telecommunications Equipment Industry," Econometrica, *Econometric Society,* vol. 64(6), p. 1263-97, November.

**Reis**, Ricardo, 2013, "The Portuguese Slump and Crash and the Euro-Crisis." *Brookings Papers on Economic Activity*, 46, 143-193, Spring 2013.

**Reis**, Ricardo, 2015, "Looking for a Success in the Euro Crisis Adjustment Programs." *Brookings Papers on Economic Activity*, 433-447, Fall 2015.

**Syverson**, Chad, 2011, "What Determines Productivity?," Journal of Economic Literature, *American Economic Association,* vol. 49(2), p. 326-65, June.

# 6. Demand

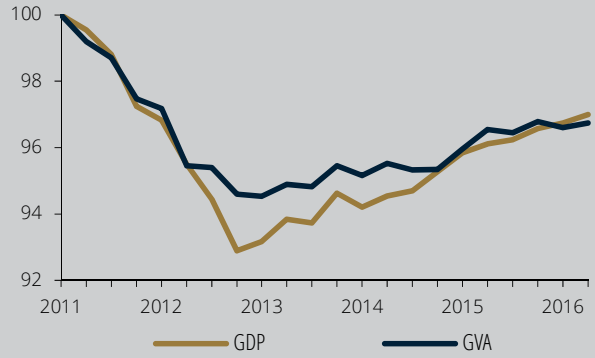
## More subdued GDP growth in the first half of 2016, reflecting to a large extent a considerable drop in investment and decelerating exports

In the first half of 2016, real GDP in Portugal grew by 0.9 per cent on year-on-year terms and by 0.5 per cent compared with the second half of 2015 (Table 6.1). Similarly to the past two years, during the first half of 2016, GDP grew more than GVA, which increased by 0.4 per cent year-on-year during this period (Chart 6.1). The discrepancy between growth in GDP and GVA is explained by developments in taxes less subsidies, which grew by 5.6 per cent in real terms in the first half of 2016 compared with the same period a year earlier, after growing by 5.1 per cent in 2015.[46]

Developments in economic activity in Portugal during the more recent period have been characterised by a relatively moderate pace of growth, particularly given the severity and length of the recession preceding it. Against this background, in the first half of 2016, GDP stood 5.6 per cent below the level seen at the start of 2008. The recovery in economic activity has taken place against a background characterised by high levels of indebtedness for the various economic agents (both public and private) and a need for adjustments in their balance sheets. In the more recent period, mention should also be made to the impact on the Portuguese economy of a very considerable decrease in trade flows with Angola, which had a particularly negative impact on goods exports.[47]

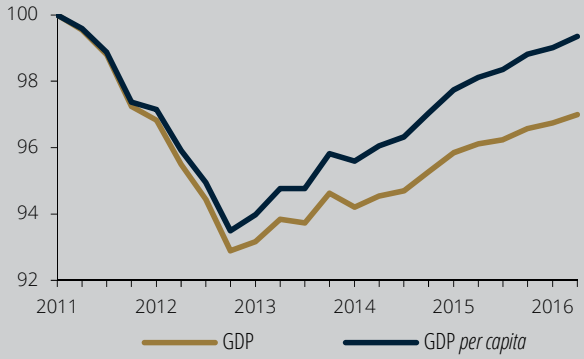
The more subdued pace of growth in economic activity in the first half of 2016 is the result of a less buoyant domestic demand, which was largely affected by a drop in investment and a continued deceleration in exports of goods and services observed since mid-2015.

**Chart 6.1** • Recent developments in GDP and GVA in Portugal | 2011 Q1=100




Sources: *INE* and Banco de Portugal calculations.

**Chart 6.2** • Recent developments in GDP and GDP per capita in Portugal | 2011 Q1=100




Sources: *INE* and Banco de Portugal calculations.

**Table 6.1** • GDP and its main components | Year-on-year growth in percentage, unless otherwise stated

| | % of GDP in 2015 | 2013 | 2014 | 2015 | 2015 | | 2016 | 2015 | | | | 2016 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | H1 | H2 | H1 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| GDP | 100.0 | -1.1 | 0.9 | 1.6 | 1.7 | 1.5 | 0.9 | 1.7 | 1.7 | 1.6 | 1.4 | 0.9 | 0.9 |
| Domestic demand | 99.3 | -2.0 | 2.2 | 2.5 | 2.9 | 2.2 | 1.1 | 1.8 | 3.9 | 2.0 | 2.4 | 1.6 | 0.7 |
| Private consumption | 65.6 | -1.2 | 2.3 | 2.6 | 3.1 | 2.0 | 2.0 | 2.8 | 3.4 | 2.1 | 1.9 | 2.5 | 1.6 |
| Public consumption | 18.2 | -2.0 | -0.5 | 0.8 | 0.5 | 1.2 | 1.1 | -0.2 | 1.2 | 1.1 | 1.3 | 1.3 | 0.8 |
| Investment | 15.5 | -5.1 | 5.3 | 4.6 | 4.7 | 4.4 | -2.3 | 0.1 | 9.6 | 3.0 | 5.9 | -2.0 | -2.7 |
| GFCF | 15.3 | -5.1 | 2.3 | 4.5 | 7.3 | 1.8 | -2.7 | 8.8 | 5.9 | 2.1 | 1.5 | -2.5 | -2.9 |
| Change in inventories[a] | | 0.0 | 0.5 | 0.0 | -0.4 | 0.4 | 0.1 | -1.3 | 0.6 | 0.1 | 0.7 | 0.1 | 0.0 |
| Exports | 40.6 | 7.0 | 4.3 | 6.1 | 7.7 | 4.6 | 2.5 | 7.7 | 7.6 | 5.6 | 3.7 | 3.3 | 1.7 |
| Imports | 39.8 | 4.7 | 7.8 | 8.2 | 10.3 | 6.2 | 2.9 | 7.6 | 13.0 | 6.4 | 6.0 | 4.7 | 1.2 |
| Contribution of domestic demand[a] | | -2.0 | 2.2 | 2.6 | 2.9 | 2.3 | 1.2 | 1.8 | 4.0 | 2.1 | 2.4 | 1.6 | 0.7 |
| Contribution of exports[a] | | 2.6 | 1.7 | 2.5 | 3.1 | 2.0 | 1.1 | 3.1 | 3.1 | 2.3 | 1.6 | 1.4 | 0.7 |
| Contribution of imports[a] | | -1.8 | -3.1 | -3.5 | -4.3 | -2.7 | -1.3 | -3.2 | -5.4 | -2.8 | -2.6 | -2.1 | -0.6 |
| *Memo:* | | | | | | | | | | | | | |
| GDP – change over the previous period | | | | | 1.0 | 0.4 | 0.5 | 0.6 | 0.3 | 0.1 | 0.3 | 0.2 | 0.3 |
| Domestic demand (exc. change in inventories) | 99.1 | -2.0 | 1.8 | 2.5 | 3.2 | 1.8 | 1.1 | 3.1 | 3.4 | 1.9 | 1.7 | 1.5 | 0.7 |

Sources: *INE* and Banco de Portugal calculations.

Note: (a) Contributions to the real growth of GDP, in percentage points.

The drop in investment observed in the first half of the year reflects, to a large extent, the fall of GFCF in construction, after the recovery seen in 2015, while the decline in exports of both energy goods and non-tourism services contributed to weaker growth in exports of goods and services. In turn, the pace of growth in private consumption stabilised and exports of tourism services remained very buoyant. A loss in momentum in a number of domestic demand components with high import content – such as exports of energy goods or investment in machinery and equipment – contributed to a deceleration in imports of goods and services in the first half of 2016.

After two years of GDP growth in Portugal similar to that of the euro area, the growth differential compared with the euro area average was again negative in the first half of 2016, reaching -0.7 p.p. (Chart 6.3). Considering the population dynamics, the pace of *per capita* growth in Portugal and the euro area is expected to have been similar.[48]

## Stabilisation of the pace of growth of private consumption, amid an improving labour market situation and financing conditions of households

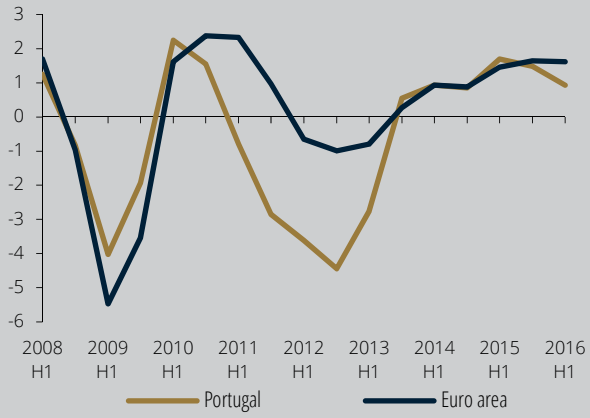
In the first half of 2016, real private consumption grew by 2.0 per cent compared with the same period in 2015 – posting a figure similar to that of the second half of 2015. Growth in private consumption remained stable and stood above GDP growth in the first half of 2016. In nominal terms, growth in private consumption

is expected to have stood above growth in disposable income, resulting in a decrease in the household savings rate.

These developments in private consumption took place in a context where consumer confidence remains historically high and there is an increase in households' real disposable income. Against this background, mention should be made to the improvement in the labour market situation, in particular the decrease in the unemployment rate, the increase in the minimum wage and in the income reinstatement measures included in the State Budget for 2016, as well as the positive impact on income resulting from a continued downward trend in oil prices. Mention should also be made to the potential effect of a decrease in the debt service of households in the more recent period, as a result of interest rates stabilising at low levels, together with a decline in the levels of indebtedness.[49] Against this background, the financing conditions of households improved, particularly in consumer credit (Section 3). Available evidence shows that the share in private consumption of new business for consumer credit has followed an upward path, standing at levels close to those observed before the sovereign debt crisis (Chart 6.4).

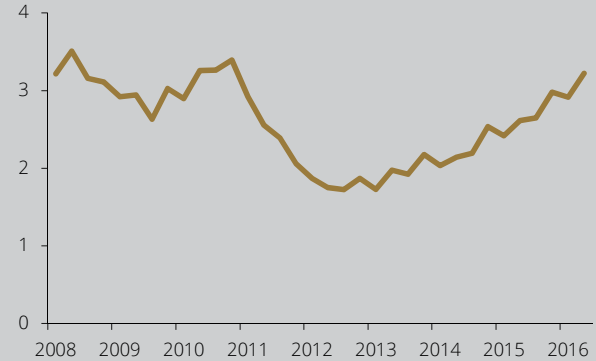
Developments in private consumption in the first half of the year reflect an acceleration in the consumption of durable goods and a more subdued pace of growth in spending on current consumption goods and services (Chart 6.5). In the first half of 2016, spending on current consumption goods increased by 1.3 per cent year on year (1.5 per cent in the second half of 2015), while the consumption of durable goods grew by 9.8 per cent (7.6 per cent in the second half of 2015). The marked growth in spending on durable goods in the more recent period occurs after a strong contraction in consumption of this type of goods recorded in the 2009-12 period. At the start of 2016, sales of light passenger vehicles remained highly dynamic and continued to follow the path of strong growth observed since mid-2013, in contrast with the

**Chart 6.3** • GDP growth in Portugal and in the Euro Area | Year-on-year growth in percentage




Sources: Eurostat, *INE* and Banco de Portugal calculations.

**Chart 6.4** • Share of private consumption in the new operations of bank credit to consumption | New operations; in percentage




Sources: *INE* and Banco de Portugal.

relatively weaker growth in the consumption of durable goods excluding cars (0.5 per cent in the first half of 2016, after 3.3 per cent in 2015) (Chart 6.6). Sales of light passenger vehicles were particularly high in the first quarter of the year, as purchases of this type of vehicle may have been brought forward ahead of the tax changes introduced in the second quarter.

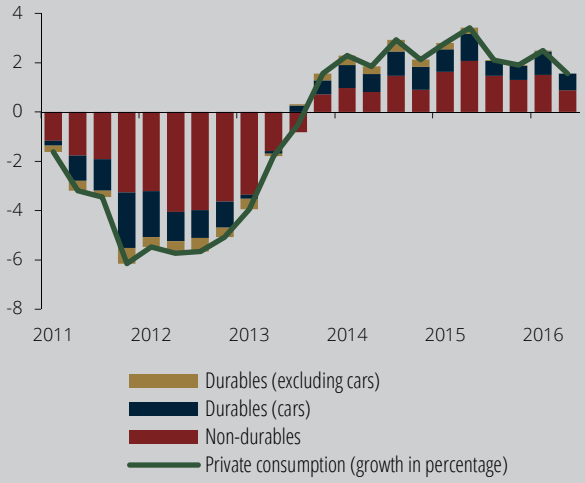
A considerable drop in investment in the first half of the year reflected to a large extent a decline of GFCF in construction

In the first half of 2016, investment dropped by 2.3 per cent in volume, compared with the same period in 2015, and by 1.5 per cent, compared with the second half of 2015.

The main contribution to developments in investment in the first half of 2016 came from GFCF in construction, which declined by 3.6 per cent year-on-year (Chart 6.7). Consequently, after the consecutive drops observed since 2002, followed by a considerable recovery in 2015, this investment component, with a share of around 50 per cent in total GFCF, declined markedly again. These developments may partly reflect the impact of the completion of a number of large-scale infrastructures at the end of 2015, as well as the adverse weather conditions recorded at the start of the year. The decline of GFCF in construction in the first half of 2016 is consistent with developments in cement sales in the domestic market, as well as other indicators usually used to assess the performance of the construction sector, which also suggest a decline in this GFCF component in the more recent period, albeit less markedly.

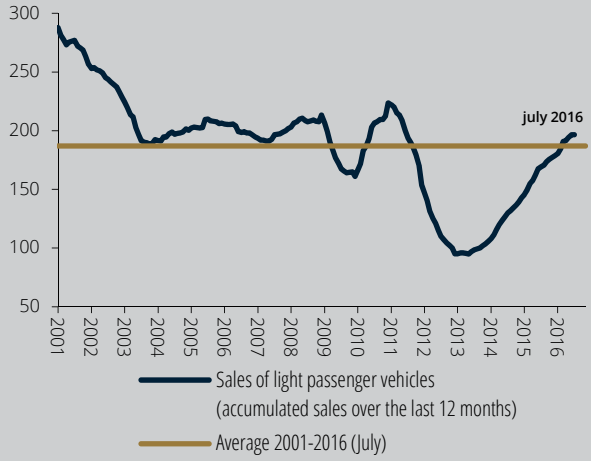
The decline in GFCF in machinery and equipment (-5.2 per cent) also contributed to the GFCF reduction year-on-year in the first half of the year. Against this background, compared with the second half of 2015, this investment component recorded a less marked decline (-0.6 per cent, compared with -4.6 per cent in the second half of 2015). In turn, GFCF in transport equipment

**Chart 6.5** • Contributions to the private consumption real growth rate | Year-on-year growth, in percentage, and contributions, in percentage points; quarterly values




Sources: *INE* and Banco de Portugal calculations.

**Chart 6.6** • Sales of light passenger vehicles | Thousands of vehicles; annual values




Sources: ACAP and Banco de Portugal calculations.

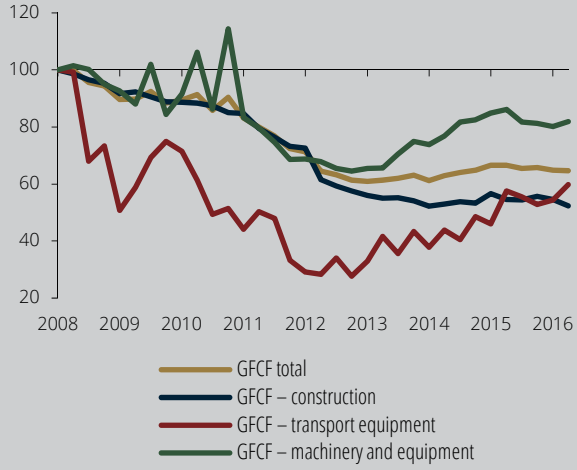
grew by 10.3 per cent in the first half of the year. Growth in this component was particularly significant in the first months of 2016, given that purchases may have been brought forward, similarly to developments in light passenger vehicles.

Against a background of high corporate indebtedness and a capacity utilisation still below pre-recession levels (Chart 6.8), the increased uncertainty, both domestic and external, which characterised the end of 2015 and the start of 2016, may have contributed to affect investment decisions over the past few quarters. In addition, the irreversibility of a large part of the purchases of physical capital may have also affected decisions by enterprises to purchase this type of assets, given the uncertainty characterising the first half of the year. Investment declined both in the private sector (business and housing) and in the public sector.

After the marked decline observed during the economic and financial crisis, GFCF has recovered relatively moderately in Portugal. This is also observable in other economies, specifically euro area economies, where the level of investment remains below that of 2008 (Chart 6.9). Against this background, while GDP in the euro area is already above its pre-crisis level, GFCF in the second quarter of 2016 stood around 12 per cent below the level seen at the start of 2008 (Section 2). Although there is no consensus on the reasons behind these developments, they are particularly negative for Portugal, not only because the drop in investment during the crisis period was relatively more marked, but also because capital *per worker* in the Portuguese economy remains at relatively low levels, compared with the euro area average.

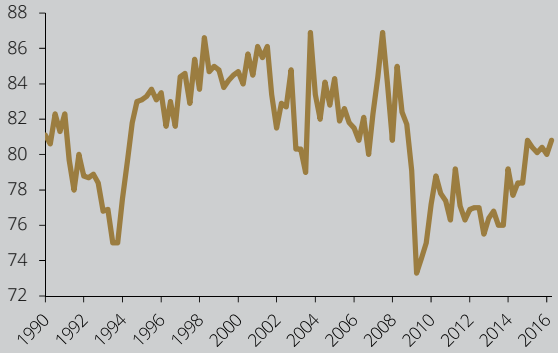
However, despite less favourable developments in GFCF in the more recent period, the share of enterprises reporting investment limitations has decreased. On the basis of information for the current year from the Investment Survey published every year in July, this share stood at 61.6 per cent in 2013, gradually decreasing to 50.2 per cent in 2016. Although the deterioration of sales prospects continues to be the main limitation to investment according to enterprises, its

**Chart 6.7** • Developments in GFCF by type of investment | 2008 Q1=100




Sources: *INE* and Banco de Portugal calculations.

**Chart 6.8** • Capacity utilisation rate | Quarterly values (seasonly adjusted); in percentage




Source: European Commission.

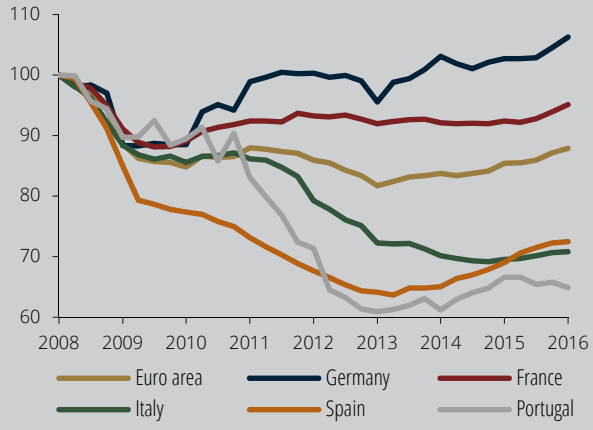
relative share has declined, due to an increase in other factors, such as return on investment and self-financing capacity (Chart 6.10). Nevertheless, microeconomic evidence suggests that past investments and the financial position of enterprises, including their level of indebtedness, have more explanatory power for developments in investment than the survey's qualitative responses (Box 'Microeconomic evidence of corporate investment decisions').

Continued deceleration in exports of goods and services observed since mid-2015, reflecting in particular the drop in exports of energy goods and non-tourism services

Exports of goods and services grew by 2.5 per cent in the first half of 2016 (6.1 per cent in 2015 as a whole), continuing the decelerating trend observed since mid-2015. These developments reflect the behaviour of the goods and services components (Chart 6.11). The decline in both exports of energy goods, in the first half of the year, and exports of non-tourism services was particularly relevant.

