Economic Bulletin

October 2019

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Contents

I The Portuguese economy in the first half of 2019

1 Overview

In the first half of 2019 the Portuguese economy decelerated slightly, although it continued to grow at a faster pace than the euro area. This positive growth differential observed since 2016 should be considered over a longer-term perspective. Indeed, over the past 25 years, Portuguese GDP *per capita* has not approached the average levels observed in the European Union (EU).

This issue of the *Economic Bulletin* focuses on the Portuguese economy's performance in the first half of 2019 (Part I). This analysis is complemented with an assessment of projections for the year as a whole (Part II) and an in-depth appraisal of real convergence in the EU and the relative performance of the Portuguese economy in the past few decades (Part III). Hence, this Bulletin assesses recent developments in the Portuguese economy, amid high uncertainty at international level, while taking into account structural weaknesses that have been constraining its real convergence. The Bulletin already includes the new national accounts series released by Statistics Portugal on 23 September (Box 5).

In the first half of 2019 gross domestic product (GDP) pursued the deceleration trend observed since mid-2017, growing by 2.0% year on year (2.4% in 2018 as a whole). However, economic activity in Portugal continued to be relatively resilient compared to developments in the euro area as a whole, where GDP slowed down more sharply in the past few quarters.

The deceleration of GDP in Portugal reflects developments in external demand, against a background where domestic demand growth remained stable overall. The slowdown of external demand was due to a deceleration in economic activity and world trade, in an external environment marked by a rise in uncertainty and protectionism. Exports grew less than in previous years, although their performance was better than in the second half of 2018. Portuguese exports still recorded further market share gains, associated with a particularly positive trend of car and tourism exports. In turn, imports grew more than exports, leading to a deterioration of the goods and services account balance.

As mentioned, domestic demand growth remained stable in the first half of 2019, combining on the one hand a slowdown in public and private consumption and on the other a strong acceleration of investment. Underlying developments in investment was a significant contribution of the components associated with machinery and equipment and with construction, the latter partly linked to large-scale infrastructure projects. Simultaneously, the flows of credit to non-financial corporations recovered, in particular in the construction and real estate sectors. The growth of credit to firms chiefly corresponded to financing from non-residents.

Although the international macroeconomic environment creates some uncertainty as to future developments in the Portuguese economy, monetary and financial conditions at international level remain favourable, mainly visible in historically low financing costs. The European Central Bank (ECB) has strengthened its commitment to maintaining interest rates at low levels in the next few years, having adopted a wide set of monetary stimulus measures in September. This environment has passed through to very low interest rates in the credit market. However, the deleveraging of firms and households has continued, although credit recovered in both segments.

The general government sector is also expected to remain on a deleveraging path, although, as in the non-financial private sector, the indebtedness level continues to be significantly higher than the euro area average. In the first half of the year the general government deficit declined when compared to the same period a year earlier, making the key objective for the year as a whole clearly achievable. In the context of a considerable primary surplus and an average interest rate on debt stock lower than the economy's nominal growth, public debt as a percentage of GDP is likely to continue to decline.

Portuguese economic growth over the past few years has been reflected in an improvement in the main labour market indicators. The unemployment rate declined further in 2019, standing at a lower level than in the euro area. The rise in employment chiefly involved more skilled workers. Foreign

workers have contributed to this rise, countering the negative effects of population ageing on the labour force. Productivity per worker increased somewhat in the first half of the year, although a considerable differential still subsists against the average euro area values.

Part II of this *Economic Bulletin* presents the projections for the Portuguese economy for 2019 as a whole. In the second half of 2019 Portuguese year-on-year economic growth should record a relative stabilisation, in a context of sustained strong private consumption and exports and slower gross fixed capital formation.

These developments in activity face mostly downside and external risks. Given the high global uncertainty, there may be a more adverse deterioration of the external environment than currently estimated for the second half of the year. This might result from a cooling-off in the main export markets, the intensification of protectionist trends, the conditions of a possible no-deal Brexit, or a worsening of geopolitical tensions.

Part III of this *Economic Bulletin* includes a Special issue on real convergence in the European Union and the relative performance of the Portuguese economy. The analysis shows that there was no convergence of GDP *per capita* in Portugal towards the EU average in the past 25 years, which contrasts with the considerable progress in the Portuguese economy's real convergence observed in the 1960-95 period. This is chiefly associated with the maintenance of unfavourable relative developments in total factor productivity in the past two decades – reflecting persistent weaknesses in the institutional framework and market functioning – in the context of a lower contribution of the capital stock per worker to convergence. Over the whole period under review, the improvement of the qualification levels of Portugal's labour force helped reduce the GDP *per capita* differential *vis-à-vis* the EU.

This Bulletin includes a number of analytical instruments that may be useful for a discussion on how to overcome some of the vulnerabilities identified. Monetary policy stimuli have been important to ensure historically low financing costs, but there is limited scope to raise the degree of monetary accommodation (Box 1). Indebtedness levels in the public and private sector in Portugal continue to rank among the highest in the EU (Box 2). This places unavoidable limits to monetary and fiscal policy's ability to act. Challenges posed by population ageing are also prominent, and it is important, inter alia, to reinforce the attractiveness and ability to retain younger workers, who in general have a higher educational level than the previous generations (Box 3). In addition, productivity must be further improved, being noted a significant room for progress in terms of management quality, particularly in smaller-sized enterprises (Box 4). Finally, the sectors exposed to international competition tend to be, almost by definition, among the most competitive of the Portuguese economy. To ensure such competitiveness, particularly in a more uncertain external environment, it is necessary to promote a suitable institutional framework (Box 6).

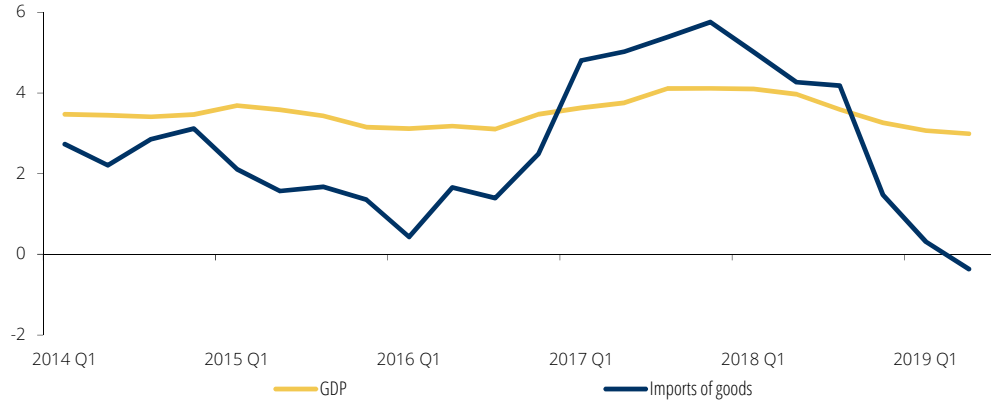
Overall, the current growth environment of the Portuguese economy should be seen within the context of a deteriorating international environment and high uncertainty. This moment should thus be considered a window of opportunity to strengthen policies and structural reforms which contribute to the correction of some of the Portuguese economy's main vulnerabilities. Progress in terms of human capital, capital per worker and the institutional environment is essential to resume a lasting and substantial convergence of Portuguese income levels towards the European average, but also to ensure the resilience and decrease the exposure and vulnerability of the economy to external risks.

2 International environment

Global economic activity decelerated in the first half of 2019

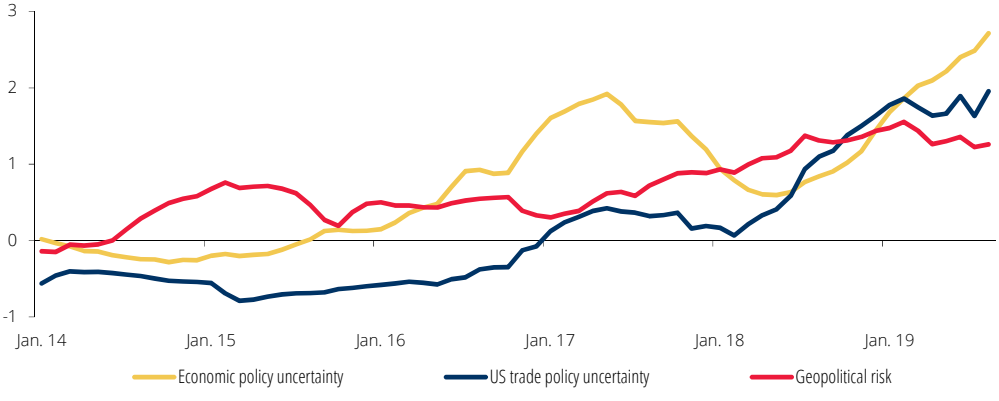
The moderation in the pace of global economic expansion observed over the course of 2018 extended into the first half of 2019 (Chart I.2.1), in particular in sectors more exposed to international trade. In a context of trade tensions and high political and economic uncertainty, manufacturing activity generally slowed down, but growth in services activity remained resilient (Chart I.2.2). On the expenditure side, developments in production flows show a sharp deceleration in investment and more stable private consumption. The labour market situation remained relatively benign and financial conditions continued to be favourable, benefiting from a more accommodative monetary policy stance by the main central banks of the advanced economies.

Chart I.2.1 • World GDP and trade | Year-on-year rate of change, percentage



Sources: CPB Netherlands Bureau for Economic Policy Analysis, Eurostat, IMF and Refinitiv (Banco de Portugal calculations).

Chart I.2.2 • Global uncertainty | Z-score, 12-month moving average vs. historical average



Source: www.policyuncertainty.com (Banco de Portugal calculations). | Notes: Z-score corresponds to the index value minus the sample mean divided by the sample standard deviation. Data since 1985 (1997 for economic policy uncertainty). Indicators based on the frequency of words in newpapers related to economic policy uncertainty, trade policy or geopolitical tensions (military, nuclear, war and terrorrism). A value above (below) zero means that uncertainty/ risks in the last 12 months were above (below) the historical average.

World trade in goods decelerated more sharply than economic activity

World imports of goods declined slightly year on year in the second quarter of 2019. Developments in world trade have been affected by a slowdown in import-intensive expenditure components, in particular investment, together with the negative effect of an increase in trade protectionism. After the hikes observed in 2018, tariffs applied by the United States to products from China increased again in May and September, followed by retaliation from China. There continues to be considerable uncertainty over the future environment for world trade. On the one hand, the threat that trade tensions between the United States and China, as well as other important trading partners, might intensify still remains. On the other hand, there is also uncertainty surrounding the United Kingdom's withdrawal from the European Union (EU). This uncertainty has influenced the long-term decisions of economic agents, in particular in terms of investment.

International oil prices in 2019 were mainly affected by supply-side constraints

After the sharp drops seen in the last months of 2018, oil prices followed an upward path until mid-May, against a background where supply-side constraints predominated, namely the production cuts in the first half of 2019 agreed on between OPEC countries and other producers (OPEC+), sanctions on Iran and political conflicts in Venezuela and Libya. From mid-May to mid-June, a less favourable outlook for the global economy and high uncertainty led to a downward revision of demand for oil and contributed to a partial price correction. Since then, oil prices have remained somewhat stable. However, worsening trade tensions between the United States and China in August contributed to a renewed fall in oil prices. At the end of August, oil prices stood at USD 59 per barrel (around EUR 54 per barrel), approximately 11% above the level observed at the end of 2018 (16% in EUR). Despite these developments, in the first eight months of 2019 oil prices stood on average below those seen in the same period a year earlier (around -9% in USD and -4% in EUR).

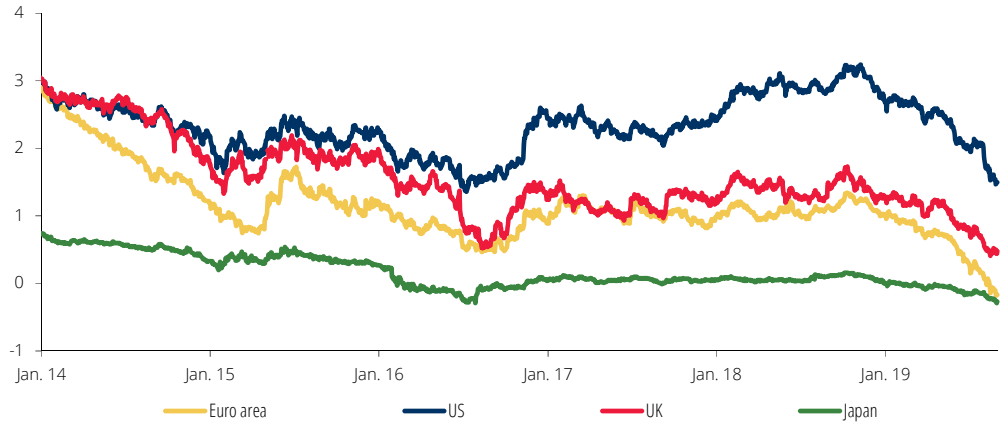
The recovery in international financial markets was occasionally disrupted by an intensification of trade tensions

After the turmoil observed in the last months of 2018, conditions in international financial markets improved in 2019. These developments benefited from an agreement between the United States and China in December 2018, which helped ease trade tensions in the first months of the year, and a more accommodative monetary policy stance in the major advanced economies. The intensification of trade tensions and the tariff hikes in May led to a deterioration in financial market sentiment and movements caused by heightened risk aversion. These constraints were mitigated from June onwards, influenced by increased expectations of an interest rate reduction by the United States Federal Reserve, the extension of the ECB's forward guidance (Box 1) and expectations of additional decisions on monetary accommodation in the euro area. However, renewed trade tensions in August led to a further deterioration in financial market sentiment.

The major stock market indices rose from the end of 2018 to the end of August. The most significant valuations were observed in the United States and the euro area (around 17% and 13% respectively). Government bond interest rates in the major advanced economies declined to fairly low levels (Chart I.2.3). In the euro area, government bond interest rates are at record lows. Euro area ten-year government bond yields were negative at the end of August and the spreads on some euro

area countries' sovereign debt against German debt narrowed. In the foreign exchange market, from the end of 2018 to the end of August, the euro remained relatively stable in nominal effective terms (depreciating by 0.7%). The dollar appreciated by about 2%, influenced to a large extent by movements caused by heightened risk aversion. The pound sterling depreciated by around 2%, influenced by political developments in the United Kingdom and prospects of a no-deal Brexit. Tariff hikes and the subsequent upsurge in tensions between the United States and China weighed on developments in the Chinese renminbi, which depreciated by around 2% in the same period.

Chart I.2.3 • 10-year sovereign bond interest rates | Percentage



Sources: Bloomberg and ECB.

Economies outside the euro area decelerated in the first half of the year

In the United States, GDP continued to grow at a robust pace in the first half of the year (2.5% year on year), although below the levels seen over the course of 2018 (2.9% in the year as a whole). Following a slight disruption at the start of the year owing to the government shutdown and a deterioration in consumer confidence, private consumption supported growth in activity, in a context where the situation in the labour market continued to be very positive. Nevertheless, economic growth has been affected by increased tariffs with China and the climate of uncertainty arising from the possibility of additional protectionist measures. Corporate investment remained weak and exports dropped compared with the same period a year earlier. As regards inflation, the year-on-year change in the private consumption deflator declined from 1.8% in December 2018 to 1.4% in July 2019 (excluding food and energy, which are more volatile, the rate dropped from 2.0% to 1.6%). Communication by the Federal Open Market Committee (FOMC) during the first half of 2019 suggested that monetary policy normalisation was almost complete. In July, amid low inflationary pressures and uncertainty about the implications of global developments for the economic outlook, the FOMC reduced the key monetary policy rates by 25 b.p.

Economic activity in the United Kingdom, Portugal's main trading partner outside the euro area, showed some volatility in the first half of 2019. This volatility was associated with a significant accumulation of inventories in the first quarter, as the initial deadline for its withdrawal from the EU (end of March) was looming. Compared with the previous quarter, GDP grew by 0.5% in the first quarter and declined by 0.2% in the following quarter. Growth has remained relatively weak since 2018 (1.4% in the year as a whole), affected by growing uncertainty surrounding the withdrawal from the EU and a deceleration in global demand. The contribution from corporate gross fixed capital formation

(GFCF) and net exports has been very weak, while private consumption has remained relatively resilient (1.7% year on year in the first half of the year). Labour market conditions continued to be favourable and wage growth remained relatively strong. Inflation (as measured by the Consumer Price Index – CPI) was 2.0% in July and underlying inflation (excluding food and energy) stood at 1.9%. The outlook for the United Kingdom crucially depends on how the Brexit negotiations develop. In the last few months, the probability of a no-deal Brexit increased, contributing to a sharp depreciation of the pound sterling. This scenario may give rise to considerable drops in the United Kingdom's GDP and imports, considering the joint effect of trade and financial disruptions and heightened uncertainty.[1]

With regard to the emerging market economies that play a more important role in Portugal's external trade, the Chinese economy continued to gradually decelerate (GDP increased by 6.2% year on year in the second quarter of 2019, compared with 6.4% at the end of 2018). Economic growth has been affected by increased trade tensions, but benefited from monetary and fiscal stimulus measures, including tax reductions and increased spending on infrastructure. In any case, these measures have been framed by policies focusing on containing economic agents' debt, which is still quite high, in particular loans to non-financial corporations. In Brazil, economic activity continued to be considerably affected by uncertainty surrounding economic policy. GDP growth remained weak in the first half of the year (0.7% year on year).

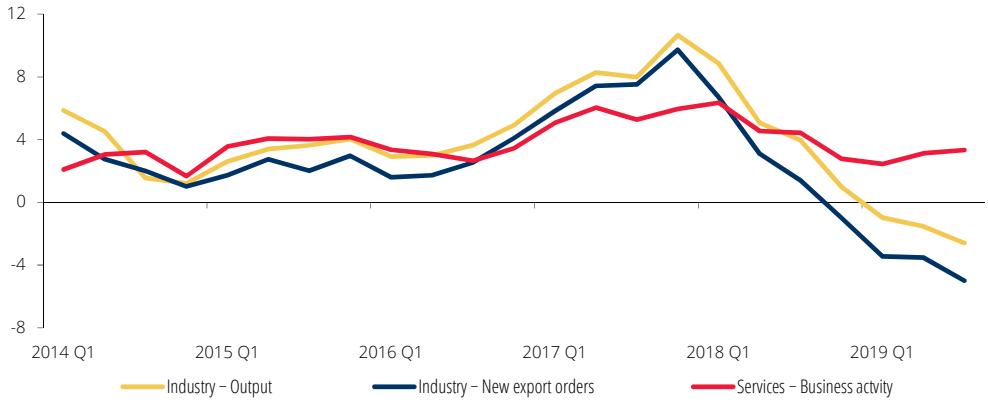
The pace of expansion of euro area activity was low in the first half of 2019

After temporarily recovering in the first quarter, euro area GDP slowed down again in the second quarter (with the quarter-on-quarter rate of change going from 0.4 to 0.2%). Year-on-year growth in the first half of the year stood at 1.2% (1.9% in 2018 as a whole). The acceleration in the first quarter was mostly due to temporary factors affecting activity, namely a good performance of construction and car sales. There has been a clear divergence between manufacturing and services in the euro area (Chart I.2.4). The pace of growth in gross value added in industry has declined significantly since the start of 2018, remaining at sustained, albeit more moderate, levels in services (in the second quarter, the year-on-year rate of change in the two sectors was -1.3% and 1.6% respectively). Having overcome the disruptions observed in the second half of 2018, associated with the entry into force of new CO_2 emissions tests in the car sector, industrial production remained weak in 2019, to a large extent as a result of weakening global demand (Box 6).

On the expenditure side, the contribution of domestic demand to GDP growth remained relatively stable, while the contribution of net exports was weak. Euro area employment growth remained robust, but decelerated somewhat in the first half of 2019 (1.3% year on year, compared with 1.5% in 2018). However, employment in more export-oriented industries decelerated significantly. The unemployment rate declined to a level close to record lows (7.5% in July). A persistently unfavourable situation in the industrial sector may affect the labour market and is a downside risk to domestic demand and activity in the services sector.

1. See, for example, Box 1 "Developments in the United Kingdom's departure from the European Union (Brexit) and its impact on the British economy so far", *Economic Bulletin*, May 2019.

Chart I.2.4 • *Purchasing Managers'* Index in the euro area | Diffusion index, deviation from 50



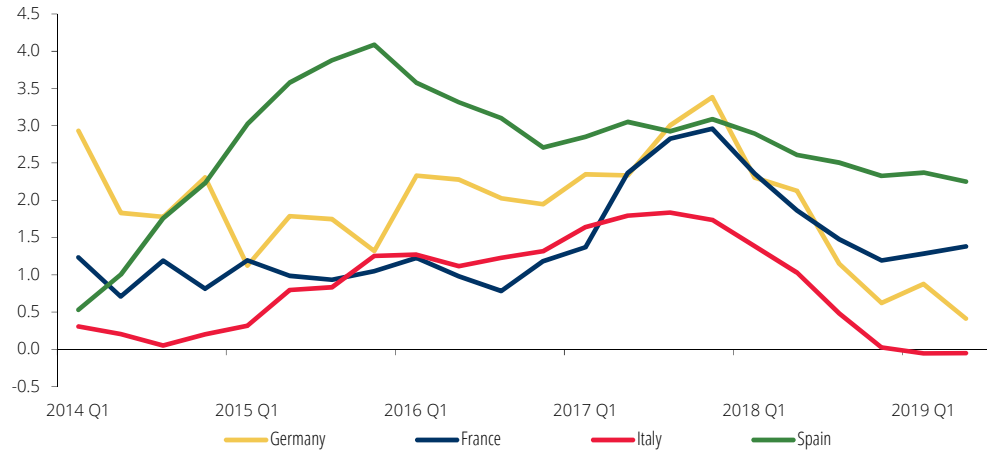
Source: IHS Markit (Banco de Portugal calculations). | Notes: Manufacturing industry. The third quarter of 2019 corresponds to the average of July and August.

Developments in economic activity were heterogeneous in the four largest euro area economies (Chart I.2.5). Year-on-year GDP growth remained weak in the first half of the year in Germany and Italy (0.6% and -0.1% respectively) and was more robust in France and Spain (1.3% and 2.3% respectively). In the German economy, private consumption and investment remained at relatively stable levels. The deceleration is mostly related to the slowdown in the activity of exporting industries. Industrial production (excluding construction) dropped by around 4% year on year in the first half of the year. Labour market conditions remained favourable, but the pace of growth in employment declined (to around 1% year on year in the first half of the year). In Italy, GDP practically stagnated in the first half of the year, also reflecting weak industrial production and global trade tensions. In France, after decelerating in 2018, growth in activity increased slightly in the first half of the year, supported by buoyant domestic demand and a less pronounced deceleration in exports, in particular compared with Germany. In turn, industrial production and employment have shown a slight recovery after the social unrest of 2018. In Spain, despite a relatively weak performance from exports, economic activity benefited from buoyant domestic demand, in the context of continued improvement in the financial situation of firms and households. Growth in employment in Spain remained high (2.3% in the first half of the year).

External demand for Portuguese goods and services slowed down in the first half of 2019

Following a pronounced deceleration in 2018, external demand for Portuguese goods and services slowed down again in 2019. Year on year, the pace of growth went from 2.5% in the second half of 2018 to 1.8% in the first half of 2019 (Table I.2.1). This slowdown was seen across various markets of origin. Taking into account its share of external demand, the sharp deceleration in Spanish imports was particularly noteworthy. Given that the deceleration in domestic demand in Spain has been gradual, developments in imports appear to be largely explained by weakening Spanish exports. This is related to the high import content of certain sectors, such as the car industry. By contrast, French imports accelerated slightly, in line with sustained domestic demand. In turn, the United Kingdom's imports showed significant volatility in the first half of 2019. A marked increase was observed in the first quarter and a decline in the following quarter. These developments mainly reflected the effects of imports of unspecified goods (including non-monetary gold) and an accumulation of inventories before the initial deadline for the United Kingdom's withdrawal from the EU at the end of March. In the second quarter, imports dropped by 0.8% compared with the same period one year earlier.

Chart I.2.5 • GDP in the four largest euro area economies | Year-on-year rate of change, in percentage



Source: Eurostat.