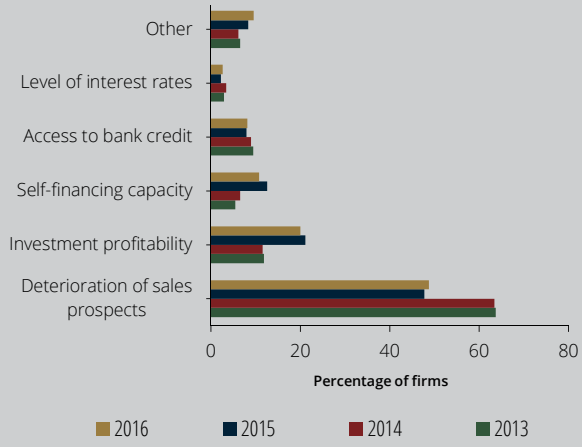
In the first half of 2016, goods exports grew by 2.7 per cent year on year in terms of volume (6.3 per cent in 2015 as a whole). The lower buoyancy of goods exports was determined by a decline in exports of energy goods. In the first half of 2016, exports of energy goods decreased by 6.8 per cent in real terms, after growing by 40.3 per cent in 2015 as a whole. Excluding energy goods, goods exports grew by 3.8 per cent (3.3 per cent in 2015 as a whole). In order to continue growing robustly, Portuguese exports will remain highly dependent on the export dynamics of younger firms in the future. These made a relatively less marked contribution in the past few years for which there is available evidence (see this Bulletin's Special Issue, entitled 'Portuguese companies in international trade: some facts about age, prices and markets').

**Chart 6.9** • Developments in GFCF in some euro area countries | 2008 Q1=100




Sources: Eurostat and *INE*.

**Chart 6.10** • Main limitation to investment | As percentage of firms that reported limitations to investment



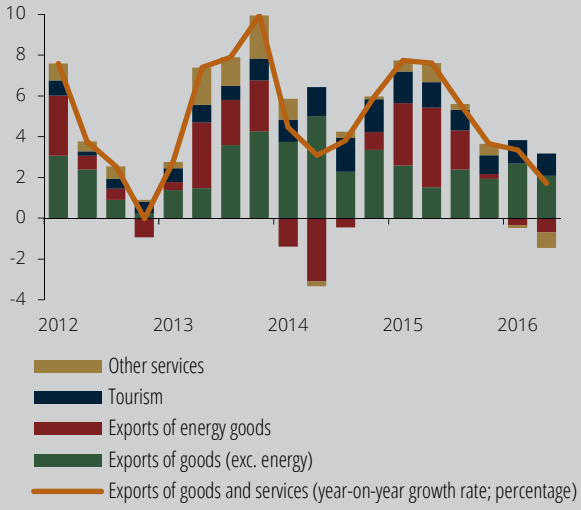

Source: *INE*.

Similarly to the past few years, the export deflator recorded a decline in the first half of 2016 (-4.5 per cent year on year), although this was less pronounced excluding fuel exports (-2.6 per cent). Against this background, when assessed in nominal terms, goods exports declined by 1.8 per cent year-on-year in the first half of 2016, reflecting to a large extent a continued trend of decline in exports to extra-EU markets, in particular Angola and China (Chart 6.12).[50] The contribution of exports to Angola and China to growth in nominal goods exports in the first half of 2016 stood at -1.9 p.p. and -0.7 p.p., respectively, declining by 44.5 and 36.4 per cent year on year. By product, in addition to the strong drop in sales of fuels, exports of light passenger vehicles also declined year on year, in particular to Germany. These developments largely reflect the temporary shutdown of an important production unit for these goods in the first half of 2016. In contrast, clothing and footwear exports remained buoyant.

Services exports grew by 2.1 per cent in terms of volume in the first half of the year compared with the same period in 2015 (5.7 per cent in 2015 as a whole). The loss of momentum in services exports reflects developments in exports of non-tourism services. In the first half of the year, this component dropped by 2.7 per cent in terms of volume, compared with the first half of 2015. The decline in passenger air transport services and other services provided by enterprises largely contributed to this.

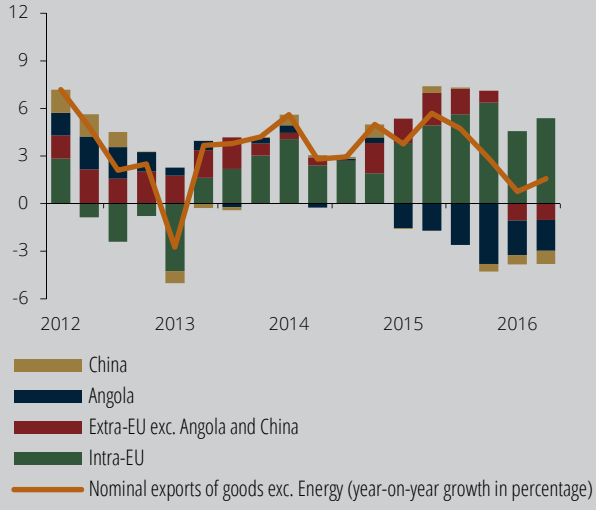
By contrast, exports of tourism services continue to be highly buoyant, growing by 8.3 per cent in terms of volume in the first half of 2016, compared with the same period in 2015. Developments in tourism exports are consistent with growth in nominal tourism revenue,

**Chart 6.11** • Contributions to the real growth rate of total exports | Year-on-year growth, in percentage, and contributions, in percentage points; quarterly values




Source: *INE* (International trade).

**Chart 6.12** • Contribution from main markets to growth in nominal goods exports excluing fuel | Year-on-year growth, in percentage, and contributions, in percentage points; quarterly values




Sources: *INE* (International trade) and Banco de Portugal calculations.

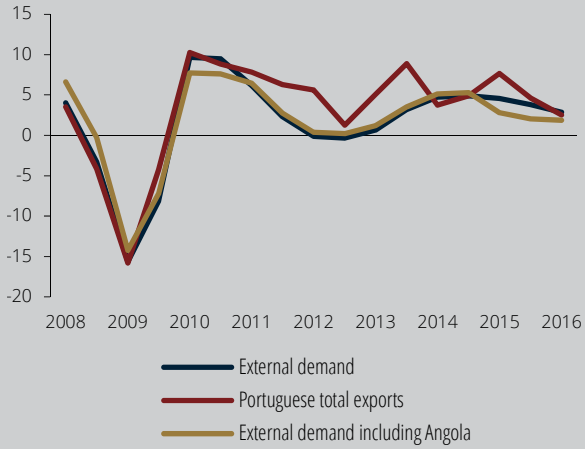
which increased by 9.2 per cent in the first half of 2016 year on year, and the strong buoyancy in the number of overnights by non-residents in Portuguese hotels. In the first half of 2016, this last indicator grew by 12.4 per cent (7.1 per cent in 2015 as a whole).

Growth of exports of goods and services in terms of volume in the first half of 2016 was lower than growth in the external demand indicator typically used by Banco de Portugal, calculated on the basis of Eurosystem data (Chart 6.13). This indicator does not reflect the relative importance of external trade with Angola in the case of the Portuguese economy. An estimate of external demand taking into account the effective share of Angola and developments in its imports shows lower growth in external demand for Portuguese goods and services in the more recent period, resulting in a slight gain in export share in the first half of 2016.

## Deceleration in imports of goods and services in the first half of the year, particularly in imports of energy goods, which declined markedly

In the first half of 2016, imports of goods and services grew by 2.9 per cent in real terms (8.2 per cent in 2015 as a whole). These developments are the result of a deceleration in imports of both goods and services (Chart 6.14). In the first half of 2016, goods imports grew by 3.3 per cent year on year (8.5 per cent in 2015 as a whole), while services imports increased by 0.4 per cent (6.7 per cent in 2014 as whole). Growth in imports of goods and services remained higher than growth in import-weighted demand, resulting in a further increase in the penetration rate of imports, although to a lesser extent than in recent years.

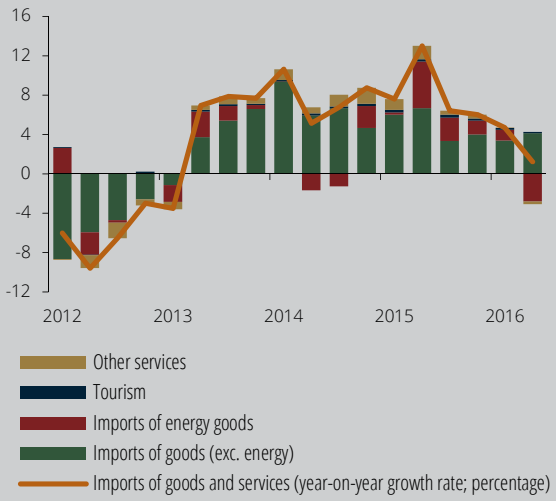
**Chart 6.13** • Exports of goods and services and external demand | Half-yearly values; year-on-year, in percentage




Sources: *INE*, IMF, European Central Bank and Banco de Portugal calculations.

Note: The indicator of external demand adjusted by the importance of foreign trade with Angola corresponds to the weighted average (weights based on exports) between the indicator of external demand computed by the ECB and Angola's total volume of imports of goods and services. These calculations use the IMF's projections (*Word Economic Outlook*) for the growth in volume of Angola's imports in 2016.

**Chart 6.14** • Contributions to the real growth rate of total imports | Year-on-year growth, in percentage, and contributions, in percentage points; quarterly values




Sources: *INE* (International trade) and Banco de Portugal calculations.

In the first half of 2016, imports of energy goods declined markedly year-on-year (6.3 per cent), after growing considerably in 2015. Excluding energy goods, goods imports grew by 5.3 per cent in the first half of 2016.

Continuing the trend observed since the start of 2013, the import deflator declined further in the first half of 2016 (-4.5 per cent year on year), although to a lesser extent when excluding fuel exports (-2.6 per cent). In nominal terms, goods imports declined by 1.4 per cent year on year in the first half of 2016. By product, in addition to the strong decrease in fuel purchases, imports of base metals and chemicals declined year on year.[51] Similarly to exports, the lower buoyancy of goods imports was particularly evident in extra-EU markets. In the first half of 2016, imports of goods from these countries decreased by 8.8 per cent in nominal terms, compared with the same period in 2015, particularly imports from Angola, which declined by 49.6 per cent.

Less buoyant services imports in the first half of 2016 reflect developments in the non-tourism services component. In nominal terms, imports of non-tourism services declined by 1.6 per cent in the first half of 2016, compared with the same period in 2015. In particular, imports of services in maritime cargo transport and passenger air transport recorded a decline. By contrast, tourism services imports remained buoyant.

## Box 6.1 | Microeconomic evidence of corporate investment decisions

We can gain some insight into private investment's slow recovery by looking in more detail at the micro data behind the Investment Survey conducted by Statistics Portugal from 2010 to 2015.[52] The survey covers 4,113 firms of which 1,499 responded in all semesters. Investment is defined as gross fixed capital formation and comprises mostly of tangible and intangible fixed assets, excluding other possible investment costs such as maintenance and financial assets.

Given the large representation of medium and large firms in the sample, the results are necessarily biased.[53] While 55 per cent of the sample is made up of large or medium firms, these firms constitute 2.35 per cent of firms reporting to IES in the same period.[54] Consequently, an average of around 80 per cent of firms reported to the Investment Survey that they invest each year, compared with 6 per cent of total enterprises reporting annually to IES (however, there are important differences between these two surveys the concept of investment and reporting requirements in IES are much less stringent for smaller firms). Despite this bias in the survey sample towards large firms, the correlations described below draw important conclusions on corporate investment decisions. Further, given that most of the investment is carried out through the larger firms in the economy,[55] the results are also useful to shed more light on the aggregate dynamics of investment.

Looking at the trend in investment growth granularly in Figure 1, we find that since 2013 the mass around zero has been increasing substantially. While this trend is observed across the sample, it is especially pronounced for micro and small firms, with respectively 45.1 per cent and 32.9 per cent of those firms reporting no change in investment levels from 2013 to 2014. This implies that firms are maintaining gross investment at 2011-2012 levels, when investment dropped markedly, within a macroeconomic context marked by a recession.

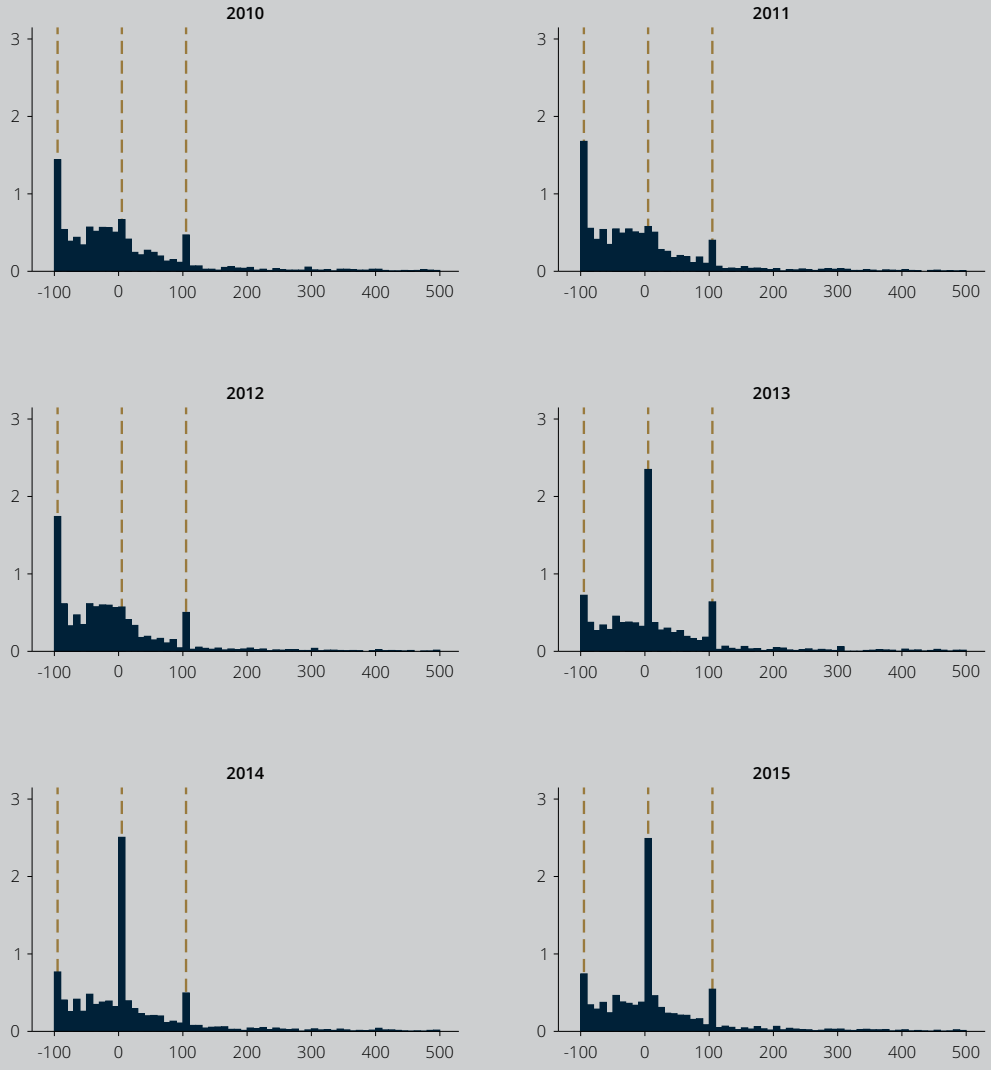
The survey includes several qualitative questions that allow us to better characterize the reasons underlying these investment dynamics. To further understand why some firms invest while others do not, the probability that a firm will invest in the next year was estimated using a logit model including size, industry, and year fixed effects. The analysis was carried out on the whole sample (all firms 2010-2015), as well as for sub-samples of large, medium, and small firms The dataset combines anonymized information from the Investment Survey and the IES data jointly provided by Statistics Portugal. Estimated marginal effects are presented in Table 1.[56]

We find, first of all, that investment decisions persist over time. That is, a firm that invested in the previous year has a higher probability of investing in the current year. Regarding quantitative information based on IES, firms with higher earnings and more fixed assets (which may be an indicator of previous investments) are more likely to invest. There is also some weak evidence that firms with larger indebtedness levels are less likely to invest: this may be in part due to the biased nature of our sample, as larger firms are less likely to suffer from debt overhang.

Looking at the limitations to investment cited in the survey,[57] we find that firms that mention poor access to bank credit are consequently less likely to invest, although this effect is only significant for larger firms. Medium sized firms who referenced their lack of access to capital markets as a limitation are slightly less likely to invest; they are also the only sub-group for whom capital is a positive and statistically significant variable for explaining investment. Around sixty percent of firms surveyed every year cite that poor sales outlook is a limitation to investment, however we do not find that it is statistically significant in explaining the decision to invest except for small firms.

For a few limitations such as lack of qualified personnel and high interest rate we find a positive marginal effect on investment. It is important to note that these limitations have a subjective nature; it does not imply that a firm faces an objectively higher interest rate than others, but that the firm perceives the interest rate it faces limits its investment plans. As these limitations refer to specific elements of an investment project, the positive coefficient may be because a firm citing these restrictions already has a project it wishes to implement in mind and may end up implementing it in any. In other words, citing these limitations is a signal that the firm is seriously considering an investment and thus is more likely to invest *a priori*.

**Chart 1** • Evolution of the distribution of firms according to investment growth (in percentage) | Density




Sources: National Statistics and Banco de Portugal.

**Table 1** • Marginal effects on the probability of investing

| | All Firms | | Large Firms | | Medium Firms | | Small and Micro Firms | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (1) | (2) | (1) | (2) | (1) | (2) |
| Reported investment, t-1 | 0.241*** | 0.201*** | 0.139*** | 0.123*** | 0.193*** | 0.150*** | 0.348*** | 0.298*** |
| EBITDA, t-1, | 0.185*** | 0.142*** | 0.104** | 0.098** | 0.130*** | 0.090** | 0.324*** | 0.251** |
| Fixed Assets, t-1 | 0.079*** | 0.088*** | 0.066* | 0.065* | 0.052* | 0.041 | 0.054 | 0.089** |
| Total Debt, t-1 | -0.025 | -0.034* | -0.022 | -0.023 | 0.012 | 0.010 | -0.038 | -0.056 |
| Capital, t-1 | 0.015 | -0.002 | -0.010 | -0.017 | 0.052 | 0.054* | 0.057 | 0.009 |
| Working capital, t-1 | 0.012 | 0.024 | -0.002 | 0.004 | -0.015 | -0.021 | 0.017 | 0.046 |
| Limitation: no production capacity | 0.006 | | 0.025 | | 0.002 | | 0.000 | |
| Limitation: poor sales outlook | -0.007 | | -0.004 | | 0.011 | | -0.029** | |
| Limitation: no qualified personnel | 0.069*** | | 0.041 | | 0.048 | | 0.122*** | |
| Limitation: high Interest rate | 0.031*** | | 0.044** | | 0.008 | | 0.052** | |
| Limitation: uncertain return | 0.012 | | 0.009 | | 0.013 | | 0.010 | |
| Limitation: unable to self-finance | 0.021** | | 0.009 | | 0.001 | | 0.056*** | |
| Limitation: no bank credit | -0.022** | | -0.039*** | | -0.010 | | -0.011 | |
| Limitation: poor access to capital markets | -0.016 | | 0.051 | | -0.066* | | -0.023 | |
| Determinant: demand level | | -0.011*** | | -0.006 | -0.026*** | -0.007* | | -0.020*** |
| Determinant: profits & financing | | -0.007** | | -0.001 | -0.012*** | -0.007 | | -0.009 |
| Determinant: technical factors | | -0.021*** | | -0.011*** | -0.040*** | -0.017*** | | -0.030*** |
| Observations | 10,080 | 9,831 | 2,549 | 2,471 | 3,317 | 3,239 | 3,961 | 3,876 |
| Pseudo R2 | 0,3609 | 0,4043 | 0.436 | 0.457 | 0.348 | 0.402 | 0.254 | 0.299 |

Note: *, **, *** means the effects are statistically significant at the 10, 5 and 1 per cent level respectively.