Table I.2.1 • External demand of goods and services | Year-on-year rate of change, percentage

	Weights [b]	2015	2016	2017	2018	2018		2019
						H1	H2	H1
External demand (ECB) [a]	100	4.0	2.8	4.7	3.1	3.8	2.5	1.8
Intra euro area external demand	62.7	6.1	3.2	5.2	2.8	3.6	2.1	1.5
Imports								
Spain	25.5	5.4	2.9	5.6	3.5	5.0	2.0	-0.4
Germany	12.0	5.4	4.2	5.7	3.7	3.8	3.7	3.4
France	12.5	5.7	3.0	4.1	1.2	1.6	0.8	2.2
Italy	3.4	6.7	3.8	5.8	1.8	2.1	1.5	1.4
Extra euro area external demand	37.3	0.7	2.0	3.8	3.6	4.1	3.2	2.3
Imports								
United Kingdom	6.8	5.5	3.3	3.5	0.7	0.0	1.3	6.8
United States	4.9	5.3	2.0	4.7	4.4	4.3	4.4	2.6
Brazil	1.2	-14.0	-10.4	5.5	7.6	7.5	7.7	2.3
China	1.6	-0.7	3.7	6.9	6.1	7.2	5.2	-2.7
Memo:								
World trade of goods and services (IMF)		2.7	2.3	5.4	4.1	–	–	–
World imports of goods (CPB)		1.7	1.5	5.1	3.5	4.6	2.6	0.1

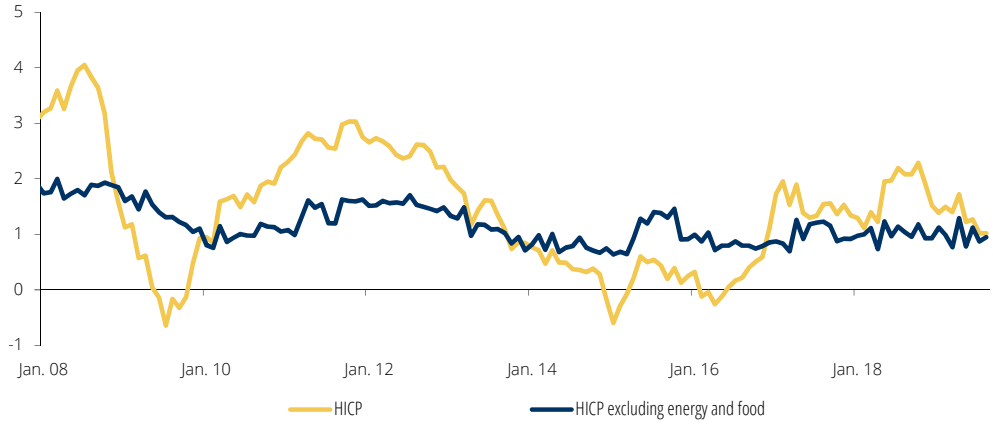
Sources: CPB Netherlands Bureau for Economic Policy Analysis, ECB, IMF and Refinitiv (Banco de Portugal calculations). | Notes: (a) Computed by the ECB as the weighted average of imports volumes of the main trading partners of Portugal. Each country/region is weighted by its share in Portuguese exports. (b) Average weights over the period 2014-16.

Euro area inflation declined in the first half of 2019, reflecting a deceleration in energy prices

Euro area inflation, as measured by growth in the Harmonised Index of Consumer Prices (HICP) decreased to 1.4% in the first half of 2019, after 1.8% in 2018. This mainly reflected developments in energy prices and, to a lesser extent, food prices (Chart I.2.6). Also excluding the variability specifically related with the Easter period, underlying inflation hovered at around 1% in the first half of 2019. In particular, services inflation excluding the more volatile components (package holidays, accommodation and air transport) stabilised in the same period, after the increases observed in the course of 2018. In the first half of 2019, euro area unit labour costs grew by 2.2% year on year (0.5 p.p.

higher than in 2018), but their pass-through to inflation has been limited, particularly in services, where the proportion of the labour input tends to be higher in costs.

Chart I.2.6 • HICP in the euro area | Year-on-year growth rate, percentage

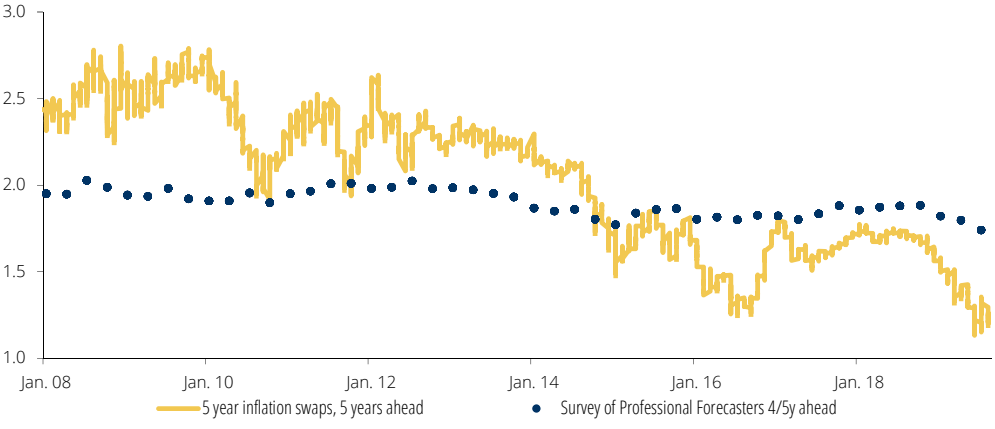


Source: Eurostat. | Notes: In January 2019, a new methodology for computing the indices of package holidays was introduced in Germany. The revised data start from January 2015. Due to these changes, inflation rates have breaks during 2015.

Euro area longer-term inflation expectations have declined

Euro area inflation expectations implied in market instruments for a horizon of five to ten years dropped to record lows in mid-July (Chart I.2.7). Survey-based measures for a horizon of four or five years have also decreased, possibly influenced by a deteriorating medium-term economic outlook, although still standing at levels that are relatively close to the ECB's price stability objective. According to the ECB's Survey of Professional Forecasters (SPF) on the basis of information collected during the third quarter of 2019, inflation expectations for a horizon of four to five years declined to around 1.7%. The share of respondents with forecasts of 1.7% or lower increased from 40% to 50%. Recent developments suggest heightened risks that euro area inflation expectations will remain persistently low.

Chart I.2.7 • Medium and long-term inflation expectations | Percentage



Sources: ECB (Survey of Professional Forecasters) and Refinitiv (Banco de Portugal calculations). | Notes: Average inflation rates implied in swaps (5-year period, 5 years ahead) and survey-based instruments in the horizon of 4/5 years.

3 Monetary and financial conditions

3.1 Euro area

In the course of 2019, the ECB strengthened the degree of monetary policy accommodation

Against a background of moderation of the pace of economic expansion, downward revisions to macroeconomic projections for the medium term, persistently high uncertainty and low inflation levels, the ECB announced two extensions of its forward guidance in the first half of 2019, as detailed in Box 1. In July, the ECB underlined the need for a highly accommodative stance of monetary policy for a prolonged period of time, and stood ready to adjust all of its instruments, as appropriate, to ensure that inflation moves towards its target in a sustained manner.

Against this background, in September the ECB cut the deposit facility rate by 10 b.p. to -0.50%. The interest rates on the main refinancing operations and the marginal lending facility remained unchanged at 0.00% and 0.25% respectively. According to the ECB, key interest rates are expected to remain at their present levels or lower levels until they see the inflation outlook robustly converge to a level sufficiently close to, but below, 2% within its projection horizon, and that such convergence has been consistently reflected in underlying inflation dynamics.

Furthermore, the ECB has decided to restart net purchases under its asset purchase programme (APP) at a monthly pace of €20 billion as from 1 November. These purchases are expected to run for as long as necessary to reinforce the accommodative impact of the key interest rates, and to end shortly before the ECB starts raising them. The policy of reinvesting the principal from maturing securities purchased under the APP, which proceeded in the course of the year, was reiterated and should be maintained for an extended period of time past the date when the ECB starts raising its key interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

The ECB also launched a new series of targeted longer-term refinancing operations (TLTROs-III), which will roll out quarterly between September 2019 and March 2021. Each TLTRO will have a three-year maturity and an interest rate set around the average rate applied to the main refinancing operations over the life of the respective TLTRO. The interest rate will also offer incentives for credit conditions to remain favourable (for credit institutions whose eligible net lending exceeds a given benchmark level, the interest rate will be lower, and can be as low as the average interest rate on the deposit facility prevailing over the life of the respective operation).[2]

Finally, with the purpose of supporting monetary policy transmission via credit institutions, the ECB decided in September to introduce a two-tier system for reserve remuneration, which exempts part of credit institutions' excess liquidity holdings from negative remuneration at the rate applicable on the deposit facility.

2. In March, the ECB also announced that refinancing operations would continue to be conducted as fixed rate tender procedures with full allotment for as long as necessary, and at least until the end of the reserve maintenance period starting March 2021.

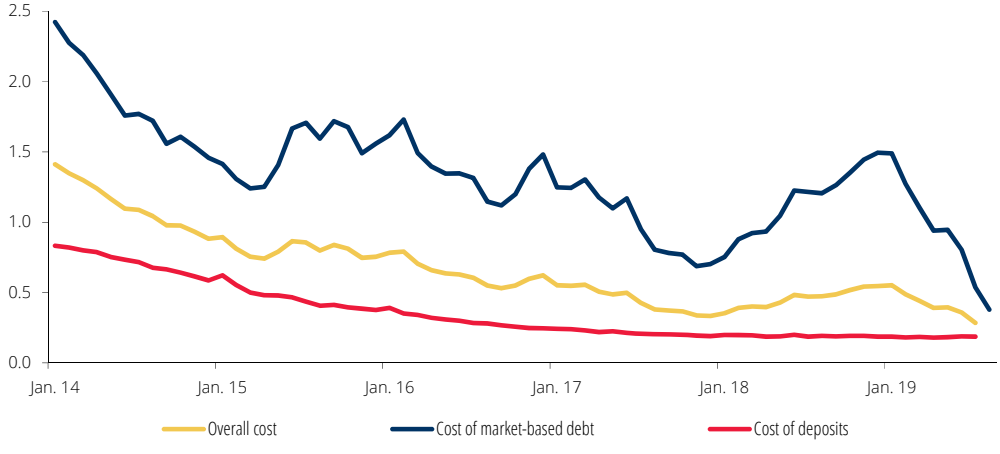
Monetary and financial conditions in the euro area have become more accommodative

Monetary and financial conditions in the euro area have become more accommodative in the course of 2019, against a background of lower financial market volatility and a more expansionary monetary policy stance. Money market interest rates remained low. At the same time, sovereign debt yields decreased, with spreads against German bonds narrowing, and stock price indices rose. Improved financial conditions were broadly based across the main euro area countries, although some cross-country heterogeneity remains. Furthermore, the euro also depreciated slightly.

The financing conditions of non-financial corporations and households remained favourable in the euro area. Interest rates on loans to non-financial corporations and households remained very low. Growth of bank loans to non-financial corporations and households was relatively stable over the past few months (respectively, 3.9% and 3.4%, year on year, in July), albeit with mixed developments across countries. The *Bank Lending Survey* continued to suggest an increase in demand for loans. The low levels of interest rates were the main reason given for the increase in demand across segments, as well as, in the case of firms, financing needs related to investment and, for households, the favourable housing market outlook. In turn, credit standards tightened slightly, after easing substantially in the previous two years. In the case of non-financial corporations, this tightening mostly affected small and medium-sized enterprises and chiefly reflected factors associated with the banks' risk perception, more specifically concerns about the economic outlook, and greater risk aversion. In the survey released in April, banks indicated that the ECB's non-standard monetary policy measures continued to support the conditions applied to loans to non-financial corporations and households. In particular, the APP had a marginal effect on credit volumes while the negative deposit rate had a marked effect on interest rates on loans.

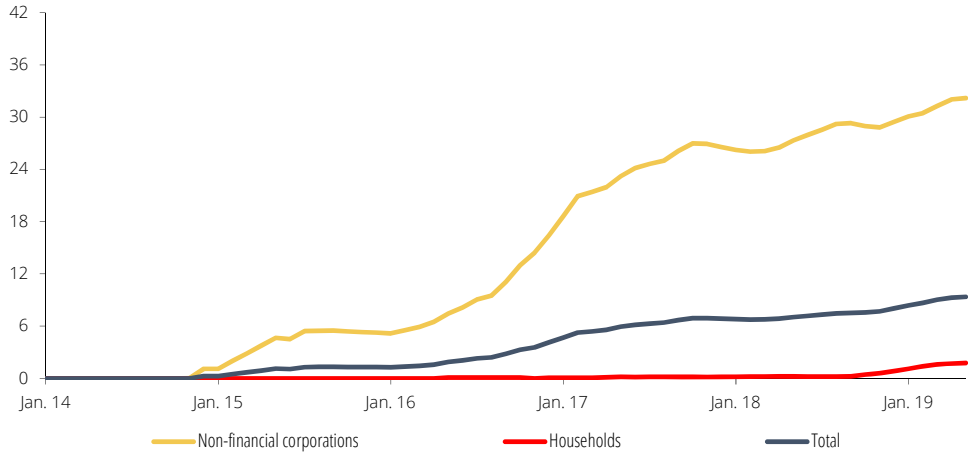
Bank financing costs have decreased since January, reflecting improving market debt conditions, but have yet to reverse the increase observed in the course of 2018 (Chart I.3.1). In turn, interest rates on new deposits have remained stable at historically low levels. The share of deposits in the euro area with negative interest rates is on the rise. These deposits are more common for non-financial corporations (Chart I.3.2). Despite very low interest rates, the volume of deposits with euro area banks has remained robust overall. The growth rate of deposits placed by non-financial corporations and households increased up to May (to approximately 5% in annual terms).

Chart I.3.1 • Banks' financing costs | Percentage



Source: ECB. | Notes: Overall cost is the weighted average cost of deposits (interest rates on new business) and implicit bond yields on debt issued by banks.