The investment survey also asks firms about three groups of factors influencing investment. These factors are demand (such as capital utilization rate and sales prospects), financial resources or expected profits (availability of resources and investment opportunities, return on investment),

and technical factors (technological development and conditions, labor availability). Firms respond annually on a five-point scale from very stimulating (1) to very limiting (5). When we include these variables in the regressions we see that as the factors become relatively more limiting, the probability of investment decreases. Disaggregating by firm size categories, we find that technical factors are strongly significant across all firm sizes. While demand factors are not statistically significant for large firms, they are marginally relevant for medium firms and strongly significant for small firms.

Across the board, firms' financial and accounting ratios seem to do a better job in explaining investment dynamics than qualitative answers to a survey. The main factors conditioning firms' ability to start new investments are associated with technical factors, as well perceived lack of demand.

# 7. Prices

## Stabilization of the inflation rate in the first half of 2016, against a background of virtually nil inflation in the euro area

In the first half of 2016, the year-on-year inflation rate in Portugal, as measured by the Harmonised Index of Consumer Prices (HICP), was 0.5 per cent (Table 7.1). This represents a virtual stabilisation of the inflation rate compared to the previous year, following the increase registered from 2014 to 2015. Inflationary pressures remain low, both domestically – due to low wage pressures – and at the external level – due to the stabilisation in oil prices and the fall in import prices. In the euro area, the year-on-year HICP inflation rate has also remained stable since the first half of 2015, at a value close to zero.

The positive differential between the year-on-year inflation rate in Portugal and in the euro area has thus persisted, a phenomenon observed since the beginning of the preceding year (Chart 7.1). This differential is essentially due to the energy goods component, with a contribution of almost 0.5 percentage points (p.p.) (Chart 7.2). Whilst in Portugal there was a year-on-year reduction in energy goods prices of approximately 3.3 per cent in the first half of 2016, in the euro area, that fall was 7.6 per cent. The services component also contributed positively to the aforementioned differential. Conversely, non-energy industrial goods in Portugal registered a price change lower than that of the euro area, against a background of recovery in the competitiveness of the Portuguese economy in the tradable goods sector, albeit to a lesser extent than in previous years.

**Table 7.1** • HICP inflation – Main components | In percentage

| | Weights | Annual rate of change | | | Year-on-year rate of change | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2013 | 2014 | 2015 | 15 H1 | 15 H2 | 16 H1 | 15 Q3 | 15 Q4 | 16 Q1 | 16 Q2 |
| Total | 100.0 | 0.4 | -0.2 | 0.5 | 0.4 | 0.6 | 0.5 | 0.8 | 0.5 | 0.4 | 0.5 |
| Total excluding energy | 91.9 | 0.6 | 0.0 | 0.8 | 0.7 | 1.0 | 0.8 | 1.1 | 0.9 | 0.8 | 0.9 |
| Total excluding unprocessed food and energy | 81.5 | 0.4 | 0.2 | 0.7 | 0.6 | 0.8 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 |
| Goods | 57.2 | 0.0 | -1.1 | -0.1 | -0.3 | 0.1 | -0.3 | 0.3 | -0.1 | -0.2 | -0.3 |
| Food | 24.0 | 2.3 | -0.7 | 1.5 | 1.3 | 1.7 | 0.5 | 2.2 | 1.1 | 0.4 | 0.6 |
| Unprocessed food | 10.4 | 2.6 | -2.1 | 1.9 | 1.6 | 2.3 | 0.8 | 3.1 | 1.4 | 0.1 | 1.4 |
| Processed food | 13.5 | 2.0 | 0.4 | 1.2 | 1.2 | 1.2 | 0.3 | 1.5 | 0.9 | 0.5 | 0.1 |
| Industrial | 33.3 | -1.5 | -1.4 | -1.3 | -1.5 | -1.1 | -0.9 | -1.2 | -1.0 | -0.7 | -1.1 |
| Non-energy | 25.2 | -1.5 | -1.4 | -0.7 | -1.0 | -0.5 | 0.0 | -0.6 | -0.4 | 0.2 | -0.2 |
| Energy | 8.1 | -0.7 | -1.5 | -3.7 | -3.9 | -3.5 | -3.3 | -3.7 | -3.3 | -3.0 | -3.6 |
| Services | 42.8 | 1.1 | 1.1 | 1.4 | 1.3 | 1.4 | 1.5 | 1.5 | 1.4 | 1.4 | 1.7 |
| *Memo items:* | | | | | | | | | | | |
| Contribution of administered prices (in p.p.) | – | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 |
| Contribution of taxes (in p.p.) | – | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 |
| Consumer Price Index (CPI) | – | 0.3 | -0.3 | 0.5 | 0.3 | 0.7 | 0.5 | 0.8 | 0.6 | 0.5 | 0.5 |
| HICP – Euro Area | – | 1.4 | 0.4 | 0.0 | -0.1 | 0.1 | 0.0 | 0.1 | 0.2 | 0.0 | -0.1 |

Sources: Eurostat and *INE*.

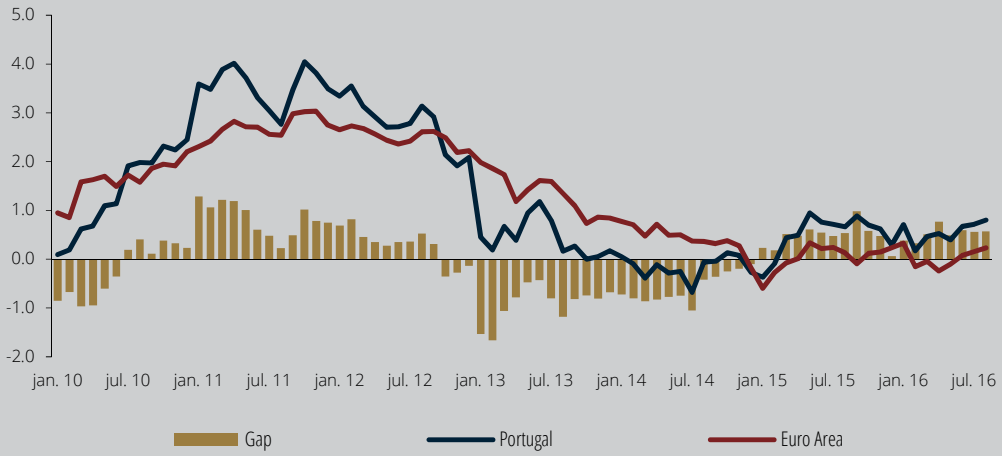
## Inflation rate strongly underpinned by services prices

The year-on-year rate of change in services prices was 1.5 per cent in the first half of 2016, corresponding to a slight increase in comparison to the previous year and to a contribution of 0.7 p.p. to the inflation rate (Chart 7.3). This price increase was essentially due to contributions of accommodation prices (0.4 p.p.) and financial services (0.3 p.p.), in line with the dynamics observed since mid-2014. These developments came against a background of an increasingly dynamic tourism sector and a sustained increase in the price of banking services. Also noteworthy, albeit to a lesser extent, is the contribution of restaurants and cafés (0.2 p.p.) and telephone and telefax services (0.2 p.p.).

## Energy goods prices contribute negatively to the inflation rate, in a context of a marked fall in oil prices and an increase in the tax on oil products

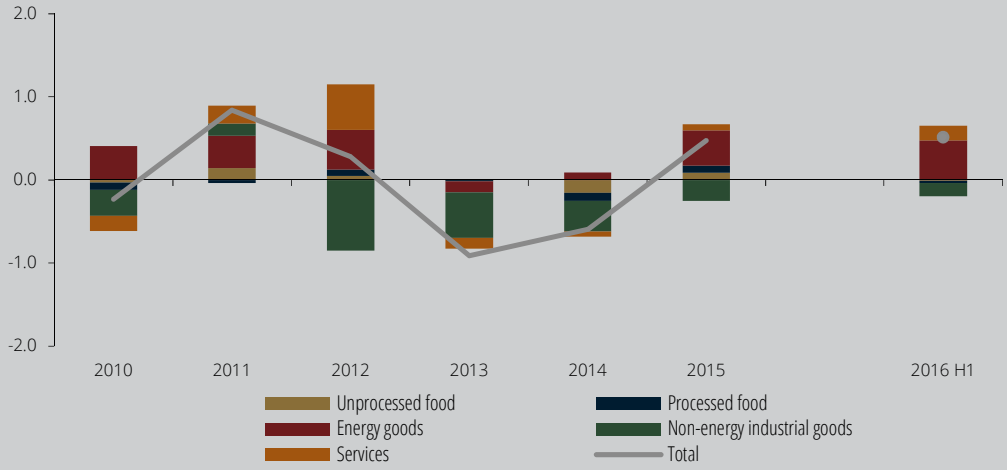
Energy goods prices declined 3.3 per cent in the first half of 2016 in year-on-year terms, against a

**Chart 7.1 •** HICP inflation in Portugal and in the Euro Area | Year-on-year rate of change, in percentage




Sources: Eurostat and *INE*.

**Chart 7.2 •** Contributions to the gap in HICP inflation between Portugal and the Euro Area | In percentage points




Sources: Eurostat and *INE*.

background of a strong fall in oil prices, contributing -0.3 p.p. to the inflation rate. However, as in 2015, this fall was once again below that registered in the euro area.

Changes in pre-tax fuel prices largely reflected the fall in oil prices, with developments in final prices being especially influenced by the increase in the tax on oil products, which took place in February 2016 (Charts 7.4 and 7.5). This contrasts with previous year developments, in which the dynamics in fuel prices reflected an increase in refining margins. Between the first half of 2015 and the first half of 2016, indirect taxation contributed 2.3 p.p. to the rate of change of energy goods prices.

Furthermore, the contribution of electricity and gas to developments in energy goods prices was around 0.9 and -0.9 p.p. respectively.

## Reduced contribution of non-energy industrial goods prices and food prices to the increase in HICP

The rate of change in non-energy industrial goods prices was virtually nil in the first half of 2016, which

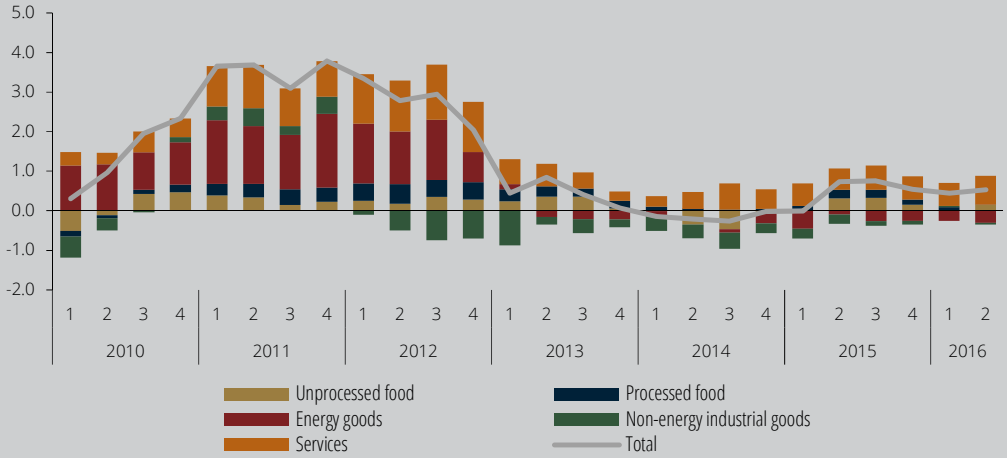
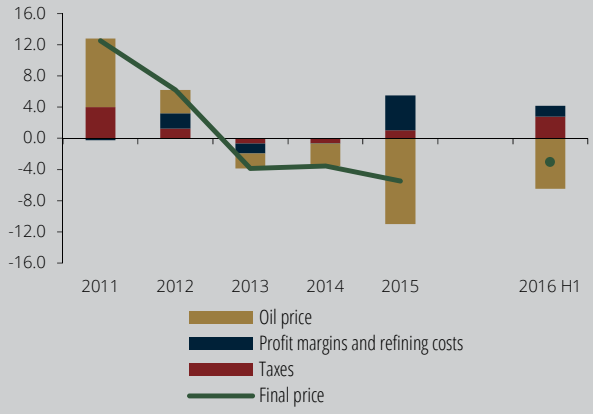



**Chart 7.3** • Contributions to the year-on-year HICP inflation | In percentage points

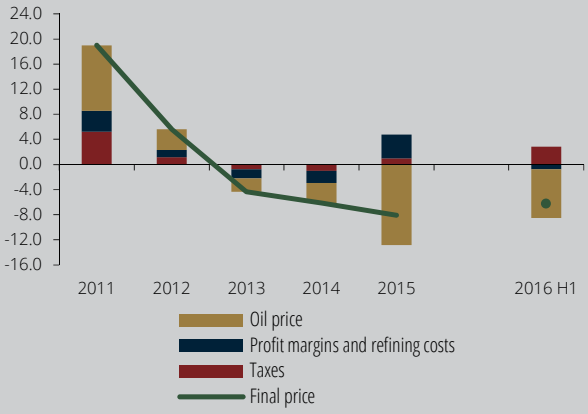
Source: *INE*.

**Chart 7.4** • Contributions to the year-on-year rate of change of petrol prices | In percentage points




Sources: ECB and Directorate General for Energy and Geology.

**Chart 7.5** • Contributions to the year-on-year rate of change of diesel prices | In percentage points




Sources: ECB and Directorate General for Energy and Geology.

compares with -1 per cent and -0.5 per cent in the first and second halves of 2015 respectively. This confirms the mitigation of the fall in this component's prices that has been recorded since 2012.

Processed food prices registered a year-on-year rate of change of 0.3 per cent, corresponding to a decrease of 0.9 p.p. in comparison with 2015. This change is largely explained by tobacco prices, which decelerated, even without taking into account the impact of the increase in taxation. In turn, the year-on-year rate of change of unprocessed food prices was 0.8 per cent in the first half of 2016, which compares with 1.6 per cent and 2.3 per cent in the first and second halves of 2015 respectively.

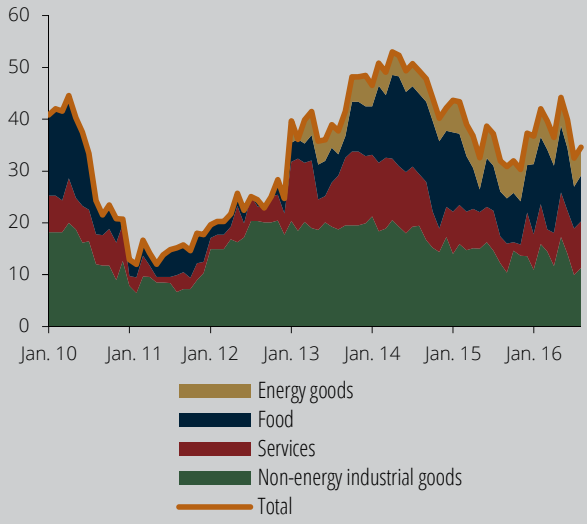
## Stabilisation in the share of components with negative price changes

The stabilisation of the inflation rate reflected a stabilisation in the share of components with negative price changes at around 39 per cent in the first half of 2016, identical to that registered in the same period of 2015 (Chart 7.6). The major contribution to this figure comes from non-energy industrial goods (13.5 p.p.) and food (12.5 p.p.). Negative year-on-year price changes in the first half of 2016 tended to be concentrated in the same sub-components that had registered negative year-on-year price changes in the first half of 2015 (Chart 7.7), with the correlation between the rates of change in prices in the two periods in the region of 60 per cent.

## Stable inflation expectations throughout the first half of 2016 and expected acceleration between 2016 and 2017

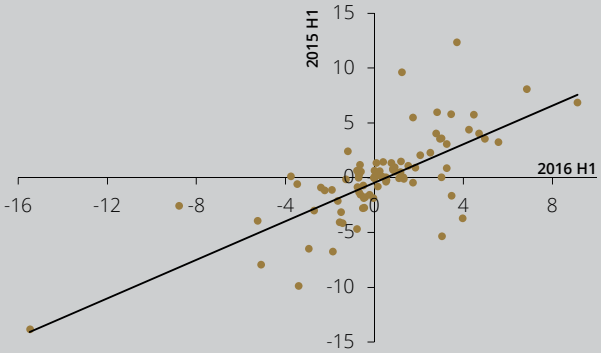
Inflation expectations published by Consensus Economics for the current year have remained relatively stable, at around 0.6 per cent throughout the first half of 2016, in line with the average observed inflation (Chart 7.8). These developments contrast with successive upward revisions of inflation expectations in 2015, following a period between 2012 and 2015 mostly characterised by downward revisions. Inflation expectations for the following year also

**Chart 7.6** • Total weight of HICP items with a negative year-on-year rate of change | In percentage




Sources: *INE* and Banco de Portugal.

**Chart 7.7** • Scatter plot of the year on-year price change of HICP items | In percentage



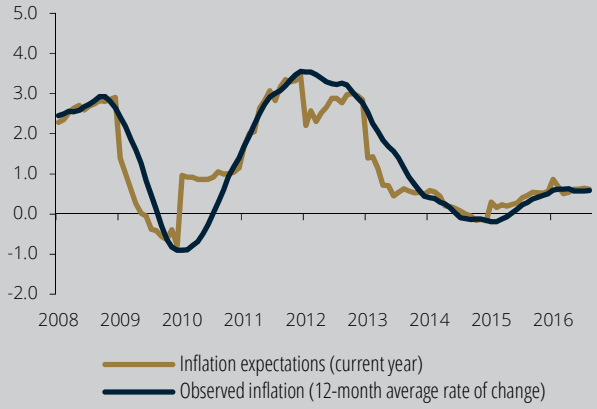

Sources: *INE* and Banco de Portugal.

remained relatively stable during the first half of 2016, at around 1.2 per cent, thus implicitly incorporating an expectation of price acceleration between 2016 and 2017 (Chart 7.9).

## Acceleration of the GDP deflator greater than that of the HICP, in a context of improved terms of trade

In the first half of 2016, the GDP deflator continued to record a year-on-year rate of change above that of the HICP, a phenomenon which began in the second half of 2012 (Chart 7.10). As Portugal is a net importer of energy goods, the fall in oil prices observed over the past few years has had a positive effect on terms of trade. This fact is reflected in the different developments shown by the HICP and the GDP deflator, given that the former is directly affected by changes in import prices, whilst the latter reflects only on the prices of internally produced goods.

**Chart 7.8** • Inflation expectations and observed inflation | In percentage




Sources: Consensus Economics and *INE*.

**Chart 7.9** • Inflation expectations for current and upcoming year | In percentage


Source: Consensus Economics.

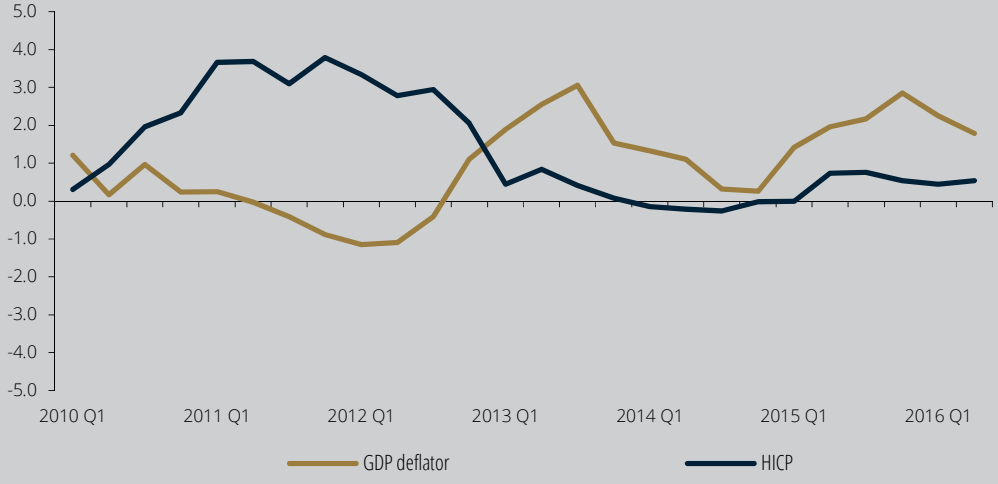



**Chart 7.10** • Year-on-year rate of change of HICP and of GDP deflator | In percentage

Source: *INE*.