Chart I.3.2 • Share of deposits with negative rates in the euro area | Percentage, 6-month moving average



Source: ECB (Banco de Portugal calculations). | Notes: Share of deposits with negative rates for each type of deposit.

Box 1 • The recent extensions of the ECB's forward guidance and economic analysts' expectations about interest rate developments

In the wake of the global financial crisis, the central banks of the main advanced economies have substantially cut official interest rates and implemented non-standard measures with the purpose of strengthening the accommodative stance of monetary policy. One of these measures is the use of explicit statements about their intentions regarding the future path of policy interest rates (forward guidance), whose purpose is to directly influence economic agents' expectations regarding future policy. This box illustrates the behaviour of economic analysts' expectations regarding interest rate developments following the changes to forward guidance announced by the ECB's Governing Council in the first half of 2019.

The ECB's Governing Council began using forward guidance in July 2013, when it said that it expected key interest rates to remain at the "present levels or lower levels" (as they were then) for an extended period of time.[3] The forward guidance phrasing has been adjusted on several occasions. In March 2016, a sequencing was introduced between the evolution of the policy rate and the asset purchase programme (APP)[4] and, in June 2017, the Governing Council started to announce that it expected interest rates to remain "at present levels" instead of "at present or lower levels". In June 2018 the transition towards a possible policy normalisation began. With the purpose of reducing uncertainty about future interest rate developments, the Governing Council recast forward guidance, by introducing a date-contingent leg and an inflation-contingent leg.[5] The purpose of the date-contingent leg is to guarantee that the monetary policy stimulus is not weakened by premature expectations of interest rate increases. The aim of the inflation-contingent leg is to ensure that the monetary policy stance continues to evolve in a gradual, state-dependent manner, thus reinforcing the credibility of the Governing Council's commitment to the objective of price stability over the medium term.

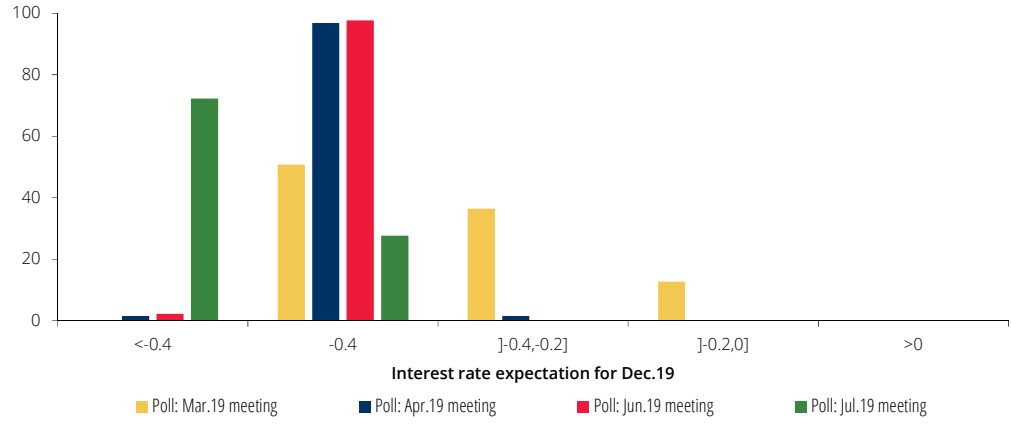
In the first half of 2019, after considering aspects including the moderation in the pace of economic expansion, the maintenance of inflation at relatively low levels, downward revisions to macroeconomic projections for the medium term and the persistence of uncertainty factors, the Governing Council announced two extensions of its forward guidance. In March 2019 the minimum period during which the Governing Council expected key interest rates to remain unchanged was extended to "at least through the end of 2019" and, in June 2019, to "at least through the first half of 2020".[6]

3. For more details, see the Special issue "Forward Guidance – communication about the future path of monetary policy", *Economic Bulletin*, Autumn 2013.
4. The phrasing changed to "for an extended period of time, and well past the horizon of our net asset purchases".
5. The Governing Council announced that it expected interest rates to remain at their (then prevailing) levels "at least through the summer of 2019" and in any case for as long as necessary to ensure the continued sustained convergence of inflation towards levels that are below, but close to, 2% over the medium term. This phrasing, introduced in July 2018, marginally differs from that of June.
6. In its September meeting, the Governing Council introduced new changes to the forward guidance phrasing regarding official interest rates. In particular, the phrasing no longer includes a time-contingent component, while the inflation-contingent component was reinforced. However, these changes are not analysed in this box.

To illustrate the behaviour of economic analysts' expectations regarding interest rate developments in the wake of these forward guidance extensions, we analyse the individual responses to the Reuters surveys released in the week prior to the Governing Council's monetary policy meetings. In particular, the distribution of analysts' expectations in the survey prior to the meeting where each extension was announced is compared to the respective distribution in the survey prior to the next meeting. Evidently, this analysis should be interpreted with caution, given that developments in respondents' expectations during this period will not solely reflect the impact of monetary policy announcements following the respective meetings. This analysis is supplemented by information on expected changes to the interest rate on the deposit facility derived from financial instruments.

Charts C1.1 and C1.2 illustrate the distribution of analysts' expectations regarding developments in the interest rate on the deposit facility up to the end of 2019 and mid-2020. Prior to the March meeting, approximately half of the respondents expected at least one increase in the interest rate on the deposit facility (which stood at -0.4%) in the second half of the year. In the following survey, nearly all analysts expected the interest rate to remain unchanged up to the end of the year, and a substantial number of analysts revised downwards their expectations for the levels to be reached in the first half of 2020. This information suggests that Governing Council's announcement of an extension of forward guidance until the end of 2019 was effective.[7] The effectiveness of the ECB's announcement in the March meeting is supported by information derived from financial instruments, which shows that the implicit probability of at least one increase in the rate on the deposit facility up to the end of 2019 decreased significantly following the announcement, and converged towards zero over the following weeks (Chart C1.3).

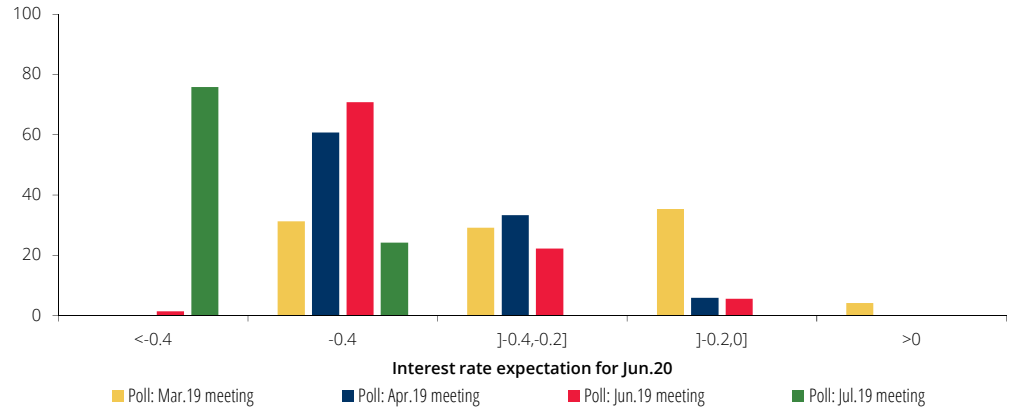
Chart C1.1 • Expectations regarding the evolution of the deposit facility interest rate until the end of 2019 | Percentage of respondents



Source: Reuters (Banco de Portugal calculations). | Notes: Distribution of the point forecasts of the analysts that responded to the Reuters polls before the ECB Governing Council's monetary policy meetings of: 7 March (yellow), 10 April (blue), 6 June (red) and 25 July (green).

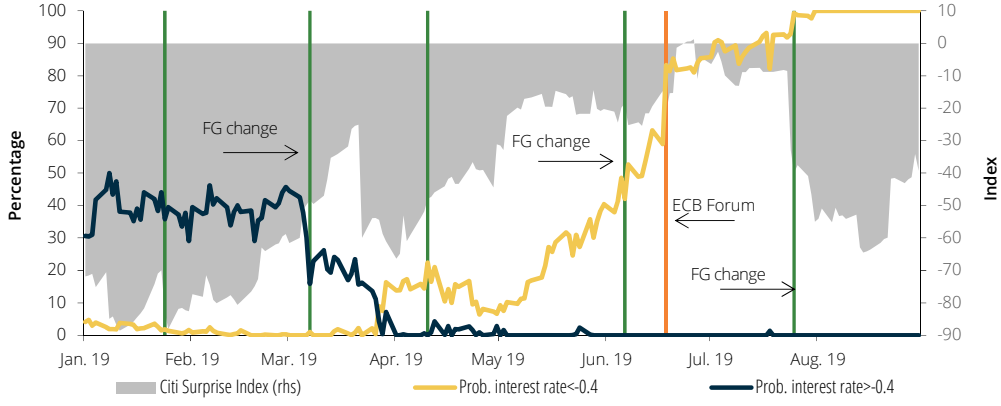
7. Survey data for the June 2018 meeting, when the time-contingent component was initially introduced, also suggests that its communication was effective. In the survey prior to the meeting, approximately 65% of analysts expected at least one increase in the interest rate up to June 2019, while in the following survey those expectations were virtually eliminated.

Chart C1.2 • Expectations regarding the evolution of the deposit facility interest rate until mid-2020 | Percentage of respondents



Source: Reuters (Banco de Portugal calculations). | Notes: Distribution of the point forecasts of the analysts that responded to the Reuters polls before the ECB Governing Council's monetary policy meetings of: 7 March (yellow), 10 April (blue), 6 June (red) and 25 July (green).

Chart C1.3 • Probability of changes in the deposit facility interest rate until the end of 2019 implicit in financial maket instruments



Sources: Bloomberg and Refinitiv (Banco de Portugal calculations). | Notes: Citi Surprise Index – Citigroup Inc, indicator that measures if published economic indicators have in general been above (index > 0) or below (index < 0) the Bloomberg survey median. The presented probabilities are calculated based on overnight index swaps, assuming 10 bp changes in the interest rate. The green bars correspond to the dates of the ECB Governing Council monetary policy meetings. The orange bar corresponds to date of the ECB Forum.

The Reuters survey findings for the June 2019 meeting also suggest that communication was effective in eliminating expectations of interest rate increases in the period during which the Governing Council expected them to remain unchanged (Charts C1.1 and C1.2). Prior to the meeting, approximately 30% of respondents expected at least one increase in the interest rate in the first half of 2020, while in the following survey those expectations were eliminated. However, in the survey conducted prior to the July meeting, a wide group of analysts started to expect at least one interest rate cut up to the end of 2019, reflecting the fact that the introduction of an easing bias in the forward guidance phrasing at the ECB's July meeting was widely anticipated.[8] In that survey, two-thirds of the analysts anticipated the change that was later implemented.

8. In July, the wording "at present levels" was replaced with "at present or lower levels".

Analysts' expectations of interest rate cuts seem to have reflected the persistence of downside macroeconomic risks, as illustrated by the release of several lower than expected economic indicators (Chart C1.3), as well as the President of the ECB's speech at the ECB Forum in mid-June.[9] On that date, the probability assigned to interest rate cuts by the end of the year increased markedly, to approximately 80%, reinforcing its upward path, and remained at around 100% from the July meeting onwards (Chart C1.3). Furthermore, according to the Reuters survey data on economic indicators released prior to the July ECB meeting, around 60% of the analysts that revised downwards the expectations on interest rate developments also revised the outlook for inflation or economic growth developments, suggesting that other factors influenced developments in interest rate expectations.[10]

Although the information analysed in this box should be interpreted with caution, it seems to suggest that the Governing Council's communication on key policy interest rate developments during the first half of 2019 was effective.

9. The President of the ECB mentioned that further cuts in policy interest rates remain part of the central bank's tools to respond to any challenges to price stability and that this had been one of the options raised and discussed at the June meeting.
10. Taking into account only those analysts who participated in both the surveys on interest rate developments and the surveys on economic indicators released prior to the June and July ECB meetings.