# 8. Balance of payments

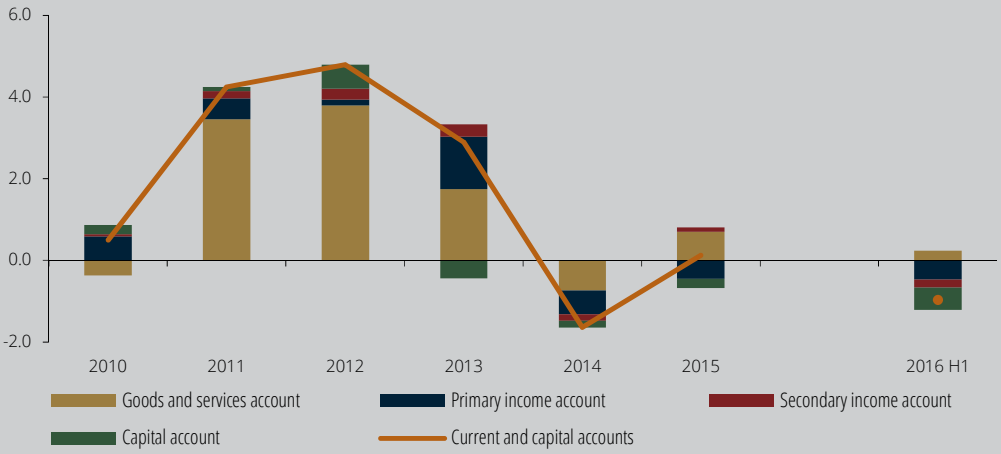
## Increase in net borrowing in the first half of 2016

In the first half of 2016, net borrowing, as measured by the combined current and capital account deficit, was 1.0 per cent of GDP. This figure represents a reduction of nearly 1 percentage point relative to the first half of 2015, when net borrowing was virtually nil. Over the whole of 2015, the Portuguese economy's net lending capacity was 1.7 per cent of GDP.

The increase in net borrowing in the first half of 2016, in comparison to the same period a year earlier, largely reflects developments in the primary income account and in the capital account (Chart 8.1). The deterioration in the primary income deficit is mainly due to the increase in the profitability of foreign direct investments in Portugal. The reduction in the capital account balance is the result of a lower allocation of Community funds to ultimate beneficiaries, which could be related with the transition between EU framework programmes. The secondary income account balance also fell, albeit to a lesser extent, due to the fall in emigrant remittances and other current transfers. Conversely, the goods and services account improved slightly, largely because of the fall in the goods account deficit. This development is essentially based on an improvement in terms of trade, as the contribution of net exports in volume terms was negative (Chart 8.2).

In the year ending in the first half of 2016, the Portuguese economy's net lending remained unchanged when compared with the same period a year earlier, at 0.9 per cent of GDP (Chart 8.3). This figure, as in previous years, reflects the favourable performance in the second half, offsetting the deterioration registered during the first half-year. Notwithstanding, when comparing 2015 with the year ending in the first half of 2016, there is a slight fall in total investment, of 0.4 per cent, compensated for by a reduction in net capital transfers, against a background of a virtually stable domestic savings rate. In this period, general government reduced its net borrowing by approximately 1 percentage point, essentially due to financial corporations and non-financial corporations, whose net borrowing fell by 0.8 per cent (Chart 8.4).

**Chart 8.1 •** Breakdown of change in the current and capital accounts
| As a percentage of GDP




Sources: *INE* and Banco de Portugal.

Note: The value for 2016 H1 corresponds to a year-on-year change.

**Table 8.1** • Current and capital accounts | As a percentage of GDP

| | 2012 | 2013 | 2014 | 2015 | 2015 H1 | 2016 H1 |
|---|---|---|---|---|---|---|
| Current and capital accounts | 0.3 | 3.2 | 1.5 | 1.7 | -0.1 | -1.0 |
| Current account | -1.8 | 1.5 | 0.1 | 0.4 | -1.3 | -1.7 |
| Goods and services account | 0.1 | 1.9 | 1.1 | 1.8 | 0.9 | 1.1 |
| Goods | -5.5 | -4.7 | -5.5 | -5.1 | -4.9 | -4.5 |
| Services | 5.6 | 6.6 | 6.6 | 6.9 | 5.8 | 5.6 |
| *of which:* | | | | | | |
| Travel and tourism | 3.4 | 3.6 | 4.1 | 4.4 | 3.2 | 3.5 |
| Primary income account | -2.5 | -1.2 | -1.8 | -2.3 | -2.7 | -3.2 |
| Secondary income account | 0.6 | 0.9 | 0.7 | 0.8 | 0.6 | 0.4 |
| *of which:* | | | | | | |
| Emigrants / immigrants remittances | 1.3 | 1.4 | 1.5 | 1.5 | 1.5 | 1.3 |
| Capital account | 2.1 | 1.6 | 1.5 | 1.2 | 1.2 | 0.7 |

Sources: *INE* and Banco de Portugal.

## Positive net external inflows in the first half of 2016

The first half of 2016 was characterised by net external inflows amounting to 1.2 per cent of GDP, which compares with net inflows of 0.2 per cent of GDP in the first half of 2015, and net outflows of 1.7 per cent in 2015 as a whole. These developments are sustained by the negative balances of other investment and direct investment, which outweighed the positive balance of portfolio investment (Chart 8.5).

In general terms, the negative balance of direct investment is largely explained by capital increases and loans to resident corporations

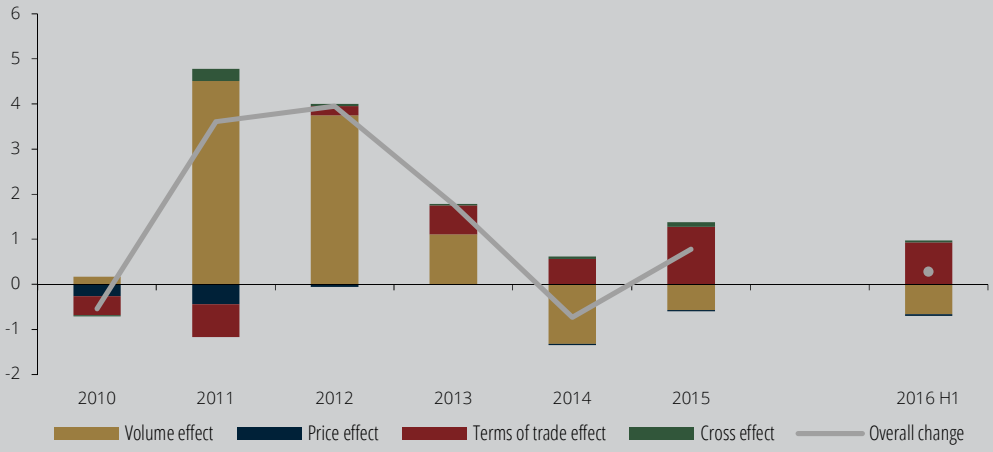


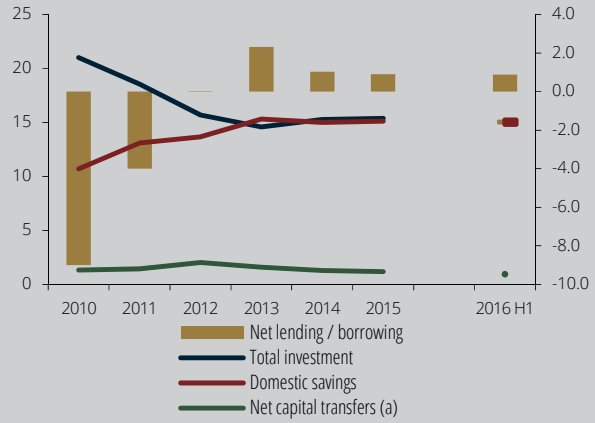

**Chart 8.2** • Breakdown of the change in the goods and service account | As a percentage of GDP

Sources: *INE* and Banco de Portugal.

Note: The value for 2016 H1 corresponds to a year-on-year change.

from direct investors. These operations affect mostly non-financial corporations and, to a lesser degree, non-monetary financial institutions. The negative balance of other investment is due to the net increase in bank deposits in resident monetary financial institutions and the increase in net liabilities of the Central Bank, which more than offset the partial advance reimbursement of IMF loans within the scope of the Economic and Financial Assistance Programme. Finally, the

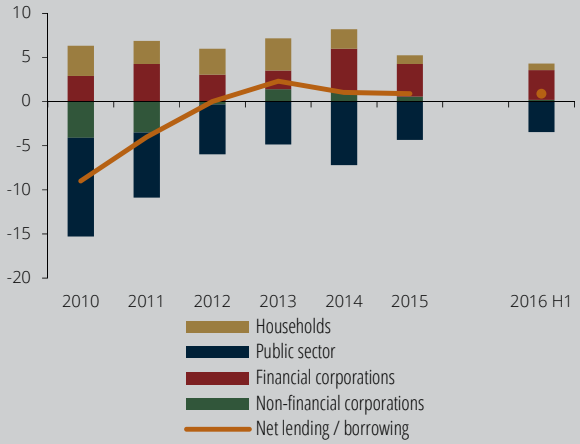
**Chart 8.3** • Net borrowing/lending | As a percentage of GDP




Source: *INE*.

Notes: Value for 2016 H1 corresponds to the year ending on the semester.
(a) Includes acquisitions less disposals of non-financial non-produced assets.

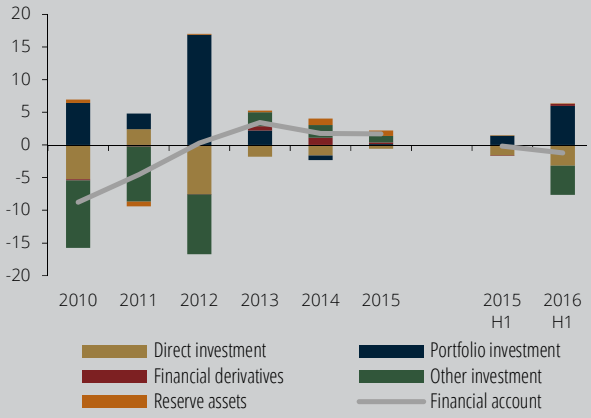
**Chart 8.4** • Net lending/borrowing by institutional sector | As a percentage of GDP




Source: *INE*.

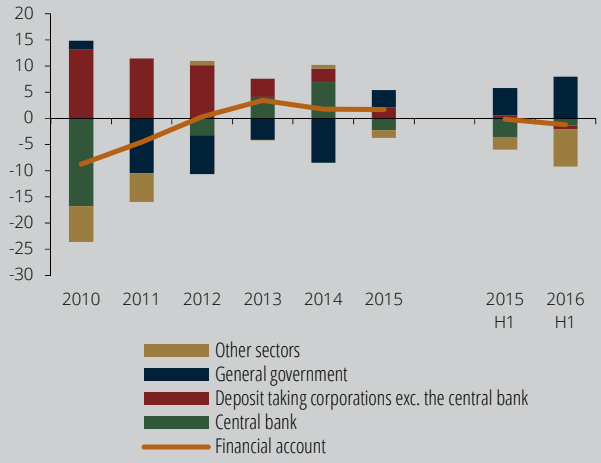
Note: Value for 2016 H1 corresponds to the year ending on the semester.

**Chart 8.5** • Financial account – balance and net change by instrument | As a percentage of GDP




Sources: *INE* and Banco de Portugal.

**Chart 8.6** • Financial account – breakdown by institutional sector | As a percentage of GDP



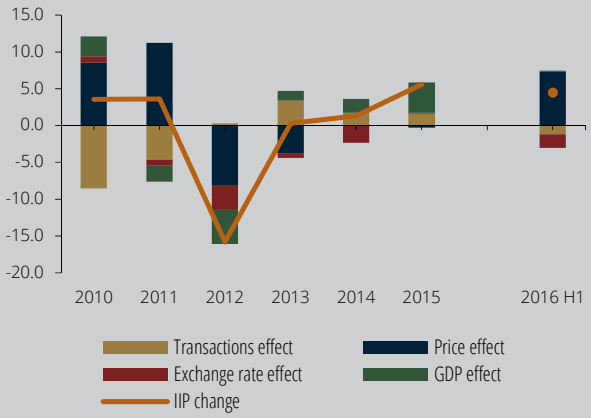

Sources: *INE* and Banco de Portugal.

positive balance of portfolio investment is the result of the repayment of government securities held by non-residents, as well as transactions of government securities between the general government and non-residents (Chart 8.6). Also noteworthy is the net disinvestment by non-residents in debt securities of other resident monetary financial institutions and the investment by those same institutions in government securities of other countries.

## Slight improvement in the international investment position, due to favourable price changes

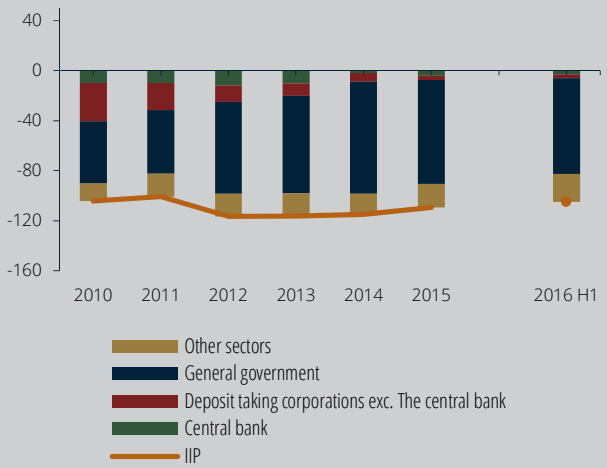
The international investment position improved in the first half of 2016, with the net debt position of the Portuguese economy in relation to the rest of the world standing at 104.9 per cent of GDP, which compares with 109.3 per cent in 2015. This improvement results to a great extent from favourable price changes (Chart 8.7), mostly affecting general government (Chart 8.8), due to the fall in the price of Portuguese public debt securities held by non-residents.

**Chart 8.7** • Change in the international investment position | As a percentage of GDP




Sources: *INE* and Banco de Portugal.

**Chart 8.8** • International investment position – breakdown by institutional sector | As a percentage of GDP




Sources: *INE* and Banco de Portugal.

## Notes

1. Note that Angola is not included in the group of countries used within the Eurosystem procedure to calculate external demand for goods and services at individual country level.

2. This reversal differs depending on the indicator. According to the indicator of the Purchasing Managers' Index (PMI), business confidence in industry and services in August fully reversed the deterioration recorded in July. The European Commission indicator shows that economic agents' sentiment in the UK, in August, recovered only partly from the fall observed in July.

3. In the *WEO October* 2016, the IMF revised the projection for GDP growth in 2017 in the UK by 1.1 p.p., to 1.1 per cent, and in the euro area by 0.1 p.p., to 1.5 per cent. In the *Consensus Forecasts*, between June and August, projections for economic growth in 2017 were revised downwards by 1.5 p.p. in the UK, to 0.6 per cent, and 0.4 p.p. in the euro area, to 1.2 per cent. The Bank of England has also significantly revised downwards the projections for economic growth in the UK, from 2.3 to 0.8 per cent in 2017, and from 2.3 to 1.8 per cent in 2018 (year-on-year growth rates in the respective fourth quarter).

4. In the EU, Passport Rights in the financial sector mean that a financial company residing in the EU may offer its services directly to any firm or consumer in the EU, with no need to establish subsidiary undertakings, request additional authorisations or comply with local regulations.

5. See, for example, Bank of England (2016), *Inflation Report August 2016*, Chapter 3, Box 'Factors affecting the prospects for long-term supply following the EU referendum'.

6. The UK's withdrawal from the EU may produce effects through other economic transmission channels – such as the decrease in migration flows, tax implications or changes in legislation, regulations or economic policy – which are also likely to be particularly felt in the UK, despite being qualitatively less evident. As to potential changes in migration flows, the likely limitation of the entry into the UK of workers from elsewhere in the EU may contribute to a reduction in labour supply and potential GDP in the UK, but this effect may be counterbalanced by higher qualification of workers migrating to the UK. At tax level, the possible decline in the UK's financial contribution to the EU will be the higher the lower the degree of integration between the two economies that results from the negotiations, in that the ensuing adverse macroeconomic scenario would have negative tax implications. The potential benefits of changes in legislation and regulations may also be softened by the need to remain close to the rules of the Single Market and safeguard access to it.

7. See '*An interpretation of the low sovereign yields in the euro area*', Special Issue, *Economic Bulletin*, December 2015. An update of the estimates presented in the article suggests that in August 2016 yields in most euro area countries were between 2.0 and 2.7 p.p. below the levels consistent with the respective macroeconomic fundamentals, absent the euro redenomination risk ('fair yields'). In the Portuguese case, such spread was around 2 p.p. in August 2016.

8. *Portuguese banking system: Latest developments* (second quarter of 2016), Banco de Portugal.

9. *Bank Lending Survey – Results for Portugal*, July 2016, Banco de Portugal.

10. *Retail Banking Markets Monitoring Report*, 2015, Banco de Portugal.

11. Credit agreements for house purchase and related are signed within the same institution and the property is used as collateral to partially or fully cover the mortgage.

12. Transferable deposits may be immediately converted into cash via cheque, payment order, debit card or a similar card, with no substantial constraint or penalisation.

13. *Financial Stability Report*, May 2016, Banco de Portugal.

14. *Retail Banking Markets Monitoring Report*, 2015, Banco de Portugal.

15. Total credit granted to non-financial corporations includes loans granted by resident banks, loans granted by non-residents, issuance of debt securities (held by residents and non-residents), trade credit (granted by residents and non-residents), household loans, and Treasury loans, the latter relevant in the case of credit granted to public enterprises.

16. Survey on the access to financing of small and medium-sized enterprises in the euro area.

17. Gattini and Hiebert (2010), 'Forecasting and assessing euro area house prices through the lens of key fundamentals', *Working Paper series No 1249* (October), ECB.

18. The hpi series has been published by Statistics Portugal (*INE*) since 2008. For estimation purposes, the series was backward projected on the basis of the *Confidencial Imobiliário* index and deflated by the private consumption deflator.

19. Other fundamentals were tested, namely the real mortgage stock, total labor force and interest rates, however the absence of a cointegrating relationship between house prices and these fundamentals or the existence of estimated regression coefficients with unexpected signs led to their exclusion.

20. ECB (2003), 'Structural factors in the EU housing markets', *European Central Bank Structural Issues Report* (March).

21. By applying unit root tests to several macroeconomic determinants and the real house price index, the null hypothesis of non-stationarity is not rejected in any case. For that purpose, augmented Dickey-Fuller tests were conducted.

22. Furthermore, the model does not exhibit residual autocorrelation as suggested by the Portmanteau test up to order 4.

23. *Retail Banking Markets Monitoring Report*, 2015, Banco de Portugal. In this box, the analysis does not differentiate between housing loans and related loans. As such, for simplification purposes, 'housing loans' refers to the aggregate that includes 'related loans'.

24. For repayments between 1 January 2009 and 30 September 2010, available data do not contain information on their underlying reasons.

25. In particular, the effect of recording as expenditure the capital injection in *Banco Efisa* and the transport companies *Carris* and *STCP* (0.1 per cent of GDP), and the effect of the conversion into equity increases of loans granted by Wolfpart to its holding *Caixa Imobiliário* (0.2 per cent of GDP).

26. Underlying the annual estimate are temporary measures, with no impact on the budget execution in the first half of the year, such as the reimbursement of part of the prepaid margins by the European Financial Stability Fund and the revenue from the concessions to *Silopor* and *IP Telecom*, which benefit the overall balance by around 0.2 per cent of GDP.

27. For a more detailed description of the rules of the Stability and Growth Pact, see *Vade Mecum on the Stability and Growth Pact*, European Commission (2016).

28. Council decisions within the scope of the EDP are usually based on a qualified majority voting, except the decisions regarding sanctions under Articles 126 (6) and 126 (8), where an reverse qualified majority is applied. The countries that signed the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, however, have committed to voting in line with the Commission's recommendations, provided that there is no qualified majority against it.

29. The structural balance refers to the headline balance adjusted for the impact of the economic cycle and of temporary measures or other one-off measures.

30. In this case, after a specified period, the Commission assesses again whether the Member State has taken effective action, as previously explained.

31. In addition, the debt ratio must comply with the debt criterion, from a forward-looking perspective, implying a decline at a satisfactory pace, based on the average values of the previous, current and following years.