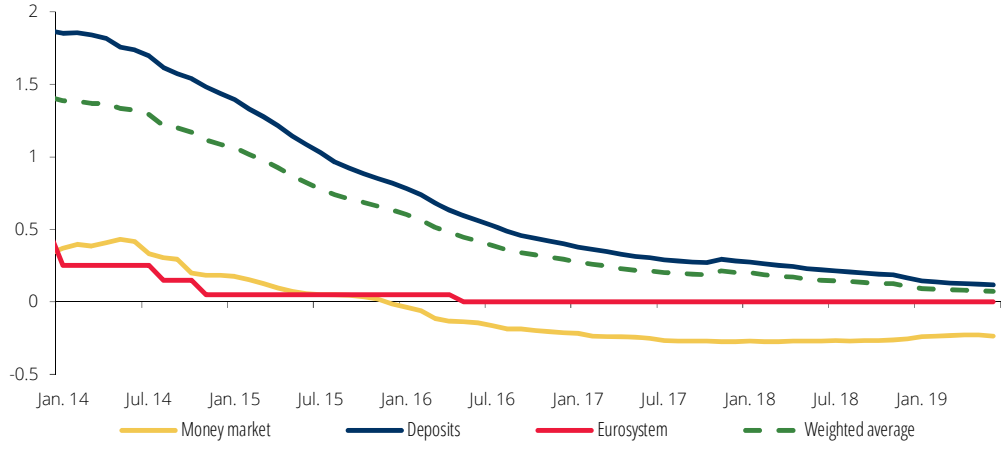
3.2 Portugal

The financing conditions of resident banks improved slightly in the first half of 2019

Portuguese banks continued to benefit from a progressive easing in financing conditions. Interest rates on deposits of firms and households continued to decline slightly, edging down to historical lows (Chart I.3.3). The ECB's non-standard measures continue to ensure accommodative monetary and financial conditions. In particular, targeted longer-term refinancing operations made it possible for banks to borrow long term at very low (or even negative) rates, thereby supporting lending to the economy, more specifically to non-financial corporations (see the box in the "*Bank Lending Survey* – Results for Portugal July 2019").

The cost of debt-market financing to banks continues to stand above that obtained through other sources of financing. Nonetheless, spreads on credit default swaps narrowed, reflecting a lower risk premium associated with Portuguese banks, after a period of greater political uncertainty in a number of euro area countries, most notably Italy. In this respect, in the *Bank Lending Survey*, banks indicated an improvement in financing conditions through debt securities, particularly as regards medium and long-term instruments.

Chart I.3.3 • Cost of funding of Portuguese banks | Percentage

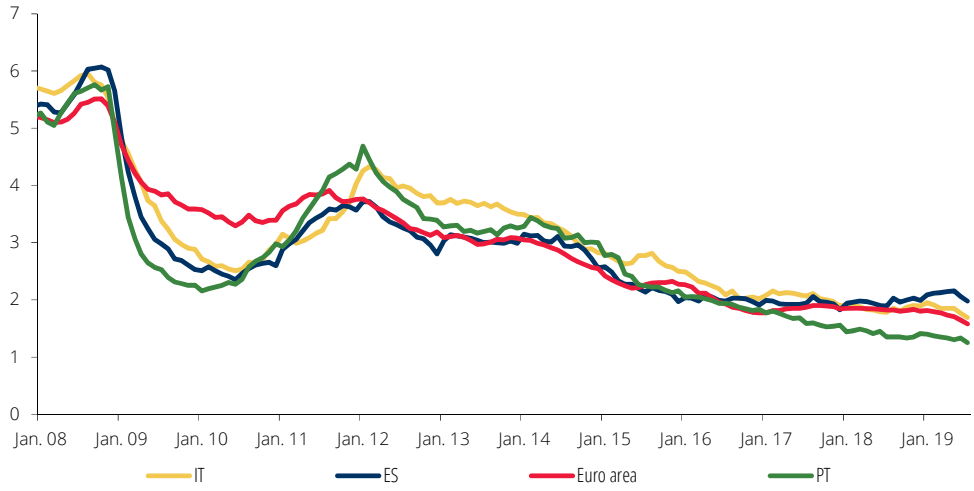


Sources: Refinitiv and Banco de Portugal. | Notes: The cost of deposit financing corresponds to the interest rate on outstanding balances of firms' and households' deposits, the cost of financing with the Eurosystem corresponds to the rate of main refinancing operations and the cost of money market financing corresponds to 6-month Euribor. The weighted average is calculated according to the relative weight of these three banks' funding sources. As of June 2019, these sources of financing accounted for 97% of total liabilities (consolidated data).

Interest rates on new loans to households remained stable at historically low levels

In the first half of 2019 interest rates on new bank loans for house purchase remained relatively stable at around 1.35%, interrupting the downward trend that had started in 2012 (Chart I.3.4). Interest rate levels in Portugal have been below the euro area average since early 2017, which seems to be related to a greater share of loans with a floating rate compared with other euro area countries with similar financing conditions.

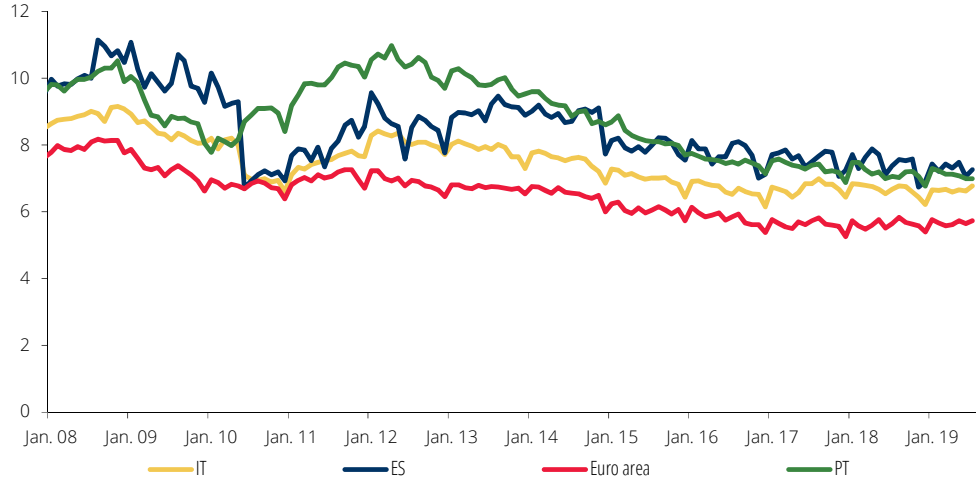
Chart I.3.4 • Interest rates on new housing loans granted by resident banks to households | Percentage



Source: ECB. | Note: Average annualized agreed rates (AAR) are calculated based on the AAR of new contracts by initial fixation period, weighted by the value of the transactions in each period.

In consumer credit, interest rates on new bank loans remained relatively stable compared to the end of 2018 (Chart I.3.5). Interest rate levels are in line with the rates applied in Spain, but above the euro area average.

Chart I.3.5 • Interest rates on new consumption loans granted by resident banks to households | Percentage



Source: ECB. | Note: Average annualized agreed rates (AAR) are calculated based on the AAR of new contracts by initial fixation period, weighted by the value of the transactions in each period.

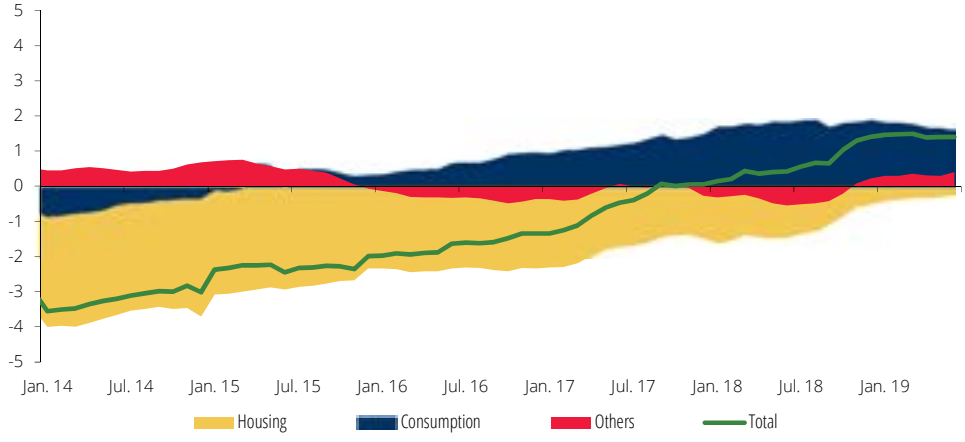
Household debt as a percentage of disposable income decreased further, although credit has increased

Household debt as a percentage of disposable income decreased further, extending the downward profile observed since the second quarter of 2012 and moving closer to the euro area average.

These developments reflect the combination of a stabilisation in household debt in nominal terms and an increase in disposable income. At the end of the first quarter of 2019 this ratio stood at 103%, i.e. above the euro area average (97%).

At the end of the first half of 2019 the annual rate of change in total credit to households stood at 1.4% (Chart I.3.6). The main contribution to this change was made by consumer loans, which, nevertheless, decelerated. By contrast, housing loans made a negative contribution to credit growth, with a negative annual rate of change. This contraction reflects the fact that the volume of repayments remains above that of new loans (Box 2 in the May 2018 *Economic Bulletin*).

Chart I.3.6 • Contributions to the annual rate of change of credit to households by purpose
| Percentage and percentage points



Source: Banco de Portugal.

New bank loans to households for house purchase stabilised, but decreased slightly in the consumer credit segment

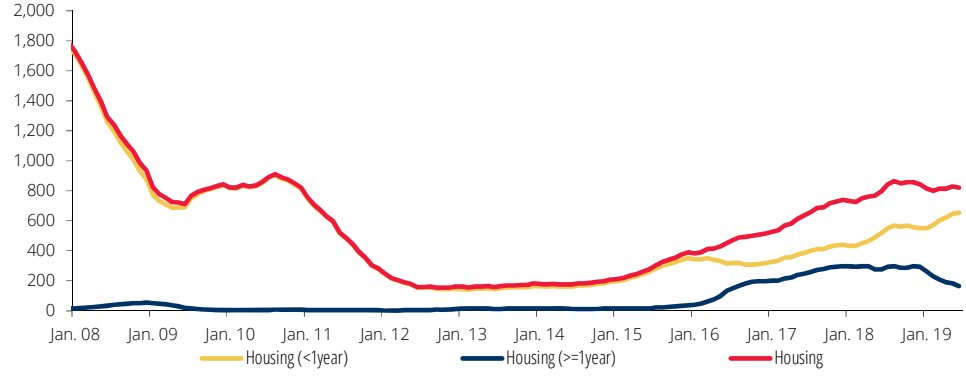
The amount of new bank loans to households for house purchase remained stable, after several years of continued growth (Chart I.3.7). The actual value is markedly below the amounts granted in the period prior to the international financial crisis. Underlying developments in new loans for house purchase in the first six months of 2019 is the more buoyant lending with a floating rate (with an initial fixation period of less than one year), which offset the decrease in loans with a benchmark interest rate fixation period of over one year. According to the *Bank Lending Survey*, demand for credit by households was virtually unchanged, reflecting two opposing forces: the low interest rate levels stimulated demand, while the macroprudential measure applied by Banco de Portugal seems to have exerted downward pressure.[11]

The stabilisation of new bank loans to households is in line with a slight moderation in real estate market transactions and prices since the second half of 2018, despite its still strong momentum

11. In this regard, Banco de Portugal decided to implement a macroprudential measure on 1 July 2018, in the form of a recommendation, to ensure that credit institutions and financial corporations do not take on excessive risks in granting new loans and that borrowers have access to sustainable financing.

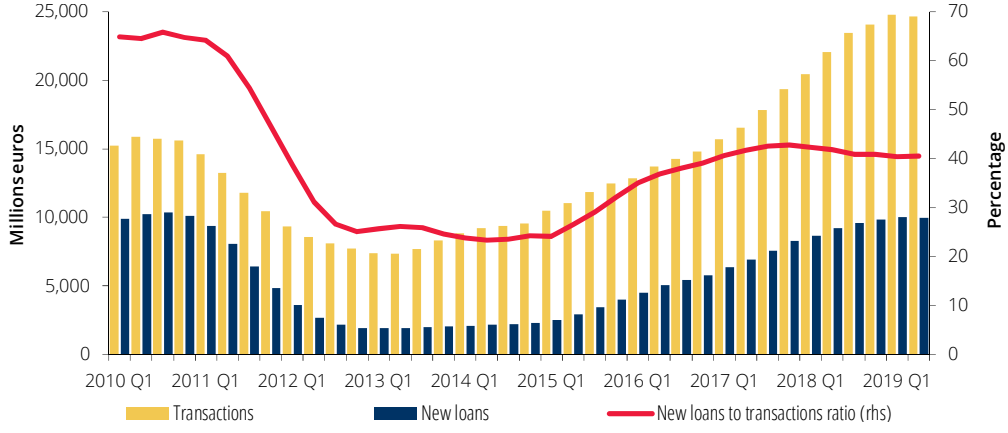
(*Financial Stability Report*, June 2019). The ratio of new loans for house purchase to the total amount of transactions of housing units in Portugal decreased slightly in the first half of 2019, to stand at around 40% (Chart I.3.8). This ratio is currently well below its level prior to 2011, which reflects a weaker link between the real estate price dynamics and Portuguese banks' exposure.

Chart I.3.7 • New housing loans granted by resident banks to households | Millions of euros (6-month moving average)



Source: Banco de Portugal. | Note: Amount of new loans granted by resident financial institutions. The breakdown by maturity refers to the initial interest rate fixation period.