32. The structural balance refers to the headline balance adjusted for the impact of the economic cycle and of temporary measures or other one-off measures.

33. This value is the product of 60 per cent and the average growth rate of nominal GDP up to 2060, calculated by the Ageing Working Group.

34. This adjustment corresponds to 33 per cent of the present value of the expected increase in ageing costs under an infinite horizon.

35. The additional effort, measured as a percentage of GDP, is calculated through a linear formula (0.024*debt/GDP-1.24).

36. In 2015 temporary emigrants continued to record significant numbers (at around 60,000 individuals), albeit less than in previous years.

37. In the official terminology adopted in the European Union, long-term unemployment covers all the unemployed for 12 months and over. For the purposes of this box, medium-term unemployed is introduced to isolate durations between 12 and 24 months.

38. European Commission (2015), 'Analytical Supporting Document Accompanying the document Proposal for a Council Recommendation on the integration of the long-term unemployed into the labour market', SWD/2015/0176 final.

39. For more information on productivity determinants, their different definitions and challenges, see Syverson (2011).

40. Dias, Marques and Richmond (2014), using other data sources, show that total factor productivity stagnated, or declined, in the period more or less since the early 2000s to at least 2009. In this box a simple labour productivity measure was used.

41. Information on GVA at current prices and respective deflators, as well as full-time equivalent employment, was collected from annual national accounts released by Statistics Portugal. 38 sectors of activity were considered for this purpose.

42. Reis (2013) suggests that, between 2000 and 2005, the sectors that presented the highest employment growth are those with lower productivity or higher price-cost margins. Reis (2015) also suggests that in some of these sectors, output growth per work hour was particularly high between 2010 and 2014, potentially contributing to a reduction of the bad reallocation of resources.

43. This dynamic is generally consistent with the analysis of the Olley-Pakes gap based on data at enterprise level (October 2015 issue of the *Economic Bulletin*). In addition, Dias, Marques and Richmond (2014) show that there was sharp deterioration in the allocation of resources across Portuguese enterprises, within each sector, during the 1996-2008 period. The results of this box are also consistent with this conclusion.

44. Quarterly national accounts report the values of gross value added at constant prices by sector at a higher aggregation level than annual national accounts. Rates of change in gross value added by industry based on quarterly national accounts (at a more aggregate level) are used to extend the (more disaggregated) series of annual national accounts.

45. Given that Social Security data only include employees, the analysis did not take into account the agriculture, forestry and fishing sector. 19 sectors of activity were considered for this purpose. Beneficiaries of the Civil Service Pension Fund belonging to public administration and the military and security forces are included in category 84 of the Portuguese Classification of Economic Activities 'Public administration and defence; compulsory social security' and beneficiaries belonging to 'Education' are included in category 85 'Education'. The analysis did not consider beneficiaries from 'Public enterprises/public limited companies with State participation' because there is no natural link to the Portuguese Classification of Economic Activities. The number of beneficiaries is calculated as an annual average, while weights are based on the December values for each year. Since the breakdown of beneficiaries by origin is not available for years 2008 to 2016, 2009 and 2015 weights are used for those years respectively.

46. In accordance with the National Accounts methodology, tax changes are only reflected in the GDP deflator and not in volume. In addition, there may be considerable changes in revenue from taxes less subsidies, as a result of changes in the composition of tax bases. These may lead to a change in taxes less subsidies in real terms that is different from changes in GDP, implying differences between growth in GDP and GVA.

47. In the first half of 2016, exports of nominal goods and services to Angola declined by 42 per cent year on year. Considering these developments and assuming that exports to Angola have an import content that is the same as average exports, it is possible to estimate the mechanical impact of this decline on nominal GDP. In the first half of 2016, total exports to Angola (goods and services), excluding import content, therefore are estimated to have made a contribution of around -0.5 p.p. to the growth of 3.0 per cent observed in nominal GDP.

48. In 2015 as a whole, *per capita* GDP in the euro area grew by 1.8 per cent, 0.3 p.p. below that of Portugal. On the basis of Eurostat estimates for population growth, in the first half of 2016, *per capita* GDP in the euro area is expected to have grown by 1.3 per cent year on year, similarly to Portugal.

49. In 2015 a decline in interest paid by households made a contribution of 0.8 p.p. to the growth of 2.5 per cent in disposable income in nominal terms.

50. In the first half of 2016, nominal extra-EU exports of goods declined by 15.9 per cent year on year. Excluding sales to Angola and China, extra-EU exports of goods declined by 8.5 per cent.

51. The year-on-year decline in imports of chemicals reflects *inter alia* a base effect associated with a significant purchase of pharmaceutical products in the first half of 2015.

52. Statistics Portugal publishes a semi-annual press release analysing the survey's results, using weights for a representative sample. The analysis of this box uses non-weighted data.

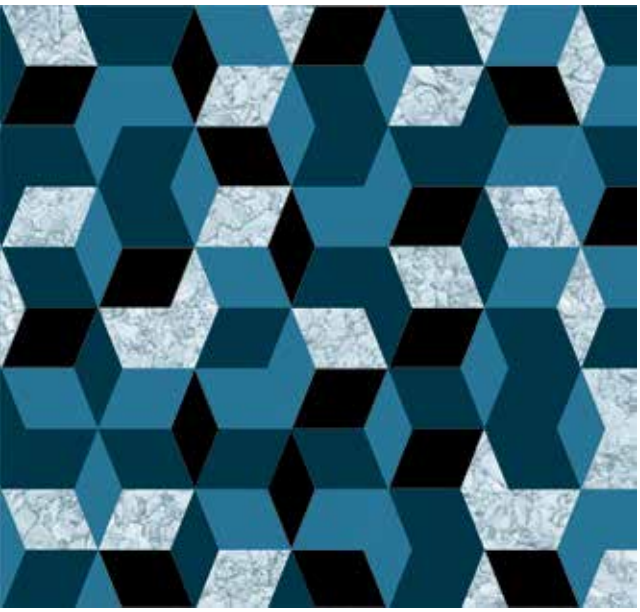
53. There are 899 enterprises with more than 200 employees, corresponding to 22.5 per cent of the sample. An exhaustive survey is conducted on large enterprises. A third of the sample is composed of medium-sized enterprises and 37.2 per cent by small enterprises. Around 300 microenterprises are also part of the survey's sample. Size classes are defined in accordance with the EU criterion: microenterprises are those which employ fewer than 10 persons and whose total assets or sales do not exceed €2 million; small enterprises are those which employ fewer than 50 persons and whose total assets or sales do not exceed €10 million; medium-sized enterprises are those which employ fewer than 250 persons and whose assets or sales do not exceed €43 million and €50 million respectively; and large enterprises are those which employ more than 250 persons and whose assets and sales exceed €43 million and €50 million respectively.

54. Simplified Corporate Information (*Informação Empresarial Simplificada*) is an annual survey aimed at all Portuguese enterprises containing detailed information on balance sheets and profit and loss accounts.

55. From among total investment expenditure reported to *IES*, an average of 65 per cent of the investment flow comes from large enterprises.

56. The dependent variable in every regression is a dummy indicating whether the enterprise reported positive investment that year. In addition to including qualitative responses in the explanatory variables, a set of variables for the balance sheet and the profit and loss account are also used as controls. All the variables (EBITDA; Fixed Assets; Debt; Capital; Current Capital) are normalised by the total value of assets in 2010 and winsorised in the 2nd percentile, according to year, size and activity sector.

57. The survey asks whether the investment made by the enterprise was limited by any factor that year, and, if so, asks enterprises to identify the main factors out of a list of possibilities. All possibilities are included except the 'Other' category.



# II
# Projections for the portuguese economy in 2016

# Projections for the portuguese economy in 2016

Projections for the Portuguese economy point to a deceleration in GDP, from 1.6 per cent in 2015 to 1.1 per cent in 2016. GDP growth in 2016 is clearly below that projected by the ECB for the euro area (1.7 per cent) and points at the maintenance of idiosyncratic structural constraints on economic growth in Portugal.

Taking into account demand components net of their import content, GDP developments in 2016 should reflect the lower contribution from domestic demand, particularly investment, while the contribution of exports of goods and services should be close to that in 2015.

In intra-annual terms, underlying the projections is an acceleration in economic activity in the second half of the year, taking into account both quarter-on-quarter and year-on-year rates of change.

## Deceleration in global demand

Projections for 2016 comprise information available up to the end of September and incorporate a set of assumptions on developments in the Portuguese economy consistent with the Eurosystem's projection exercise published in the September issue of the ECB *Economic Bulletin* (see the box entitled 'Projection assumptions').

On the basis of this background, and taking into account developments in economic indicators up to the middle of the third quarter, GDP is projected to grow by 1.1 per cent in 2016, after 1.6 per cent in 2015. This profile reflects lower contributions from private consumption, investment and total exports (Table 1 and Chart 1).

**Table 1** • Projections of Banco de Portugal for 2016
| Annual change, in percentage

| | Weights 2015 | EB October 2016 | | EB June 2016 | |
|---|---|---|---|---|---|
| | | 2015 | 2016 (p) | 2015 | 2016 (p) |
| Gross domestic product | 100.0 | 1.6 | 1.1 | 1.5 | 1.3 |
| Private consumption | 65.6 | 2.6 | 1.8 | 2.6 | 2.1 |
| Public consumption | 18.2 | 0.8 | 1.0 | 0.6 | 1.1 |
| Gross fixed capital formation | 15.3 | 4.5 | -1.8 | 3.9 | 0.1 |
| Domestic demand | 99.3 | 2.5 | 1.1 | 2.5 | 1.8 |
| Exports | 40.6 | 6.1 | 3.0 | 5.2 | 1.6 |
| Imports | 39.8 | 8.2 | 3.0 | 7.4 | 2.8 |
| Contribution to GDP growth, net of imports (in p.p.) (a) | | | | | |
| Domestic demand | | 1.1 | 0.5 | 1.1 | 1.0 |
| Exports | | 0.5 | 0.6 | 0.4 | 0.3 |
| Employment (b) | | 1.4 | 1.0 | – | – |
| Unemployment rate | | 12.4 | 11.2 | – | – |
| Current plus capital account (% of GDP) | | 1.7 | 1.3 | 1.7 | 1.9 |
| Trade balance (% of GDP) | | 1.8 | 2.1 | 1.7 | 1.6 |
| Harmonized index of consumer prices | | 0.5 | 0.7 | 0.5 | 0.7 |

Sources: Statistics Portugal and Banco de Portugal.

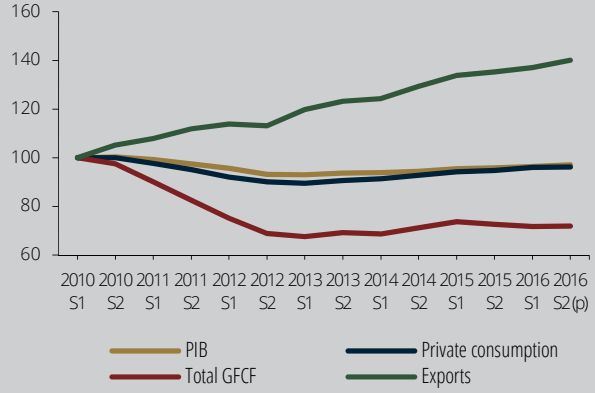
Notes: (p) – projected, (p.p.) – percentage points. For each aggregate, this table shows the projection corresponding to the most likely value, conditional on the set of assumptions considered. (a) The demand aggregates net of imports are obtained by subtracting an estimate of the imports needed to meet each component. For more information, see the Box entitled 'The role of domestic demand and exports in economic activity developments in Portugal', in the June 2014 issue of the *Economic Bulletin*. (b) Total emplyment, in number of individuals according to national accounts concept.

Private consumption is expected to decelerate from 2.6 per cent in 2015 to 1.8 per cent in 2016, although continuing to grow more than GDP. In intra-annual terms, this variable is projected to decelerate in the second half of the year, reflecting developments in the durable goods component, given that non-durable consumption should grow similarly to the first half of the year. This corresponds to a normalisation in the pace of growth in private consumption, to levels closer to trend growth in real disposable income.

In annual terms, durable goods are expected to maintain a robust growth rate, although lower than in the previous year, showing a downward profile throughout the year. This consumption component has grown markedly over the past two years, reflecting *inter alia* the implementation of spending postponed during the previous recession. The non-durable consumption component should also decelerate, although less markedly than the durable goods component.

Gross fixed capital formation (GFCF) is expected to decline by 1.8 per cent in 2016, following 4.5 per cent growth in 2015. Underlying this projection are very mixed developments by type of investment and investing sector, as illustrated by an estimate of the breakdown by institutional sector (Chart 2). The public investment component presents the most negative contribution to annual changes in GFCF, with a substantial fall being projected for this year. This component has also seen the most substantial cumulative falls since 2010. However, the rate of change in public investment reflets significant base effects (see the box entitled 'Projection assumptions'). Residential investment (and, more generally, GFCF in construction) is expected to fall by around 3 per cent, after a substantial increase in 2015 (4.3 per cent). This component was affected in the first half of the year by adverse weather conditions, which were not subsequently offset, according to the information available for the third quarter. Finally, the corporate GFCF component is likely to decrease slightly in the year as a whole, after growing in 2014 and 2015, against a background of continued constraints on corporate investment,

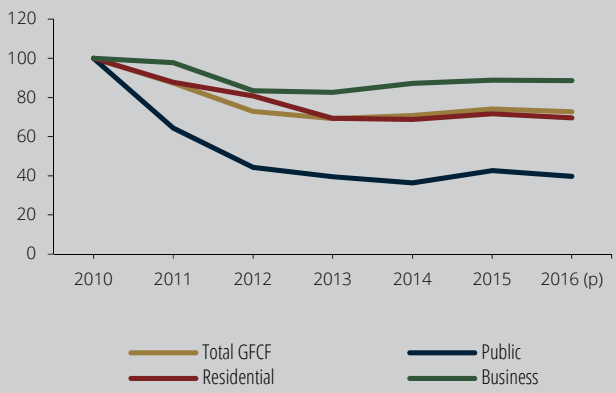
**Chart 1** • Evolution of GDP and its components | Index 1º semester 2010=100




Sources: Statistics Portugal and Banco de Portugal.

Note: (p) projected.

**Chart 2** • Breakdown of GFCF by institutional sector | Index 2010=100




Sources: Statistics Portugal and Banco de Portugal.

Note: (p) projected.

particularly high corporate indebtedness and uncertainty at internal and external level (see Section 'Demand' in this Bulletin).

Exports of goods and services in 2016 are expected to decelerate from the previous year, with projected annual growth of 3.0 per cent (6.1 per cent in 2015). Deceleration in total exports is associated with lower external demand growth (see the box entitled 'Projection assumptions') and, in particular, is likely to continue reflecting the maintenance of unfavourable behaviour of sales to a number of extra-EU countries, most notably Angola and, to a lesser extent, China.

With regard to goods, there is a fairly different pattern for energy and other goods components. Indeed, the projected deceleration for the whole year in total goods is strongly influenced by developments in energy goods, which are expected to decelerate considerably in 2016 (particularly in the first half of the year), following close to 40 per cent growth in 2015. By contrast, exports of non-energy goods are likely to grow more in 2016 than in the previous year, despite a deceleration in external demand. These developments in non-energy goods should reflect market share gains.[1]

Exports of services are projected to decelerate over the year as a whole. In fact, the highly buoyant tourism exports are expected to coexist with a fall in exports of other services, as seen in the first half of 2016.

Imports of goods and services should decelerate markedly in 2016 (from 8.2 to 3.0 per cent), reflecting a deceleration in both domestic demand and exports. This reflects, in particular, a marked deceleration in some global demand components with high import content, such as consumption of durable goods (particularly cars) and exports of energy goods.

Chart 3 illustrates gross contributions from the various demand components to GDP growth, as well as their net contributions (an estimate of associated imports is subtracted from each demand component). The net contribution from domestic demand should decrease by around 1.1 p.p. in 2015 to 0.5 p.p. in 2016. The reduction in the net contribution from domestic demand to GDP growth in 2016 was largely due to the negative change in the contribution from investment (-0.6 p.p.) and, to a lesser extent, private consumption (-0.1 p.p.). In turn, the net contribution from exports is projected to increase by 0.1 p.p. in 2016. The very different behaviour of energy goods exports (which incorporate very high import content compared with other components) explains why the contribution from exports to GDP growth diverges so substantially when measured in gross terms or net of the import content.

Turning to the main components of global demand, adjusted for an estimate of imports needed to meet such demand (Chart 4), during the recent upturn in the Portuguese economy, exports were the most buoyant demand component, making a decisive contribution to the recovery in activity since the second half of 2013. With regard to domestic demand, public consumption showed a relative stabilisation over this period while the private consumption growth profile was close to but lower than that of GDP. Investment, in turn, decreased in the second half of 2015 and in the first half of 2016, largely reversing the growth rates seen over the previous two years. Therefore, in the first half of 2016, the level of investment (net of imports) stood at only approximately 3 per cent above that seen in the first half of 2013.

## Increase in employment and reduction in the unemployment rate

From this issue of the *Economic Bulletin* onwards, Banco de Portugal will release projections for developments in employment and the unemployment rate within projection articles, in line with Eurosystem practice. For 2016, the unemployment rate is projected to decrease from

12.4 per cent to 11.2 per cent, in annual average terms. Employment is expected to increase by around 1.0 per cent in 2016 (1.4 per cent in 2015), and its rate of change, in the second half of the year, is projected to edge close to that seen in the first half.

## Maintenance of positive external balance

Current projections point to the maintenance of net lending of the Portuguese economy in 2016, measured by the combined current and capital account balance as a percentage of GDP. Nevertheless, the external surplus is expected to decline in 2016 (from 1.7 to 1.3 per cent of GDP), chiefly as a result of more adverse developments in the income account (primary and secondary income accounts), similarly to the first half of the year. The goods and services account should improve somewhat, despite less buoyant exports, reflecting a positive terms of trade effect associated with the fall in oil prices in 2016 (see the box entitled 'Projection assumptions').

In the case of the capital account, its balance as a percentage of GDP is projected to stabilise in 2016 as a whole. Underlying this projection is a recovery in the transfer of EU funds to final beneficiaries, following a fall in the first half of the year, which should be associated with the transition between EU framework programmes (see Section 'Balance of payments' in this Bulletin).

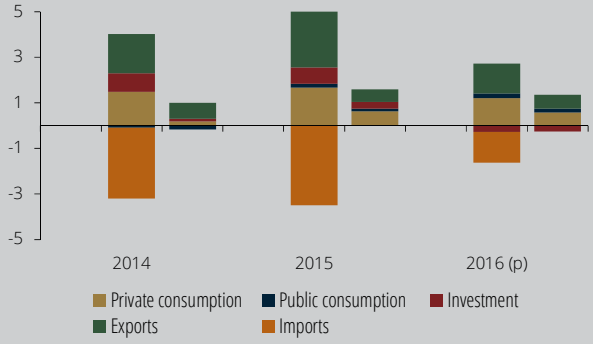
## Slight increase in inflation

Inflation, measured by the Harmonised Index of Consumer Prices, is expected to increase slightly in 2016, although remaining at relatively low levels (0.7 per cent, after 0.5 per cent in 2015).

The acceleration in prices in 2016 is likely to reflect a smaller decrease in energy goods prices (from -3.7 per cent in 2015 to -2.5 per cent in 2016) and an acceleration in prices of the non-energy component compared with the previous year (from 0.8 to 1.0 per cent).

The inflation differential between Portugal and the euro area is likely to remain positive and close to that seen in the previous year (around

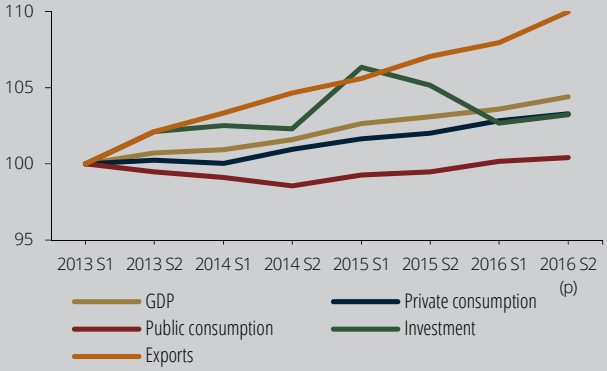
**Chart 3** • Gross and net contributions to GDP growth | In percentage points




Sources: Statistics Portugal and Banco de Portugal.