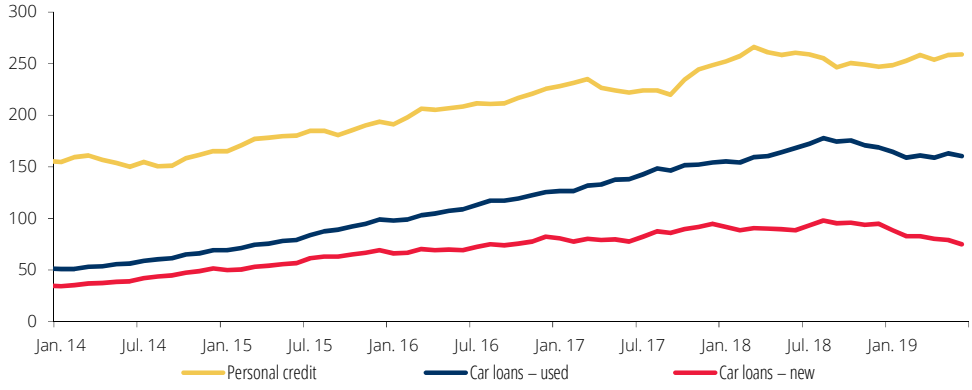
Chart I.3.8 • Households' housing transactions and new housing loans | Millions of euros and percentage



Source: Statistics Portugal (Banco de Portugal calculations). | Note: 12-month cumulative values.

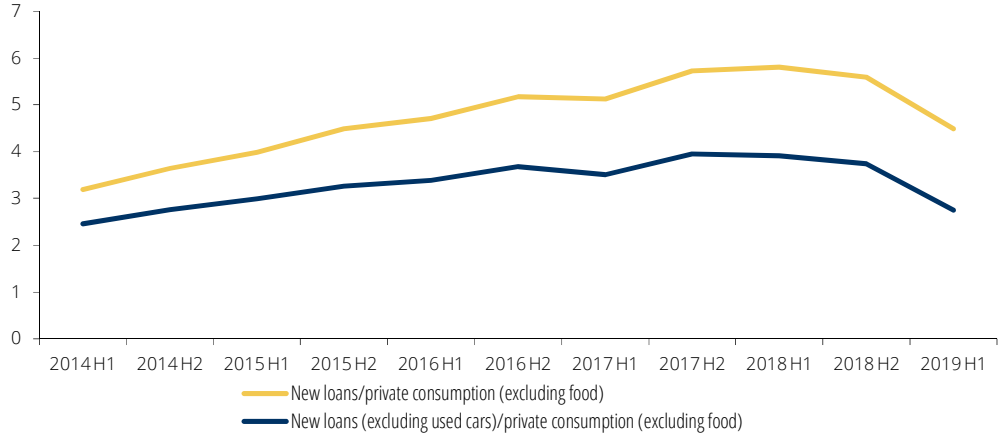
The amount of new bank loans to households for consumption decreased somewhat in the first half of 2019. Nevertheless, new lending remained above the levels seen in the period prior to the financial crisis. The decrease in consumer credit reflected developments in new car loans, particularly for the purchase of new cars (Chart I.3.9). This decrease seems to be related to the deceleration in private consumption of durable goods, mainly due to a fall in light passenger cars purchases (Chapter 6). The proportion of consumption financed by credit declined markedly, reversing the trend seen over the past few years (Chart I.3.10).

Chart I.3.9 • New consumption loans by credit category | Millions of euros (6-month moving average)



Source: Banco de Portugal. | Note: Does not include revolving credit (credit cards, credit lines, current bank accounts and overdraft facilities), as the amounts for this type of credit correspond to ceilings rather than effective credit.

Chart I.3.10 • New loans for consumption granted by resident financial institutions | As percentage of private consumption excluding food expenditures



Sources: Statistics Portugal and Banco de Portugal. | Notes: Consumption credit does not include revolving credit (credit cards, credit lines, current bank accounts and overdraft facilities), as the amounts for this type of credit correspond to ceilings rather than effecive credit. The indicator that excludes credit for the acquisition of used cars is also presented, given that a part of these acquisitions is not accounted for in private consumption.

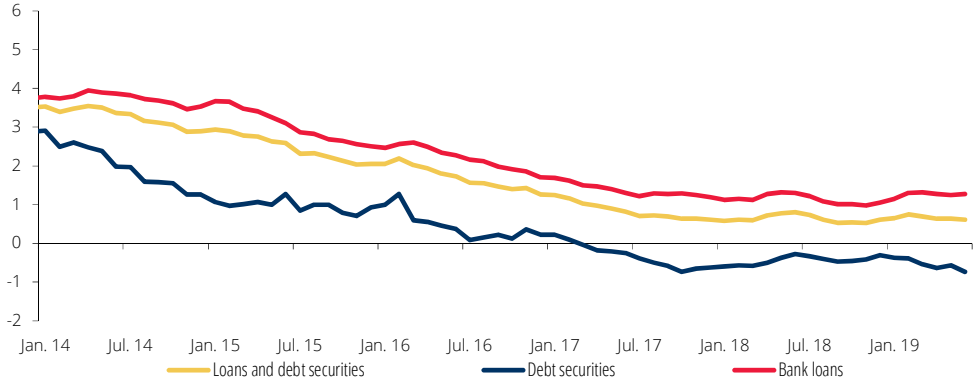
The cost of financing of firms remained at historically low levels

The cost of financing of non-financial corporations, in real terms, remained at historically low levels in the first half of 2019 (Chart I.3.11). The cost of financing through loans rose somewhat in the first half of 2019, by contrast to the slight reduction in the cost of financing through debt securities.

In the half-year under review, nominal interest rates on new bank loans to non-financial corporations were relatively stable, at around 2.3%. The positive spread *vis-à-vis* the average interest rate on loans to euro area non-financial corporations also remained stable at levels close to those seen

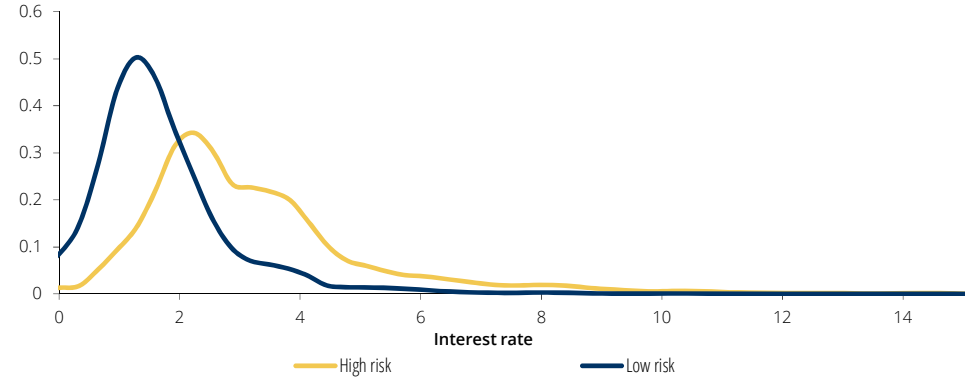
prior to the economic and financial crisis. Average interest rates on new loans granted to high-risk firms continued to be higher than observed in loans to low-risk firms, and continued to be more widely dispersed (Chart I.3.12).

Chart I.3.11 • Cost of funding of non-financial corporations (loans and debt securities), in real terms | Percentage



Sources: Barclays, Consensus Economics, Refinitiv and Banco de Portugal. | Notes: The cost of funding with bank loans, short-term debt securities and long-term debt securities is measured, respectively, by the interest rates on new loans granted by resident banks, interest rates on commercial paper and the yield implicit in the Barclays index for bonds issued by Portuguese non-financial corporations. In order to deflate the nominal values, Consensus Economics' inflation expectations for horizons comparable with the maturities of the different instruments were used.

Chart I.3.12 • Distribution of interest rates on new loans granted by resident financial institutions to private non-financial corporations by credit risk profile in the 2nd quarter of 2019 | Density



Source: Banco de Portugal. | Notes: Interest rates are weighted by loan amounts. The sample includes for-profit private non-financial corporations. Low (high) risk corporations lie in the first (last) quartile 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.

The debt of non-financial corporations as a percentage of GDP continued to decline, although credit increased

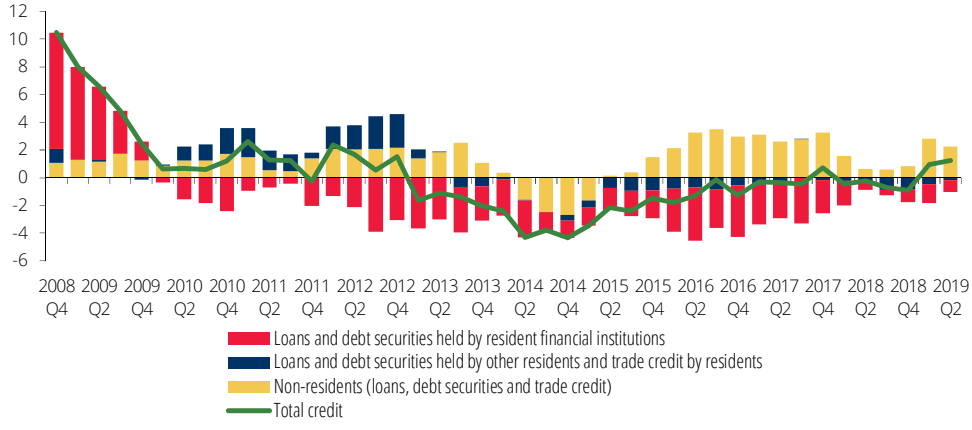
The debt (comprising loans, debt securities and trade credit) of non-financial corporations as a percentage of GDP continued on the downward path seen since the beginning of 2013, chiefly as a result of an increase in nominal GDP. This ratio is at levels that are very close to the euro area average. The ratio of debt to assets (leverage ratio) of Portuguese firms also continued to decrease against a background of a general reduction in the euro area, although Portuguese firms continue to

be substantially more leveraged than the euro area average. Firms that invested the most in the past few quarters are more leveraged and at the same time have greater capacity to generate income and pay interest on their debt (Box 2).

The stock of total credit to non-financial corporations increased slightly, reflecting financing from non-residents

The stock of total credit to non-financial corporations, which covers bank credit, financing by other resident financial institutions and loans from other creditors (resident and non-resident), increased slightly (Chart I.3.13). The year-on-year rate of change stood at 1.2% in June 2019, a considerable recovery since the end of 2018. Similarly to developments over the past few years, the share of non-residents in corporate financing continued to increase, while that of resident financial institutions and other resident creditors declined (Chapter 8). The increase in the stock of credit by non-residents was broadly based across all debt instruments (loans, debt securities and trade credit).

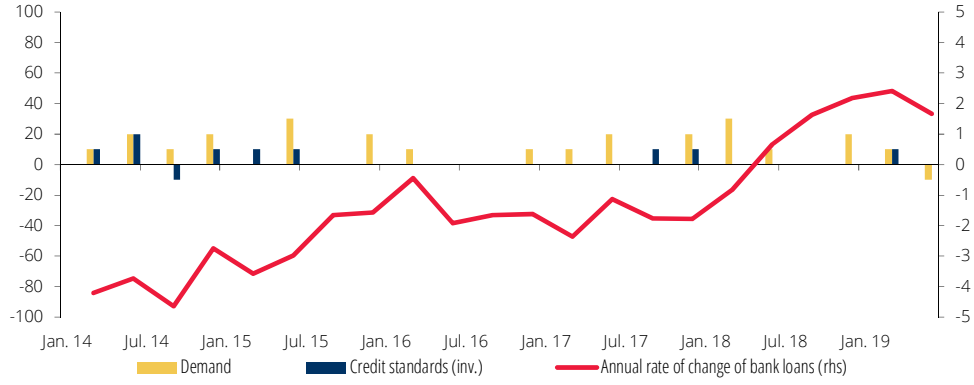
Chart I.3.13 • Contributions to the year-on-year rate of change of total credit to non-financial corporations by funding sector | Percentage and percentage points



Source: Banco de Portugal. | Notes: Total credit includes loans, debt securities and trade credit (trade credit between resident firms are excluded). Year-on-year rates of change are computed based on the relation between end-of-month outstanding amounts and no adjustments are done regarding sales, reclassifications, write-offs and exchange rate and price revaluations.