Notes (p) projected; For each year, the left-hand bar refers to gross contributions from each GDP component and the right-hand bar to the corresponding net contributions.

**Chart 4** • Evolution of GDP and its components net of imports




Sources: Statistics Portugal and Banco de Portugal calculations.

Notes: (p) – projected, (p.p.) – percentage points. The demand aggregates net of imports are obtained by subtracting an estimate of the imports needed to meet each component. See note (a) of table 1.

0.5 p.p.), based on projections released by the ECB in September. Similarly to 2015, this positive differential largely reflects a fall in energy goods prices more marked in the euro area than in Portugal. In the case of Portugal, the fall in oil prices in 2016 will not be fully reflected in developments in consumer fuel prices, given that it was counterbalanced by an increase in the tax on oil products in February 2016 (see Section 'Prices' in this Bulletin).

The acceleration in the non-energy component should reflect an acceleration in services prices. These more buoyant services prices may reflect the onset of an upward trend, albeit subdued, in a number of factors with greater impact on this sector's prices, particularly an improvement in the labour market situation, the increase in unit labour costs and high buoyancy in a number of specific services segments, such as those related to tourism. To the acceleration in the non-energy component should also contribute an interruption in non-energy industrial goods prices.

## Downward revision of activity and unchanged projections for inflation

Compared with previous projections released in the June issue of the *Economic Bulletin*, GDP growth for 2016 was revised downwards by 0.2 p.p. This lower GDP growth resulted from the downward revision of domestic demand, particularly GFCF and private consumption. In turn, exports for 2016 were revised upwards, chiefly due to greater than expected growth in exports of goods and tourism in the first half of the year. In this context, the goods and services account balance was revised upwards.

Projections for inflation in 2016 were not revised compared with the figures published in the June issue of the *Economic Bulletin*. However, the current projection points to a more marked fall in energy goods prices (in line with the downward revision of assumptions for the oil price) and more substantial growth in services prices.

## Box 1 | Projection assumptions

Table 2 presents the main assumptions of the projection exercise for the Portuguese economy, which are consistent with information underlying the ECB's projection exercise, published on 8 September.

Turning to the international framework, according to current assumptions, external demand is expected to decelerate (from 4.2 per cent in 2015 to 2.8 per cent in 2016). This profile reflects a deceleration in demand among euro area countries, while extra-euro area demand is projected to grow moderately, close to that seen in the previous year. Demand from euro area countries is expected to grow more than that from other economies. Compared with the projections released in the June issue of the Economic Bulletin, external demand for 2016 was revised downwards, in line with a downward revision of world trade.

Based on information on futures markets, oil prices in both USD and euros are projected to fall in the year as a whole (by approximately 20 per cent). Oil prices in euros are expected to be very close to those considered in the June projections.

The technical assumption for exchange rates assumes that the average levels observed in the two weeks prior to the cut-off date will remain stable over the projection horizon. After a considerable depreciation in 2015, the euro is expected to see an annual average appreciation in 2016, both in nominal terms and against the US dollar, somewhat similarly to that considered in the June projections.

Developments in the three-month Euribor rate are based on expectations implied in futures contracts. These contracts point to a negative interest rate in 2016, following a zero rate in 2015, with no changes from the levels projected in the June issue of the Economic Bulletin. Assumptions for the long-term interest rate on Portuguese public debt are based on an assumption for the implied rate, which includes an assumption for the interest rate associated with new issuances. This rate is expected to decrease slightly in 2016 from 2015.

**Table 1** • Projection assumptions

| | | EB October 2016 | | EB June 2016 |
|---|---|---|---|---|
| | | 2015 | 2016 | 2016 |
| International environment | | | | |
| World GDP | yoy | 3.0 | 2.9 | 2.9 |
| World trade | yoy | 1.9 | 1.8 | 2.5 |
| External demand | yoy | 4.2 | 2.8 | 3.7 |
| Oil prices in dollars | aav | 52.4 | 42.8 | 43.4 |
| Oil prices in euros | aav | 47.2 | 38.4 | 38.3 |
| Monetary and financial conditions | | | | |
| Short-term interest rate (3-month EURIBOR) | % | 0.0 | -0.3 | -0.3 |
| Implicit interest rate in public debt | % | 3.6 | 3.5 | 3.5 |
| Effective exchange rate index | yoy | -9.3 | 2.5 | 2.9 |
| Euro-dollar exchange rate | aav | 1.11 | 1.11 | 1.13 |

Sources: Bloomberg, ECB, Thomson Reuters and Banco de Portugal calculations.

Notes: yoy – year-on-year rate of change, aav – annual average value. An increase in the exchange rate corresponds to an appreciation. The implicit interest rate on public debt is computed as the ratio between interest expenditure for the year and the simple average of the stock of debt at the end of the same year and at the end of the preceding year.

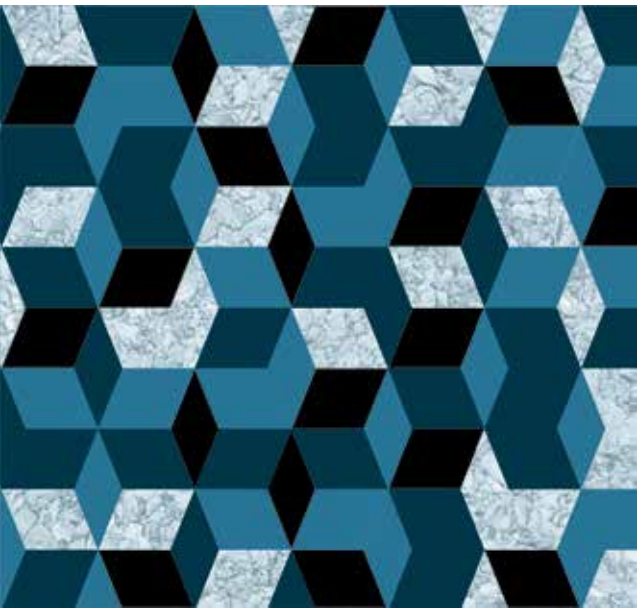
Turning to public finance variables, projections for 2016 incorporate most measures included in the State Budget for 2016, as well as the latest data on budgetary execution, in accordance with the rules applicable to the Eurosystem's projection exercises.

In turn, public consumption is projected to grow by 1 per cent in real terms in 2016. Underlying this projection is an increase in expenditure in goods and services, associated with a rise in expenditure in intermediate consumption, which is partly due to increased expenditure with public-private partnerships of the road sector. Underlying the current forecast for public consumption is an upward revision of the number of general government employees. By contrast and subject to significant uncertainty, a preliminary estimate of the impact of the reduction in the normal working hours of public employees in the second half of 2016 was taken into account. Developments in the public consumption deflator are expected to be positive and significant, as a result of the impact of the reversal in wage cuts in the general government employees.

Turning to public investment, the current estimate for 2016 points to a marked fall in real terms resulting from the base effect associated with the acquisition of real estate by Oitante registered in 2015, and to the sale of military equipment to Romania. Excluding these effects, this item is likely to stabilise.

Note

1. This market share gain is obtained taking into account the external demand indicator adjusted by the relative importance of external trade with Angola. The external demand indicator for Portugal mentioned in Box 1 and used in the scope of Eurosystem's projections does not specifically include Angola's external demand.



# III
# Special issue

Portuguese international traders: Some facts about age, prices and markets

# Portuguese international traders: some facts about age, prices and markets

## 1. Introduction

Exports are an important component of GDP and developments in this aggregate are linked to the structural conditions of the economy and its ability to compete in international markets. The analysis of aggregate exports has been complemented with firm-level studies, disclosing stylized facts that characterize the referred structural conditions. As in other economic fields, the utilization of firm-level international trade data has revealed significant heterogeneity in the universe of exporters. In addition, this type of analysis has a bearing on the interpretation of short-term economic developments and economic policy.

Economic analysis has been devoting relatively less attention to imports, but this flow also conveys relevant information both at the aggregate and firm-level perspectives. Aggregate imports are driven by domestic demand and by exports themselves, which lead to imports of intermediate goods. In fact, recent empirical international trade literature has been signalling the role of global value chains in the organization of world production, translating into a larger incorporation of foreign value added in domestic production and exports (Amador and di Mauro, 2015).

Developments in international trade have been particularly important for the Portuguese economy in recent years (Amador and Cabral, 2014). The strong deficit of the goods and services balance that prevailed for many years – related to external trade shocks such as the rise of Asian competition and the Eastern EU enlargement, macroeconomic developments associated to nominal convergence within the monetary union, as well as structural competitiveness issues – has contributed to a sharp deterioration of the international investment position. This process was recently reverted, pushing the economy towards external financing capacity, and greatly benefited from a good performance of exports. The sharp macroeconomic adjustment that took place in the context of the Economic and Financial Assistance Program of 2011-2014, with contractions of domestic demand aggregates that are sensitive to changes in income, also contributed to a correction of the trade imbalance. At present, given the high debt levels prevailing in several institutional sectors of the Portuguese economy, exports stand as a key engine for sustainable economic growth and any slowdown in their quarterly growth rates is taken as a motive for concern.

The aim of this article is to identify some stylized facts about Portuguese exporters and importers since the beginning of the 2000s, assessing whether structural changes have been taking place, ideally creating conditions for sustained positive trade balances. The identification of these stylized facts is made possible by the availability of Portuguese detailed firm-level data, covering international trade transactions in the latest decades. Although the available information includes energy goods, they tend to be analysed separately due to the volatility associated to prices. This work focuses on a relatively small subset of dimensions, namely markets, prices and some firm-specific characteristics, such as age and position in the domestic versus foreign market.

The macroeconomic analysis of exports and imports of goods is usually carried out both in nominal and real terms. Despite some differences, the path of trade flows was similar in nominal and real terms (Charts 1 and 2). The fact that firms operating in the energy sector, whose products' price fluctuations tend to be large, were excluded from the analysis contributes to this similarity. Chart 1

shows the recent evolution of Portuguese exports of goods, excluding energy, which have recorded an average nominal growth rate of 4.3 per cent on the period 2002-2014. This corresponds to a sequence of positive growth rates, interrupted in 2008-2009, which corresponds to the great trade collapse that followed the outburst of the international economic and financial crisis. The behaviour of imports has accompanied that of exports since 2002, but the sharp downturn after 2010 mirrors the contraction in domestic demand during the Economic and Financial Assistance Program. The average nominal growth rate of Portuguese imports of goods, in the period 2002-2014, was 1.5 per cent (Chart 1).

In this article, the firm-level analysis is mostly carried out in nominal terms. Nonetheless, a number of results that take advantage of information existing in the database about unit values of exported goods.

This article is organized as follows. The next section presents the database, while section 3 presents the distributions of export and import intensities for Portuguese international traders in the period 2002-2013. Section 4 discusses the structure of total exports and imports according to firms' age cohorts. Section 5 compares the variation of average unit prices for exporter-product pairs vis-a-vis the average change in prices of that same product for the

**Chart 1 •** Exports, imports and domestic demand – current prices

| Growth rate (Percentage)

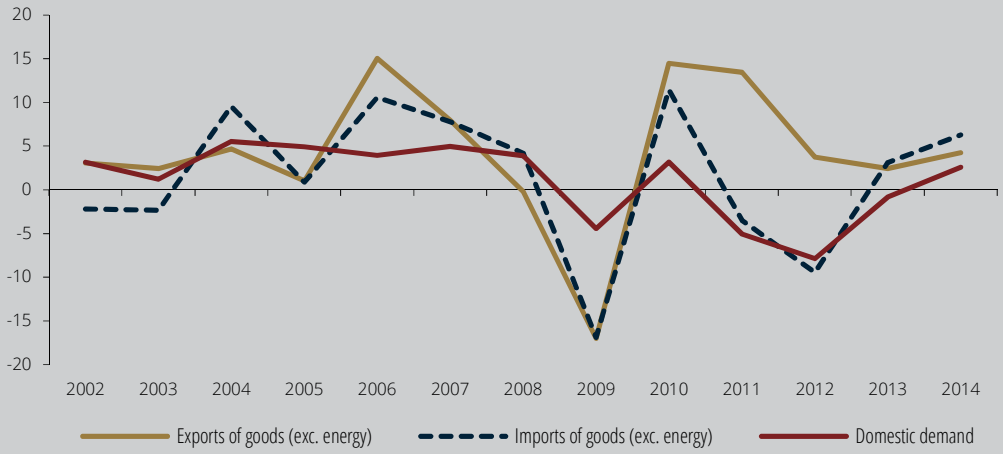
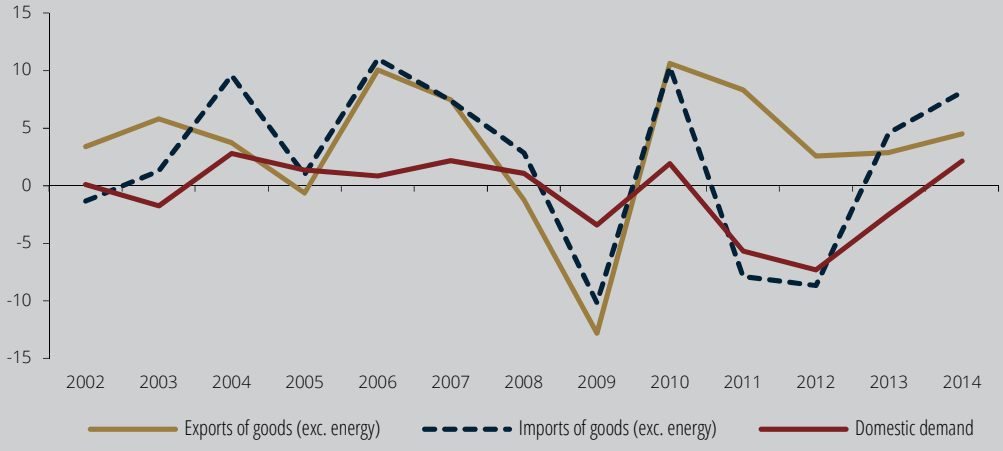



**Chart 2 •** Exports, imports and domestic demand – 2011 constant prices

| Growth rate (Percentage)




Source: Statistics Portugal (national accounts).

European Union (EU) as a whole. Section 6 examines two dimensions related to markets. Firstly, the diversification of firm's exports along destination markets. Secondly, the contribution of exporting firms with different performance in internal and external markets, with a view to assessing which group has driven total export growth. Finally, section 7 offers some concluding remarks.

## 2. Data

The data used in this special issue were taken from the Intrastat and Extrastat surveys, which collect international trade transactions of goods between Portugal and the EU countries, as well as with extra-EU countries. All extra-EU transactions are recorded by the customs authorities and reported to Statistics Portugal (Instituto Nacional de Estatística – *INE*). The reporting of intra-EU transactions takes place above yearly thresholds, separately defined for intra-EU exports or imports by firm.[1] Nevertheless, the statistical procedure ensures that at least 97 per cent of goods' exports and 95 per cent of goods' imports within the EU are identified by the surveys.

This transaction-level dataset contains monthly records from 1993 to 2014 for both trade flows. It comprises detailed information regarding the type of good (at 8 digits of the Combined Nomenclature), destination country, value (in euros) and quantities (in kilograms), all linked to the respective trader. Additionally, *INE* matched these records with selected firm-specific variables, such as sector of activity (defined by 4 digits of CAE 3.0 nomenclature), number of employees and establishments, year of firm creation, total turnover and equity structure. These additional variables are collected in *Quadros de Pessoal/Relatório Único* and are available from 2002 to 2013.

Some adjustments to these data were required, notably in what concerns the implications of the aforementioned reporting threshold. In order to make firm-level trade flows comparable over time, constant thresholds for total exports and imports by firm were imposed, respectively at €250 000 and €350 000 (at 2014 prices).[2] Finally, given that extra-EU transactions are fully recorded (unlike intra-EU ones), in order to ensure comparability, the same thresholds were applied to firms that only trade with extra-EU countries.

As mentioned above, a second adjustment made to the data was the removal of firms that operate in the energy sector. Although these goods represent a significant share of Portuguese international trade, nominal exports and imports are affected by oil price volatility, distorting the aggregate.

After the described adjustments, the coverage of the database in terms of total exports and imports of goods stands, on average, at 94.7 and 96.6 per cent for the period 2002-2014 (Charts 3 and 4).

A first interesting fact emerging from the data is that international traders of goods are not just manufacturing firms (Charts 5 and 6). Indeed, many firms classified in service sectors operate and play an important role in the international trade of goods. Most of these firms are retailers and wholesalers, and some operate in both domestic and foreign markets, while others may simply stand as the commercial branch of a manufacturing firm, mostly resulting from a gradual change in the way such corporations organize their logistics. Moreover, this fact is more pronounced in import than in export flows.

## 3. Export and import intensities

One of the basic elements in the analysis of international traders is their degree of engagement in foreign markets. This is captured by export and import intensities, measured as the ratio of these flows to firm's total turnover.[3] The quartiles of the distribution of both ratios have been fairly constant from 2002 to 2013

in Portugal, especially for imports (Charts 7 and 8). These quartiles take on higher values for exports, featuring median intensities always above 50 per cent, while this indicator has stood somewhat above 40 per cent for imports.

In addition, chart 7 shows a decrease in the median export intensities until 2009, followed by a slight recovery (reaching about 54 per cent in 2013). This path may have resulted from a rise in the number of firms with low export intensities and/or a drop in the number of those with high export intensities. The dataset reveals that most of the new exporters are service firms with export intensities on the left side of the distribution.

The relationship between firm's exports and turnover reflects both the performance in the domestic and international markets. Most firms that experienced a decrease in their export intensity from 2002 to 2009 saw the turnover rise more than exports. This situation reflects the dynamics of the domestic market. Conversely, the slight recovery in the period 2009-2013 may have stemmed from firms' efforts to reinforce internationalization in the context of a contracting domestic demand.

The distribution of export intensities by sector of activity indicates that most manufacturing firms have figures above 60 per cent, although their average share in total exports has decreased

**Chart 3** • Portuguese exports of goods | Millions of euros

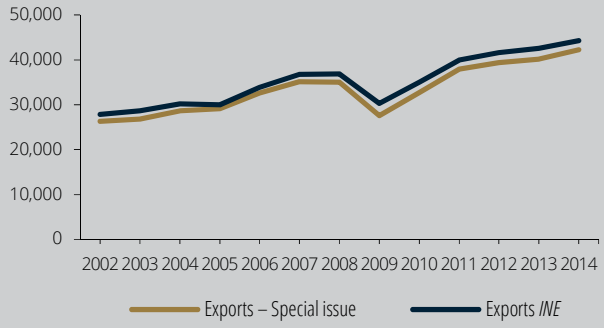
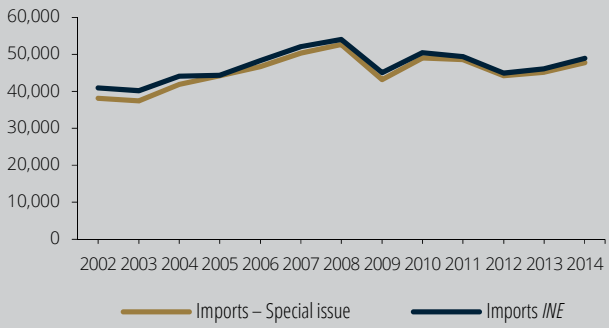



**Chart 4** • Portuguese imports of goods | Millions of euros




Sources: Statistics Portugal (national accounts) and Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

**Chart 5** • Share of non-manufacturing exporters | Share of exports (percentage)

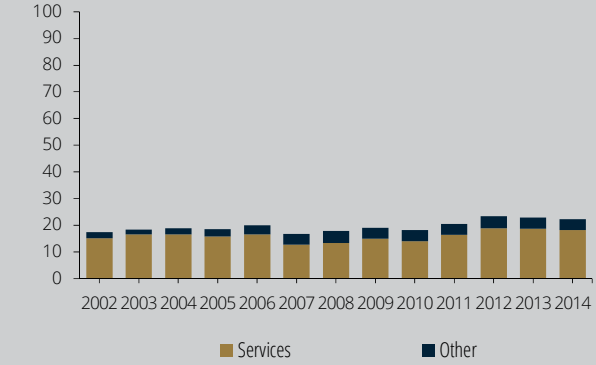
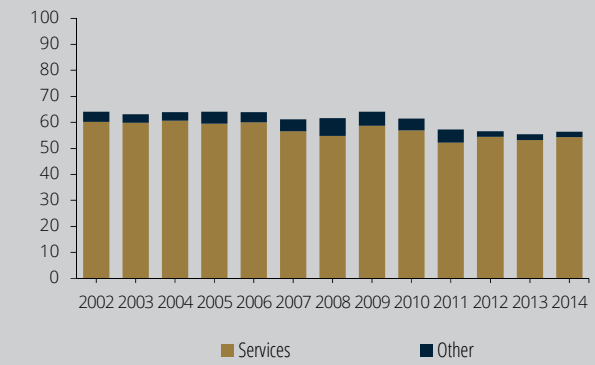



**Chart 6** • Share of non-manufacturing importers | Share of imports (percentage)




Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

from 2002 to 2013 (Charts 9 and 10). Conversely, service firms have a bimodal distribution around export intensities of 20 and 90 per cent, being mostly concentrated around the first mode. The difference grew from 2002 to 2013 as firms with lower export intensities gained importance. These two peaks are accounted for by retailers and wholesalers, which represent, on average, 90 per cent of firms in service sectors and 88 per cent of Portuguese exports of goods by such firms. The remaining exporters of goods in service sectors have very dispersed export intensities. However, from 2002 to 2013, the proportion of firms of the latter type increased on the left side of the distribution (particularly around the 20 per cent mode).

Concerning imports, the roles are reversed as most manufacturing firms have low intensities, while service firms show higher figures. This pattern suggests that the latter firms resort relatively more to external markets to buy intermediate and final goods. In particular, retailers and wholesalers have import intensities between 40 and 80 per cent. In contrast, the profile of import and export intensities by manufacturing firms suggests their still limited participation in global value chains.

## 4. Age of international traders

The age of international traders provides useful insights in terms of the underlying structural performance of exports and imports. The larger the contribution of younger firms to total exports, the higher the likelihood that exports will perform well in the following years. Young exporters are typically more adapted to the conditions of foreign markets and better aligned with consumer preferences. Therefore, they tend to operate in sectors where the economy currently seems to present comparative advantages.

Despite the empirical evidence that young firms show high mortality rates in their first year as exporters, this mortality goes down in the subsequent years and those that survive tend to grow fast and account for an increasing share of total exports. According to Amador and Opromolla (2013), using data for the period 1997-2005 on Portuguese exporters of goods, their average mortality was larger than 50 per cent in the first year and the exports by survivors multiplied by more than six in the first three years. The age structure of goods' importers is less meaningful in terms of competitiveness, but it can associated to dynamics in retail and wholesale sectors,

**Chart 7** • Quartiles of export intensity by firm
| Export intensity (percentage)

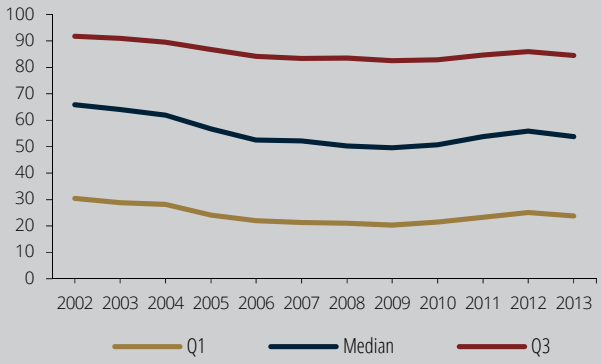
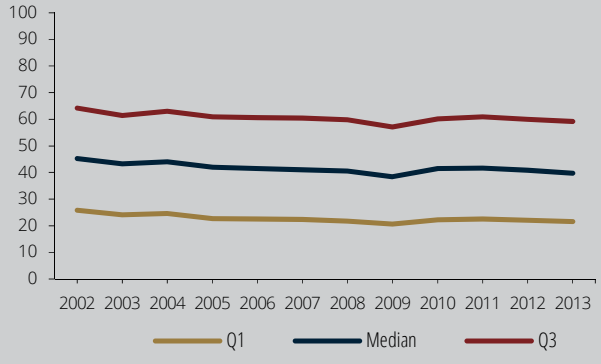



**Chart 8** • Quartiles of import intensity by firm
| Import intensity (percentage)

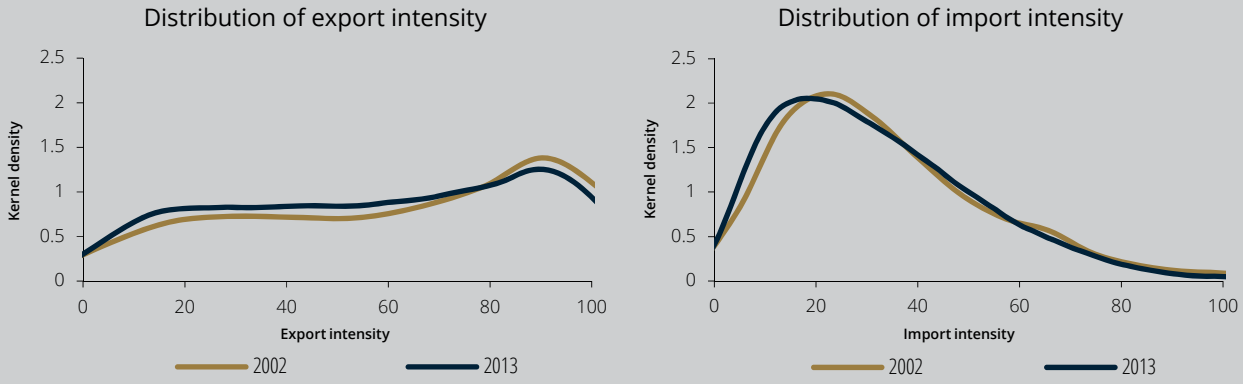



Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

as well as to the integration of young exporters in global value chains and the related incorporation of foreign value added in output.

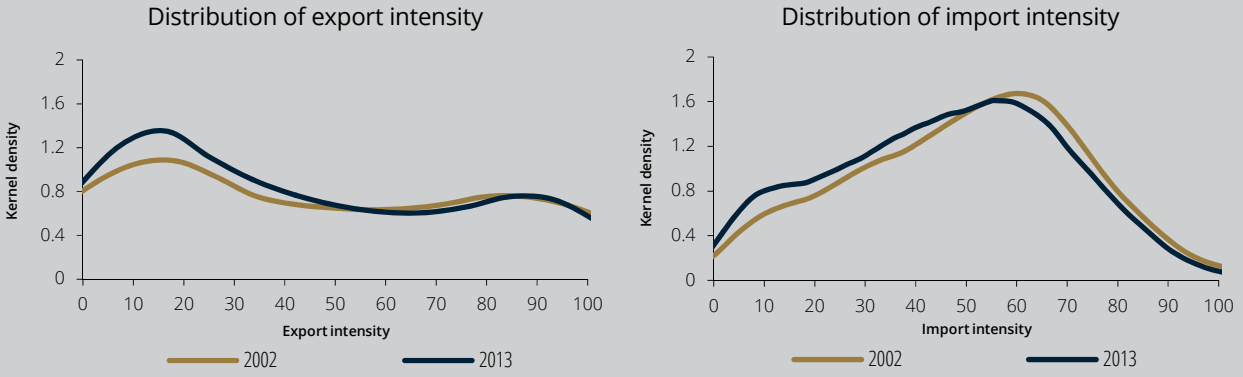
Charts 11 and 12 present the contribution of younger firms (broken down between up to 5 years old and from 6 to 10 years old) that operate in manufacturing and non-manufacturing sectors to total exports of goods, from 2003 to 2014. There is a decrease in the contribution of young manufacturing exporters over time. The overall share represented around 22 per cent of total goods' exports in 2003 and only 9.4 per cent in 2014. Although a slight recovery is observed in 2011 and 2012, this path may suggest that the global economic and financial crisis and the following sharp adjustment in the Portuguese economy limited the relevance of young exporters, which may have a bearing on future export growth. This downward movement is observed for exporters in both age cohorts and, in 2014, exporters aged less than 5 years recorded a very low share.[4] The pattern is somewhat different in the case of young non-manufacturing firms that export

**Chart 9** • Manufacturing firms




Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

**Chart 10** • Services firms




Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

Note: The distributions were truncated at 100. The existence of intensities higher than 100 may be due to valuation differences between international trade flows and firm's total turnover (see endnote number 5).The density to the right is between 9 and 19 per cent for export intensity and between 2 and 5 per cent for import intensity. In all cases, the densities above 100 rapidly converge to zero.

goods, with a small increase after 2010. This is mainly associated to a larger contribution by construction materials wholesalers (represented, 11 and 65 per cent of exports by young traders in 2003 and 2014 , respectively.). In addition, the share of firms aged less than 5 years tends to be higher than that of firms aged between 6 and 10 years, hinting at a lower survival rate of the latter firms, especially in recent years.

Two features of the period following the international economic and financial crisis and the sovereign debt crisis are the higher uncertainty and financial fragmentation in the euro area. More recently, these features have coupled with higher capital requirements and lower profitability for banks, against a background of high corporate debt levels and low growth prospects. While firms' investment decisions have been generally negatively affected by this scenario, it is conceivable that this has been particularly adverse for young firms, with lower ability to tap resources from alternative sources. At the same time, green field investment inflows – which often correspond to the entry of young exporters – have been moderate in the Portuguese economy.

These results are compatible with those presented in Banco de Portugal (2013), using the database I*nformação Empresarial Simplificada (IES),* which reports balance sheet and income statement items for the universe of Portuguese firms, excluding sole proprietorships. According to this source, approximately one quarter of goods' exports in 2012 came from firms that started their activity after 2000.

Although it seems to exist evidence that their role has been losing momentum, the contribution of young exporters is still relevant, which is likely to favour the restructuring of the export pattern. This stresses the need to pursue the structural reforms agenda, fostering investment in tradable sectors.

As regards young importers, the overall picture presents some differences. As for the share in total imports of those that operate in the manufacturing sector, a reduction has been observed as well (Chart 13). However, this share is much lower than for exporters: importers aged less than 10 years represented, on average, 6 per cent of total imports over the period 2002-2014, against 14 per cent for exporters in the same age cohort. The share of non-manufacturing young importers has been decreasing

**Chart 11** • Share of exports by age cohorts of manufacturing firms | Share of exports (percentage)

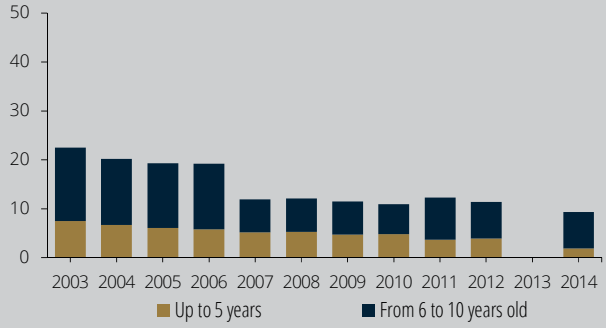
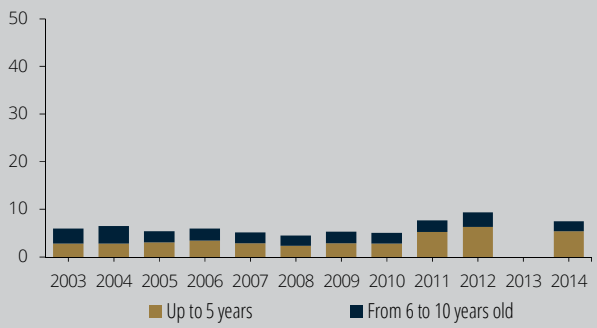



**Chart 12** • Share of exports by age cohorts of service firms | Share of exports (percentage)




Note: The dataset does not include information regarding firms' age or creation year in 2013.

Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal.*

steadily, from 19 per cent in 2003 to 8 per cent in 2014.

Therefore, also young importers seem to have fared worse in times of crisis. This evolution partly mirrors the profile observed for young manufacturing exporters that also import intermediate goods. In particular, the aforementioned lack of foreign direct investment in recent years has inhibited the creation of young exporters that are typically well integrated in global supply chains. Secondly, as for non-manufacturing importers, in a context of contraction in domestic market, the creation of new retailers and wholesalers may have been postponed and younger businesses may have faced higher mortality.

## 5. Prices

The evolution of average unit values as proxies for prices of exporters and importers is also a very important dimension in the analysis of international trade. In aggregate terms these changes relate with the evolution of the terms of trade, while at firm-level they have a bearing on the discussions about the quality of goods traded internationally.

Nevertheless, it is very hard to draw conclusions from price changes because they result from the interplay of different forces. For example, prices may decrease as a response to competitive pressures (pushing for higher efficiency or leading to exit of the market) or directly, due to lower demand from consumers. Conversely, they may increase due to an upgrade in the quality of goods exported or factors as higher brand value and better marketing. Therefore, in this section, no claims are made about the drivers of export price changes as proxied by unit values. Instead, the main focus is on the proportion of exporter-product pairs whose average unit values increased more than for exporters in the EU as a whole. In addition, the share of such exporter-product pairs in total exports of goods is computed. Box 1 provides the details about the procedure adopted to compare Portuguese and EU unit values by product at a detailed disaggregation level.

Chart 15 shows that the differential of unit values growth in Portugal *vis-à-vis* the EU was positive for about 50 per cent of exporter-product pairs over the period 2002-2014. One noticeable feature is that this share is remarkably stable. Moreover, the weight of those exporter-product

**Chart 13** • Share of imports by age cohorts of manufacturing firms | Share of imports (percentage)

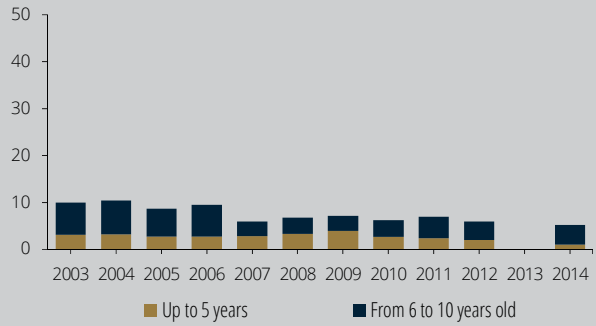
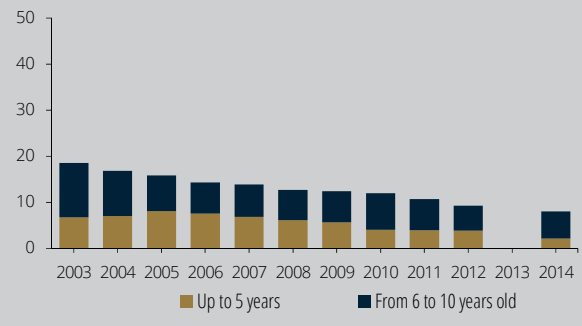



**Chart 14** • Share of imports by age cohorts of service firms | Share of imports (percentage)




Note: The dataset does not include information regarding firms' age or creation year in 2013.

Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

pairs in total exports of goods has stood between 40 and 60 per cent.

These results exclude a scenario where Portuguese firms consistently sustain their position in external markets through relative price reductions. In fact, even though price competitiveness can be a relevant driver of export performance, the current international trade environment largely precludes the use of this dimension by Portuguese firms to sustain market shares. In fact, the average wage level that prevails in the Portuguese economy is low relative to other European economies, but high relative to emerging market economies. This evidence signals that an important share of Portuguese exporters have been relying on innovation and product differentiation, instead of competing on the basis of labour intensive and non-differentiated goods.

The distributions of growth differentials between Portuguese and EU exporters as regards average unit values in 2002/2003 and 2013/2014 offer additional insights (Charts 16A and 17A). As expected, the distributions are similar in the two years, with a mode close to zero but a longer tail on the right-hand side, meaning that for some Portuguese exporter-product pairs unit values increased substantially more than in the EU. For each unit value differential, the corresponding shares in total exports of goods are presented in charts 16B and 17B. Both in 2002/2003 and 2013/2014 the shares distribute evenly around a null growth differential.

## 6. Markets

The choice of export markets by firms is the result of a complex combination of factors, ranging from overall macroeconomic conditions to market structure, transaction costs, geographical distance and historical linkages. In the context of this article, two specific dimensions are worth considering.

Firstly, the number of foreign destination markets has a bearing on risk diversification, as the ability to accommodate the effect of negative shocks in specific locations is higher if the export portfolio includes other markets. Nevertheless, the empirical literature on international trade has emphasized the existence of fixed costs to enter new markets, which can stem from putting in place a distribution chain or complying with specific local legislation. Secondly,

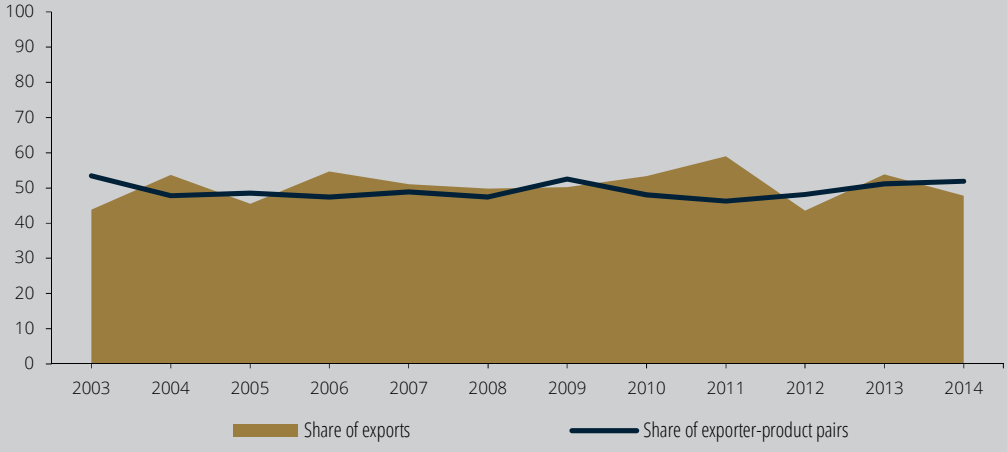



**Chart 15** • Share of exporter-product pairs with positive differential in unit-value growth (Portugal *versus* EU)

| Percentage

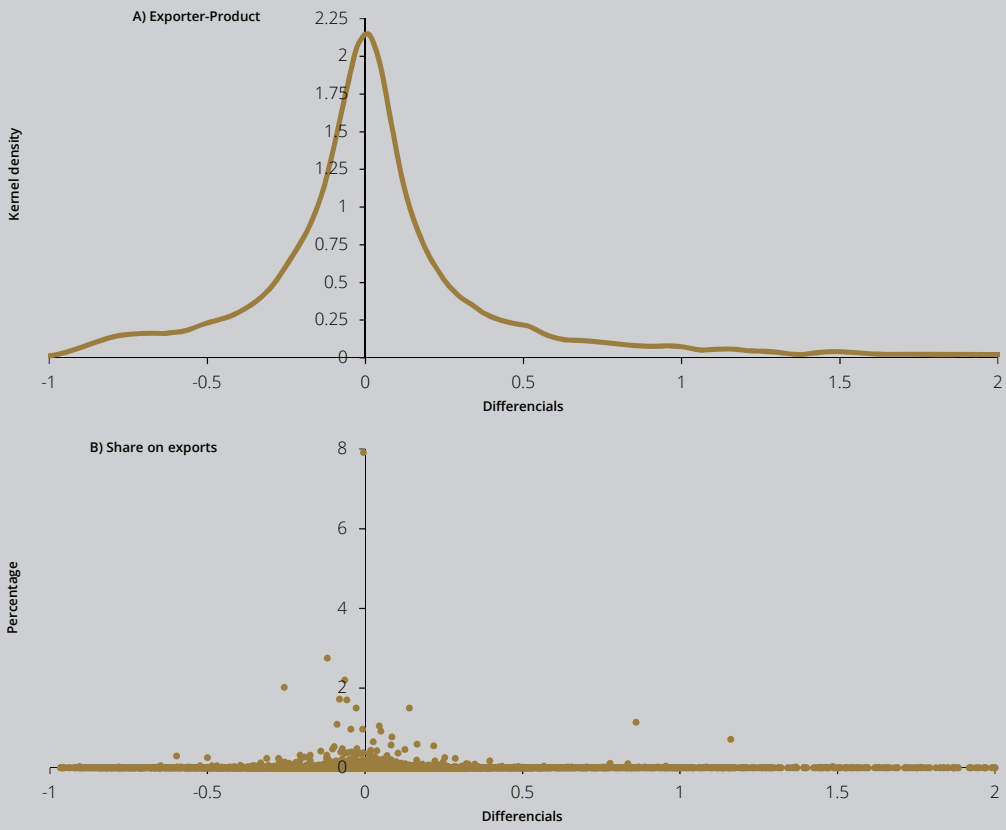
Source: Banco de Portugal calculations based on Intrastat, Extrastat and Easy Comext.

the behaviour of exports in the event of a crisis in the internal market is an important strand of analysis.