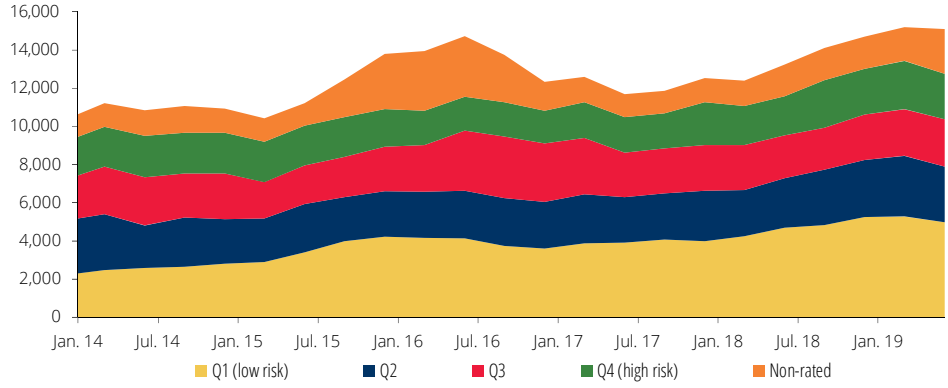
The stock of credit in the portfolio of resident financial institutions decreased against a background where the annual rate of change in bank credit is in positive territory (Chart I.3.14). The aim of the annual rate of change is to measure the change in stocks, adjusted for a set of effects, such as the sale of credit portfolios and write-offs, while the year-on-year rate of change is determined by the change in stocks of credit. These effects explain the difference between both measures. Therefore, although resident banks have continued to reduce their exposure to firms, as has been the case since 2010, transaction flows were positive in the first half of 2019, adjusted for sales and write-offs. In addition, new bank credit (loans and securities) to firms with contractual maturity of over one year increased in the first half of 2019, although at a slower pace than in 2018 (Chart I.3.15).

Chart I.3.14 • Demand and supply of loans granted by resident banks to non-financial corporations | Diffusion index and annual rate of change in percentage



Source: Banco de Portugal. | Notes: The diffusion index is computed based on the *Bank Lending Survey* and it is the difference between the weighted sum of the percentage of responses of "eased" and the weighted sum of the percentage of responses of "tightened". The weights are defined according to the intensity of the change in each of the directions: if "considerably" it is 1 and if "somewhat" it is 0.5. The diffusion index varies from -100 to 100. Values higher (lower) than zero imply a deterioration (improvement) of financing conditions in the previous three months. The value zero corresponds to the "unchanged" situation.

Chart I.3.15 • New credit granted by resident banks to non-financial corporations with contractual maturity above 1 year by risk quartile | Millions of euros (accumulated 12 months)



Source: Banco de Portugal. | Notes: Bank credit is defined as the aggregate of bank loans and securities held by resident banks. Only new credits with a contractual term greater than or equal to 1 year are presented in order to mitigate the effect of frequent refinancing of short maturity credits. 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 credit is considered non-rated when there is no information regarding the company to which the credit has been granted or the accounting information available is not sufficient to estimate a probability of default.

According to the *Bank Lending Survey*, firms increased their demand for short-term loans in the first quarter of 2019 and decreased their demand for long-term loans in the second quarter. Overall, credit standards and terms and conditions on loans to firms remained broadly unchanged compared with the previous half-year (Chart I.3.14).

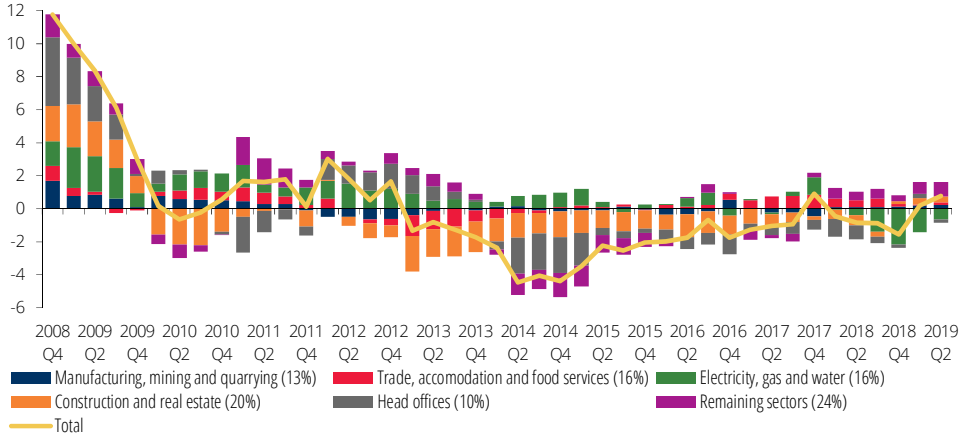
New bank credit increased in most of the main sectors

Annual rates of change in total credit and bank credit to non-financial corporations were positive for all of the main sectors of activity, excluding electricity, gas and water, where they declined markedly. Bank credit recorded particularly high growth in construction and real estate activities, interrupting the

decline in corporate indebtedness in this sector observed since the beginning of 2010 (Chart I.3.16). The increase in loans to construction was accompanied by an acceleration in GFCF in this sector (Chapter 6). According to the Survey on the Access to Finance of Enterprises (SAFE), Portuguese small and medium-sized enterprises (SMEs) improved their perception of the financing environment and reported one of the greatest improvements in access to bank loans among euro area firms.[12] Nevertheless, the overall indicator of financing obstacles remained above the euro area average.

In contrast to recent years, new bank credit to firms continued to display rather homogeneous developments by risk quartile (Chart I.3.15). The share of lower-risk credit in total new credit granted by the banking system stabilised. This is related to developments in new bank credit to construction and real estate activities, as firms in this sector have on average a higher level of risk.

Chart I.3.16 • Contributions to the year-on-year rate of change of total credit to non-financial corporations by sector of activity | Percentage and percentage points



Source: Banco de Portugal. | Notes: Total credit includes loans, debt securities and trade credit (trade credit between resident firms are excluded). Year-on-year rates of change are computed based on the relation between end-of-month outstanding amounts and no adjustments are done regarding sales, reclassifications, write-offs and exchange rate and price revaluations. In the caption, the values in parentheses correspond to each sector weight on total credit granted to non-financial corporation as of June 2019.

12. The countries where SMEs reported a greater improvement in their access to bank loans were Spain, Ireland and Portugal.

Box 2 • Firms' investment and leverage in Portugal

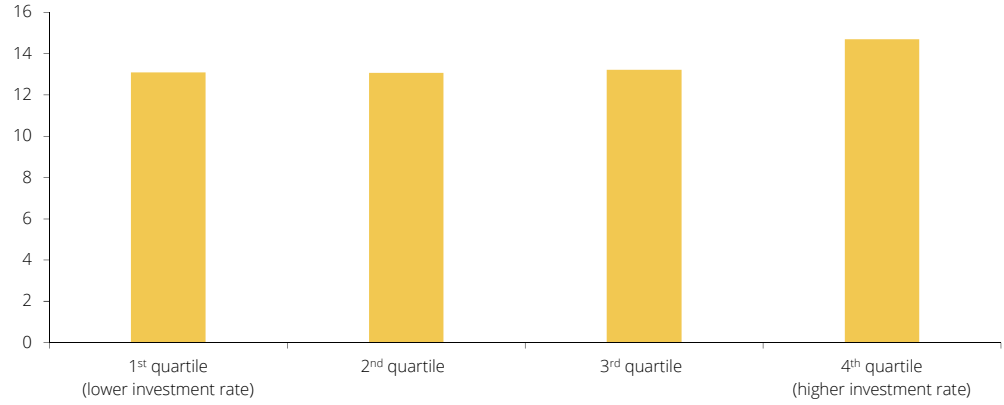
The last few quarters have featured a rebound in investment, in a context of slight acceleration in credit granted to Portuguese firms. This box illustrates the extent to which these dimensions are related, while characterising firms that have recorded higher investment rates in Portugal.

Firms' accounting data reported in the *Quarterly Survey of Non-financial Corporations* (ITENF, in its Portuguese acronym) are used to answer this question. This survey is held on a sample of approximately 4000 firms and includes the main balance sheet and profit and loss account items. Smaller-sized firms are underrepresented, but their contribution to the Portuguese economy's total investment is much lower than that of larger-sized firms. Investment is defined as the change in tangible and intangible fixed assets plus depreciation in the period, as a percentage of the firm's total assets. This measure, referred to in this box as investment rate, makes it possible to analyse which firms have invested the most considering their size. Given data availability, this box takes into account the last four quarters of the survey, i.e. the period between the second quarter of 2018 and the first quarter of 2019.

Three financial indicators have been selected to characterise firms: a financial leverage measure corresponding to the share of firms' assets funded through financial debt; a measure of financial pressure, assessed based on the interest burden on operating income (EBITDA), and a measure of profitability, calculated through the ratio of operating income to total assets. The sample is divided into four quartiles for each quarter, depending on the investment rate level. Subsequently, the average of each one of the financial indicators is calculated for each quartile. The investment rate between the different quartiles varies between -1% and 13%. Although it is not possible to infer causality, the analysis of these three indicators for firms with different investment profiles leads to some important conclusions.

As illustrated in Chart C2.1, firms that invest the most (quartile 4 of the investment rate) are those that on average have higher leverage, with a slight difference from the other quartiles. Accordingly, these firms also increased their leverage in the period under review (Chart C2.2). In contrast, firms that invested the least (quartiles 1, 2 and 3) reduced their leverage. This micro analysis shows different trends in the Portuguese corporate sector. On the one hand, some firms continue to deleverage, showing lower investment rates (in some cases negative), while firms that invest the most have been slightly increasing their leverage.

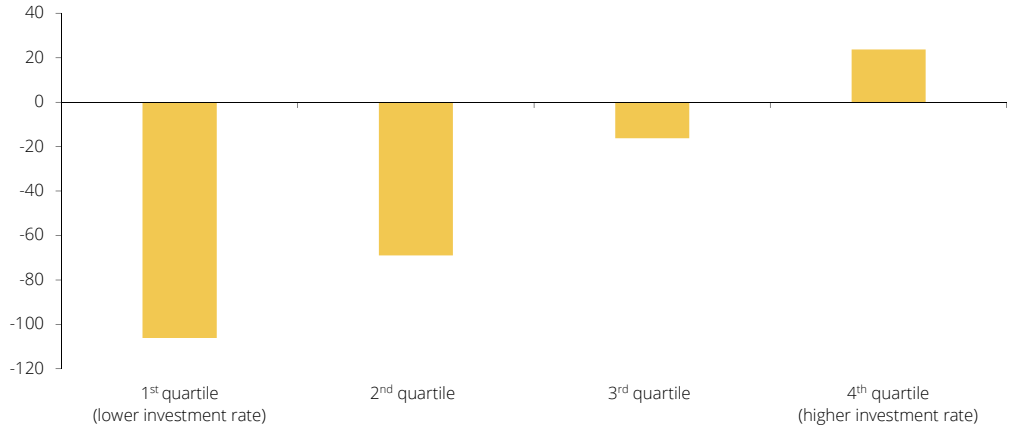
Chart C2.1 • Firms' average leverage by quartiles of the investment rate | Percentage



Source: Banco de Portugal.

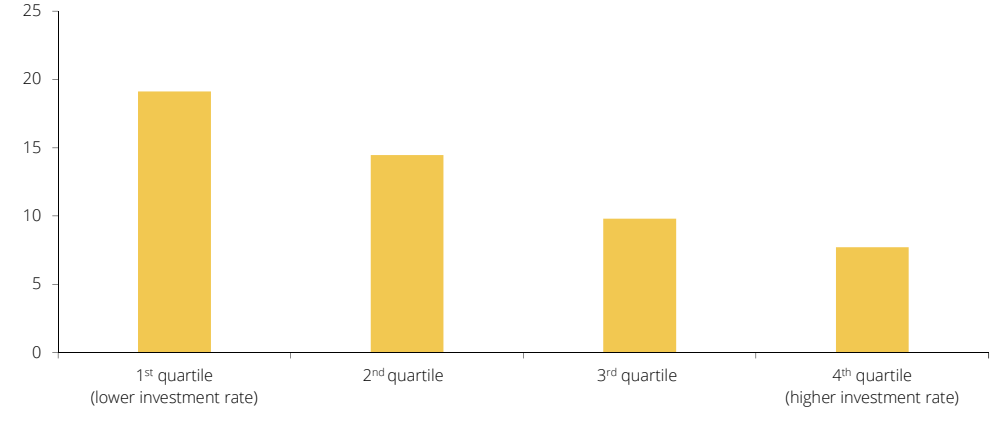
To further characterise this segmentation it is important to assess corporate financing conditions. For this, the ratio of interest expenses to operating income is considered as an indicator of a firm's financial pressure. The higher the ratio the lower the firm's ability to channel the generated funds to something other than interest payment. Data analysis shows that firms with a higher investment rate have a lower interest burden, despite their higher leverage on average (Chart C2.3). This can be accounted for by the lower risk level of these firms, which allows them to benefit from lower interest rates and fewer constraints on credit access.

Chart C2.2 • Average change in leverage by quartiles of the investment rate | Basis points



Source: Banco de Portugal. | Note: Change in leverage is equal to the year-on-year change in the level of leverage.