Some papers have identified a negative correlation between these two dimensions using Portuguese and European aggregate data (Esteves and Rua, 2015, and Bobeica *et al.*, 2016). It is important to briefly present the arguments for the linkage between export behaviour and domestic demand developments. On the one hand, it is foreseeable that efforts to identify potential external markets intensify when the domestic market is contracting. On the other hand, firm's ability to enter and succeed in external markets does not hinge on internal conditions. Moreover, entry costs in foreign markets may become a relatively stronger obstacle for some firms when profitably is pressured down by a lower domestic turnover. Therefore, *a priori* it is difficult to predict whether a fall in domestic sales will lead firms with prior low or null external activity to engage in stronger internationalization.

Chart 18 presents the share in total goods' exports of firms whose three largest destinations represent more than 75 per cent of total external sales. Exporters strongly dependent on a small number of destination markets account for more than 60 per cent of exports. Although these are structural features and yearly changes tend to be small, a downward trend is visible in the 2000s, from around 73 per cent in 2002 to 65 per cent in 2014. This means that there has been a progressive diversification of export markets at the firm level. Such diversification can be important for sustaining a strong pace of exports in the future.

**Chart 16 •** Distribution of differentials in unit-value growth (Portugal *versus* EU): 2002/2003




Source: Banco de Portugal calculations based on Intrastat, Extrastat and Easy Comext.

Indeed, world economic growth has been showing strong volatility and important geographical heterogeneity. This is partly associated with very high debt levels and limited room for manoeuvre for economic policies in advanced economies. Higher diversification, notably in terms of extra-EU markets, reduces these risks.

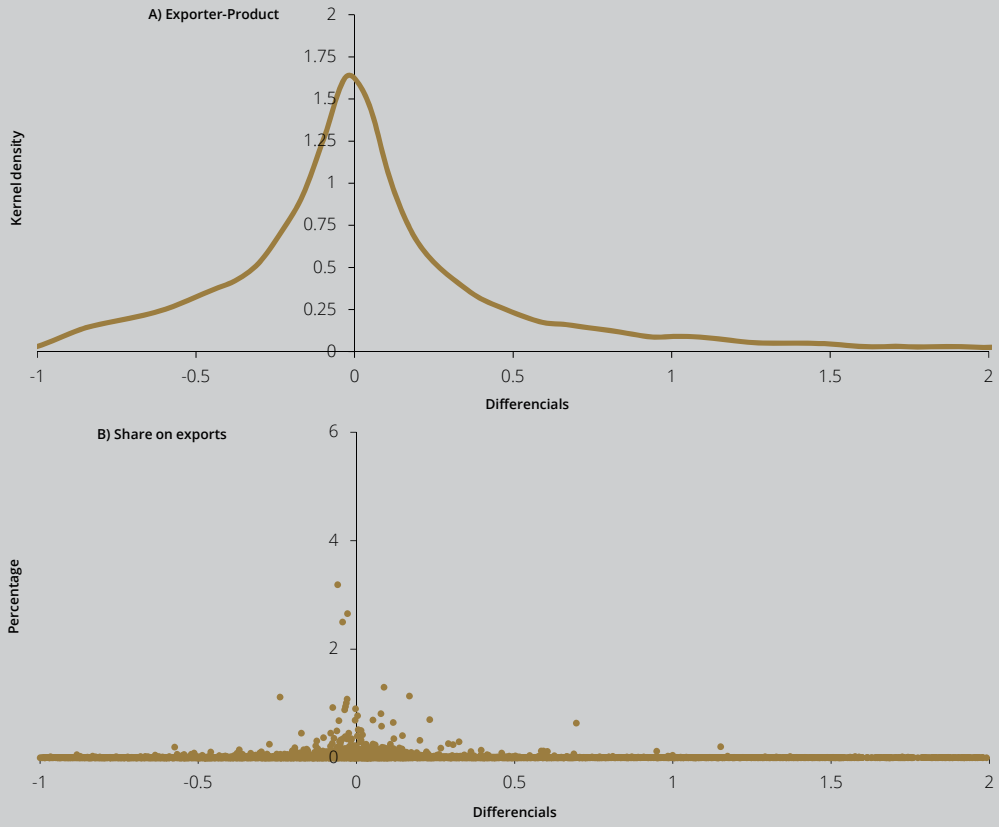



**Chart 17** • Distribution of differentials in unit-value growth (Portugal *versus* EU): 2013/2014

Source: Banco de Portugal calculations based on Intrastat, Extrastat and Easy Comext.

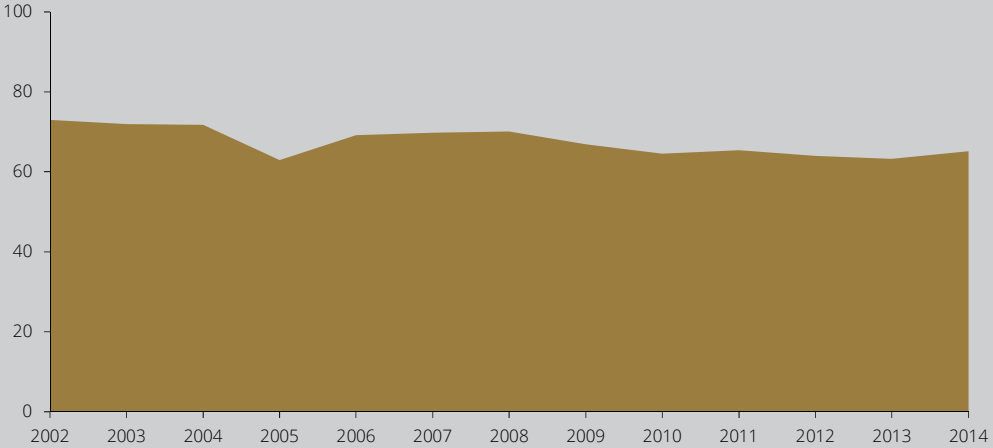



**Chart 18** • Share of exports by firms whose three largest destinations account for at least 3/4 of foreign sales

| Share of exports (percentage)

Source: Banco de Portugal calculations based on Intrastat and Extrastat.

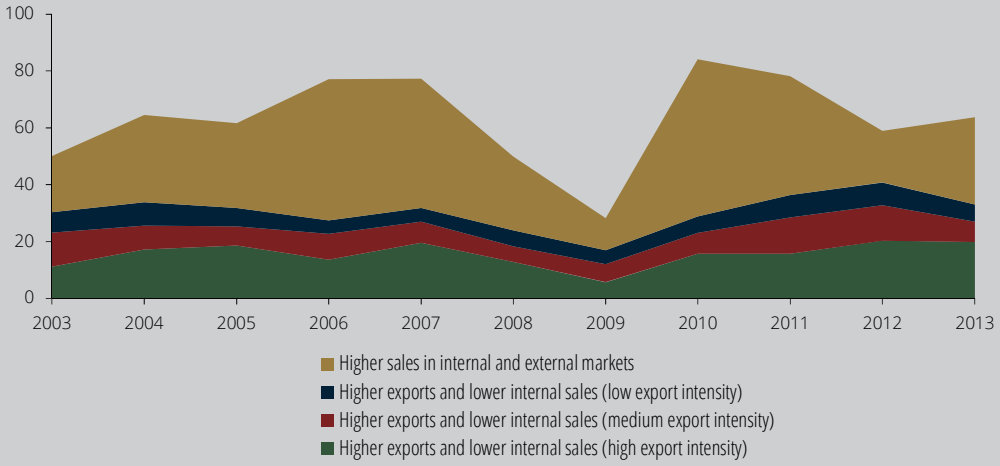
The breakdown of total exports according to the stance of exporting firms in foreign and domestic markets, interpreted as the change in sales in each one of them, sheds some light on the link between exports and domestic market developments.[5]

Chart 19 shows that the contribution to the total value of goods exported by firms whose sales increased both in internal and external markets relatively to the previous year is dominant in the period under analysis. The exception is the year 2009 when exports of most firms went down in the wake of the great trade collapse. Such contribution also decreased after 2010, while firms whose exports rose but domestic sales fell became more important. This reflects the strong macroeconomic adjustment during the Portuguese Economic and Financial Assistance Program.

The contribution to total exports by firms recording increases in exports and reductions in

**Chart 19 •** Contribution to exports according to stance in foreign and domestic markets

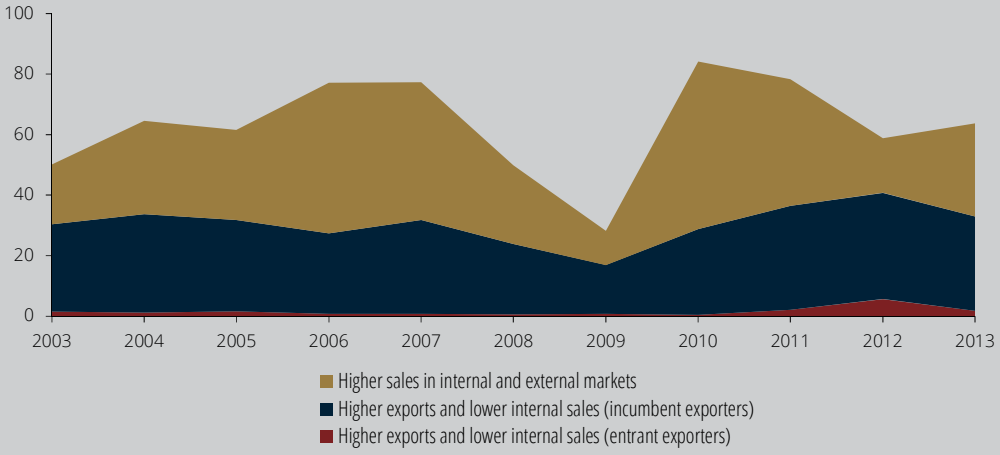
| Share of exports (percentage)




Note: Firms' export intensities were classified as low, medium and high according to the following intervals, respectively: ]0%, 33%], ]33%, 66%] and ]66%, 100%].

**Chart 20 •** Contribution to exports according to stance in foreign and domestic markets – *entrants* and *incumbents*

| Share of exports (percentage)




Source: Banco de Portugal calculations based on Intrastat, Extrastat and *Quadros de Pessoal*.

Note: Both charts presented above exclude, from their baseline computations, firms whose turnover was lower than exports. The main results remain unchanged when those companies are included. See endnote 5 for more details.

domestic sales, broken down by export intensities of the previous year, offers additional insights. Chart 19 shows that such contribution is mostly driven by high-intensity exporters and, to a lower extent, by those with medium export intensity. Firms with low export intensity present a relatively stable contribution between 2003 and 2013. Additionally, when firms are classified as *entrant* or *incumbent*[6] exporters (Chart 20), the contribution of the former group appears to be extremely low. Therefore, there is little evidence that firms that had not been strongly engaged in external markets accommodated negative domestic demand shocks by selling more abroad. Conversely, those with previous participation in foreign markets, have increased exports at a time of contraction in domestic sales.

## 7. Concluding remarks

The performance of exports is of paramount importance to the economic prospects of the Portuguese economy. High export growth rates make it possible to accommodate a steady growth of domestic demand without jeopardizing the net financing capacity of the Portuguese economy, which has been widely acknowledged as a positive outcome of the recent adjustment process. In addition, trade surpluses will contribute to progressively improve the international investment position.

The availability of firm-level international trade data for goods makes it possible to assess specific features of export developments in the medium term, notably in what concerns the characteristics of traders. In this article, which excludes trade of firms operating in the energy sector, a number of results shed light, on the recent developments in Portuguese exports.

Firstly, non-manufacturing firms are active in the international trade of goods, representing about one fifth and two thirds of exports and imports, respectively. In addition, a comparison of the distribution of export and import intensities of manufacturing firms hints at a low utilization of foreign intermediates for production and, thus, a still limited participation in global value chains.

Secondly, the share of goods' exports by young exporters is relatively high, standing at about 16 per cent in 2014, but it has been decreasing since the early 2000s. This decrease has been stronger for exporters aged less than 5 years, particularly in the last few years. In this context, the restructuring process of exporting sectors may lose momentum. It is therefore important to ensure that access to financing and overall framework conditions are not an obstacle to the entry of new exporters.

Thirdly, there is no evidence of across-the-board relative reductions in unit values of goods exported vis-a-vis EU countries. This suggests a limited relevance of price competitiveness factors for the robust growth of Portuguese goods' exports in the last years. Instead, non-price elements may have become increasingly important, particularly in segments with higher value-added.

Fourthly, a slight downward trend is visible in the share of goods' exporters whose tree largest destinations represent more than three fourths of total external sales. This means that there is some evidence of market diversification by Portuguese exporters. In addition, after 2010 there has been an important contribution to total exports by firms whose foreign sales have increased and domestic sales reduced. Nevertheless, although this intensification of exports coincided with a contraction of internal demand, such margin of response seems to be mostly used by firms with earlier medium or high export intensity.

Overall there have been some positive developments in the profile of Portuguese international traders. Nevertheless, the restructuring of the Portuguese export pattern needs to be deepened. The continuation and the full implementation of the structural reform agenda that has been discussed by several economic policy institutions is a key element in this respect.

# References

**Amador**, J. and **Opromolla**, Luca David, 2013, "Product and destination mix in export markets" *Review of World Economics*, vol. 149(1), pages 23-53, March.

**Amador**, J. and **Cabral**, M., 2014, "A Economia Portuguesa no Contexto Global", in *A Economia Portuguesa na União Europeia: 1986-2010*, Parte II – Internacionalização, Editora Almedina-Actual.

**Amador**, J. and **di Mauro**, F., 2015 (editors), "The Age of Global Value Chains: Maps and Policy Issues", Introduction, *Vox EU eBook*, CEPR.

**Banco de Portugal**, 2013, "Portuguese firms in export markets", Economic Bulletin, Special Issue, Winter 2013.

**Bobeica**, E., **Esteves**, P., Rua, A., **Staehr**, K., 2016. "Exports and domestic demand pressure: a dynamic panel data model for the euro area countries," *Review of World Economics*, vol. 152(1), pages 107-125.

**Esteves**, P. and **Rua**, A., 2015, "Is there a role for domestic demand pressure on export performance?" *Empirical Economics, Springer*, vol. 49(4), pages 1173-1189, December

## Notes

1. These thresholds are set by each member country and ensure that every firm with yearly dispatches to (arrivals from) the single market above the threshold reports its intra-EU transactions, while they do not preclude any firm below it to do the same.

2. The reporting threshold for intra-EU trade ranges between €85.000 and €550.000 for exports and €60.000 to €400.000 for imports, over the past 14 years. The highest values, both for dispatches and arrivals, occurred in 2009. These values fell sharply in the following year and remained quite stable thereafter. Comparing the number of firms reporting in the years around these changes, as well as the reported values and its firm-level distributions, the differences are not significant. Most firms reporting in 2008 keep on doing so in 2009, even the ones that came under the 2009 threshold. Moreover, if the trim was made at the 2009 value, a significant portion of the sample would be lost. For these reasons, the cut-off threshold used to allow intertemporal comparisons was the second highest.

3. Export and import intensities are different concepts, but work as complements when explaining the level of internationalization of the firm. In the first case, the importance of the external market in activity is measured. The second concept considers the importance of external markets as origin of goods necessary to such activity.

4. The variation observed for manufacturing firms with ages between 6 and 10 years old, from 2006 to 2007, is related with a one-off effect which arises from the method used. Between these years, a relevant set of electronic component manufacturers, in goods' exports, moved to the highest age cohort.

5. Firms with turnover lower than total exports must be excluded from this analysis, as inferred domestic sales would be negative. This situation may arise due to reporting errors, but also because exports are valued on a free-on-board basis (merchandise value when ready to be shipped, excluding all export fees but including the values associated with freight and insurance within the national territory of the exporting country). In addition, some firms in the international trade database do not report sales. Therefore, the coverage of both total exports and imports in this exercise drops to approximately 80 per cent.

6. A firm is considered as entrant exporter if, in the two previous years, it did not export. Hence, if the dynamics of domestic and foreign market is considered from year t to *t+1*, an entrant exporter is the one who did not export in years *t-1* and *t-2*.

### Box 1 | Methodology for the computation of exports' unit values growth rates

The comparison between the path of Portuguese and foreign unit prices in international trade requires an effort of harmonization, especially when the former are to be computed at the level of the firm. This box explains the steps of the procedure adopted in the text.

Exports' unit-value indices for each EU member state by product (defined at two digits of the Standard International Trade Classification, revision 3 of 2006 – SITC3) were collected from the *Comext* database. These indices are calculated by Eurostat using a methodology common to all countries and based on yearly Fisher unit-value indices (with 2010 as the reference year). This data allows for the computation of chain unit-value growth rates of exported goods in each member-state from 2002 onwards. Given the purpose of the exercise presented in section 5, growth rates of unit values for country-product pairs were aggregated to the SITC3 classification (two digits). The aggregation was implemented along two different approaches, yielding virtually identical results. The first approach simply takes the average unit-value growth rate (across EU countries) for a given product in a fixed year, while the second weights each growth rate by the respective country's export share for the same good. Annual unit value growth rates by exported good for the EU are obtained this way.

Average unit values for Portuguese exporters were computed after eliminating outliers in the cross--section and over-time dimensions. Firstly, for a given year, unit-value outliers for each good (defined at eight digits of the Combined Nomenclature – CN) were detected through the median absolute deviation (MAD) method because this measure is more robust to outliers than the mean. To implement this procedure it is necessary to know whether the distribution of unit values is symmetric or skewed, thus *g1* skewness coefficients were computed by product. Categories with less than three observations or products that had always the same price were excluded because the skewedness coefficient is undetermined. As a rule of thumb, a distribution was considered not skewed if the corresponding *g1* coefficient lay between -0.8 and 0.8. In such situations, the outlier cutoff was set to 2, though this applied to only a few goods, as most distributions were right-skewed. Skewed distributions require a double MAD procedure, which consists in dividing the observations into two groups: below or equal to and above or equal to the median unit-value, and calculate the MAD for each subgroup. The MAD of the first set of observations is used to evaluate the points lower than or equal to the median and the MAD of the second set is used to check observations greater than the median. Finally, whenever the MAD was zero, because more than 50 percent of a product unit-value observations had identical values, the associated trade records were excluded.

The second stage of the outlier detection procedure uses the time dimension in the dataset, excluding observations more than ten times higher or lower than the median unit-value of the previous and following years. Since the CN is revised on a yearly basis, eight digit codes had to be grouped into synthetic families between consecutive years to ensure comparability of goods over time (as in Branco and Opromolla, 2012).

Next, unit values that survived the previously described two-stage procedure were aggregated at the firm-SITC level in order to calculate price growth rates comparable to those prevailing in the EU. The yearly correspondence between the CN (eight digits) and SITC (five digits) is available at the World Integrated Trade Solution website (World Bank) and the Reference and Management of Nomenclatures website (Eurostat). Until 2006 the correspondence uses the third revision of SITC and from 2007 onwards the fourth revision. Therefore, given that indices available in *Comext* are reported in terms of the third revision, a synthetic product family between these two SITC revisions had to be created. Finally, the growth rates of unit values in Portugal were aggregated at the firm-product (synthetic SITC) level using as weights the share of each product (CN) in the firm's total exports.