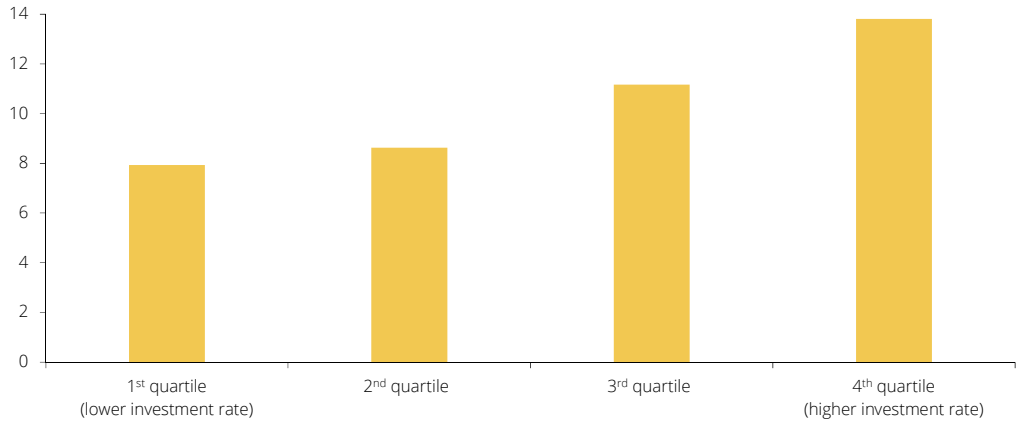
Chart C2.3 • Average weight of interest paid on operating income by quartiles of the investment rate | Percentage



Source: Banco de Portugal.

A firm's profitability ratio is another indicator of its financial health. The higher a firm's profitability the greater its financial availability to invest. Again, firms with higher investment rates have the highest profitability (Chart C2.4).

Chart C2.4 • Firms' average profitability by quartiles of the investment rate | Percentage



Source: Banco de Portugal.

In sum, firms with a higher investment rate in the past few quarters show slightly higher leverage levels and increased their leverage in the course of last year. This suggests that the gradual recovery of credit to firms might be associated with investment growth observed in the Portuguese economy. At the same time, firms that invested the most have fewer financial constraints, recording a lower interest burden on operating income and higher profitability levels, which is consistent with the empirical evidence on this topic (Fazzari et al., 1988[13]; Farinha and Prego, 2013[14]).

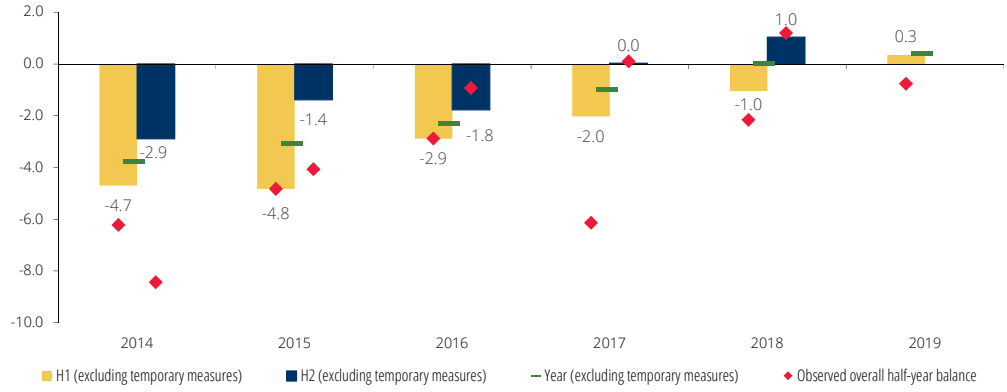
13. Fazzari, S., Hubbard, R., and Petersen, B. (1988). "Financing Constraints and Corporate Investment." *Brookings Papers on Economic Activity*, 1988 (1), 141-206.
14. Farinha, L. and Prego, P. (2013), "Investment Decisions and Financial Standing of Portuguese Firms – Recent evidence", *Financial Stability Report*, Banco de Portugal, May, 105–125.

4 Public finances

The general government deficit was 1.4 p.p. lower in the first half of 2019 than in the same period of the previous year

According to the quarterly national accounts released by Statistics Portugal, the general government balance stood at -0.8% of GDP in the first half of 2019, driven by a primary surplus of 2.3% of GDP. Compared with the same period one year earlier, the balance posted an improvement of 1.4 p.p. (Chart I.4.1). In turn, the balance excluding the effect of temporary measures recorded similar developments, reaching a surplus of 0.3% of GDP.[15] Year-on-year developments stemmed from an increase in revenue-to-GDP ratio (0.8 p.p.), together with a decrease in primary expenditure and interest outlays as a percentage of GDP (0.4 and 0.2 p.p. respectively).

Chart I.4.1 • General government budget balance: headline and excluding temporary measures
| As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal. | Notes: The overall balance excluding temporary measures for 2019 corresponds to the official target. The adjusted balance excludes the following one-off effects: 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 Novo Banco; in 2015, the resolution measure applied to Banif; in 2016, the temporary effect of PERES and the reimbursement of the prepaid margin; in 2017, capital injection into Caixa Geral de Depósitos and the recovery of the BPP guarantee; in 2018, transfer from the Resolution Fund to Novo Banco, a decision by the Supreme Court regarding the payment of an indemnity, expenditure related to the 2017 wildfires and the recovery of the BPP guarantee; in 2019, the capital injection in Novo Banco, the impact of court decisions relative to the Lisbon municipality, the recovery of the remaining BPP guarantee and the impact of the tobacco tax anticipation.

The official deficit target for this year (0.2% of GDP), established in the State Budget for 2019 and kept unchanged in the Stability Programme update and recent notification of the Excessive Deficit Procedure, seems clearly feasible, in particular taking into account the intra-annual profile of the budget balance in the recent past. However, there is still some uncertainty regarding budgetary

15. In the first half of 2019, the adjusted balance excludes the capital injection into Novo Banco by the Resolution Fund (1.1% of GDP). In the same period of 2018, temporary measures included the capital injection into Novo Banco, the impact of the Supreme Court of Justice's ruling regarding the payment of an indemnity and expenditure relating to the 2017 wildfires.

developments until the end of the year. On the revenue side, there is uncertainty about developments in direct taxes, in particular the difference between refunds and additional payments both regarding 2018 personal incomes. On the expenditure side, compensation of employees is highly affected by the ongoing unfreezing of careers and by an increase in the number of civil servants, in particular in sectors with higher budgetary pressures, such as the health sector. Furthermore, items with a typically more irregular intra-annual profile, which grew below budget in the first half of the year, such as intermediate consumption and investment, make it more difficult to assess the forecast for the year as a whole. Finally, the possible implementation of temporary measures (in addition to the capital injection into Novo Banco, which already occurred in the first half of the year) may also affect the budgetary outcome for the year as a whole.

In the first half of the year, current revenue grew above Stability Programme estimates

Current revenue increased by 5.5% in the first half of the year, 1.8 p.p. above the official forecast for the year as a whole (Table I.4.1). This resulted from significant contributions made by all main revenue components, reflecting a continued expansion of economic activity.

Taxes on income and wealth grew 3.5%, largely based on the positive performance of personal income tax revenue (at the time still not affected by the strong acceleration in refunds that occurred in July), with particular emphasis on the withholding tax on wage income. In turn, revenue from taxes on production and imports grew 4.7%, mainly driven by developments in VAT collection (5.7%). This tax revenue increased more than private consumption, in nominal terms, which may reflect a buoyant tourism sector and the base-effect associated with the 2018 change in the taxation of extra-EU imports. Despite the existing uncertainty about developments in the second half of the year, in particular about the impact of the additional payments related with 2018 incomes on the annual collection of personal income tax, tax revenue is expected to exceed the official forecast for the year. This is likely to be the case also for actual social contributions, which rose 7% in the first half of the year (approximately 2 p.p. above the official estimate).

As regards other current revenues, the relatively high growth stemmed from the materialisation of the expected increase in dividends received by the State and above-budget growth in revenue from sales of goods and services. In turn, capital revenue increased less than expected for the year as a whole.

Primary current expenditure increased moderately in the first half of the year, below the official forecast

Primary current expenditure posted a moderate increase in the first half of the year (2.9%), less than the official estimate for the year as a whole. This was mainly due to developments in intermediate consumption, which declined by 2.2% in the first half of the year, in contrast with an expected increase for the year as a whole. However, this item typically posts very irregular intra-annual developments.

Table I.4.1 • General government accounts | Millions of euros

	First half 2018	First half 2019	First half 2019 y-o-y (%)	Official yearly forecast y-o-y (%) [a]	2018	Memo: Benchmark revisions of national accounts [b]
Total revenue	**38,940.4**	**41,099.1**	**5.5**	**4.0**	**87,695.1**	**-18.6**
Current revenue	38,688.7	40,800.6	5.5	3.6	86,866.5	12.8
Tax and contributory revenue	32,989.9	34,531.5	4.7	3.1	75,472.0	-192.4
Taxes on income and wealth	7,033.6	7,276.6	3.5	1.4	20,680.7	-309.9
Taxes on production and imports	14,572.6	15,253.8	4.7	3.3	30,955.8	82.7
Social contributions	11,383.8	12,001.1	5.4	4.3	23,835.4	34.8
Actual	9,056.4	9,687.3	7.0	5.0	19,127.5	-7.8
Imputed	2,327.4	2,313.8	-0.6	1.5	4707.9	42.6
Other current revenue	5,698.8	6,269.1	10.0	7.2	11,394.6	205.2
Capital revenue	251.7	298.4	18.6	45.5	828.6	-31.4
Total expenditure	**41,095.5**	**41,888.3**	**1.9**	**3.3**	**88,606.0**	**-20.5**
Current expenditure	38,184.7	39,054.8	2.3	3.2	82,297.3	124.5
Social payments	16,582.3	17,116.7	3.2	4.1	37,098.7	349.0
in cash	14,877.5	15,271.9	2.7	3.7	33,472.5	338.5
in kind	1,704.9	1,844.8	8.2	7.2	3,626.2	10.4
Compensation of employees	10,574.7	10,957.9	3.6	3.1	21,835.2	70.4
Intermediate consumption	5,089.5	4,976.4	-2.2	3.1	11,067.4	137.4
Subsidies	343.1	369.9	7.8	1.6	750.5	-46.9
Interest	3,333.0	3,193.7	-4.2	-1.9	6,897.8	-57.7
Other current expenditure	2,262.0	2,440.2	7.9	5.2	4,647.7	-327.6
Capital expenditure	2,910.8	2,833.5	-2.7	4.8	6,308.8	-145.0
Gross fixed capital formation	1,481.2	1,574.2	6.3	10.5	3,794.7	-170.4
Other capital expenditure	1,429.6	1,259.4	-11.9	-4.3	2,514.0	25.4
Overall balance	**-2,155.0**	**-789.3**	**–**	**–**	**-910.9**	**1.9**
Overall balance (% of GDP)	**-2.2**	**-0.8**			**-0.4**	
Memo:						
Primary current expenditure	34,851.7	35,861.1	2.9	3.7	75,399.4	182.3

Sources: Statistics Portugal and Banco de Portugal. | Notes: (a) Official estimate underlying the Stability Programme for 2019-23. (b) Revisions of the accounts updated by Statistics Portugal in the second notification of the 2019 Excessive Deficit Procedure relative to the the 2018 account underlying the Stability Program.

In turn, compensation of employees recorded slightly higher first-half growth than expected for the year as a whole. This outcome is hard to evaluate due to the effect of the gradual unfreezing of civil servants' careers and uncertainty about developments in the number of civil servants, as mentioned above.

The increase in expenditure on social benefits in cash was moderate (a 2.7% increase), since the effect of pensions' annual update and extraordinary increase and further measures increasing expenditure was partly offset by a reduction in expenditure on unemployment benefits. In turn, social benefits in kind posted a significant increase (8.2%) which, in addition to healthcare expenditure, is also explained by the beginning of the programme supporting the reduction in the prices of public transportation. In the second half of the year, developments in this item are expected to be partly driven by the measure widening the free distribution of school manuals.

Turning to capital expenditure, investment grew considerably below the estimate for the year (6.3%, compared with 15.5% presented under the Excessive Deficit Procedure notification). Nonetheless, this item presents a fairly volatile intra-annual profile and its developments are partly related to the use of EU funds.

Public debt as a percentage of GDP maintained a downward path

At the end of the first half of 2019, the public debt-to-GDP ratio stood at 121.2%, which corresponds to 1 p.p. decline from the end of 2018.[16] This results from the impact of the primary surplus and the snowball effect (due to the negative differential between the average interest rate on the debt stock and the nominal GDP growth rate), which more than offset the positive deficit-debt adjustments. The latter largely reflect the increase in general government deposits. Indeed, excluding the deposits, the debt ratio decline amounts to 1.2 p.p. in this period (112.8% at the end of June, compared with 114% at the end of 2018).

In the course of the first half of 2019, the Portuguese State maintained a regular issuance of debt through different channels, attracting greater net external financing. As regards short-term issues, the average interest rate on Treasury bill auctions remained at 0.4%. similarly to the same period of 2018. Turning to developments in long-term rates, in the 10-year maturity range, the average auction rate was 1.2% in the first half of the year. i.e. 0.7 p.p. lower than one year earlier. These developments were reflected in the continued drop in the nominal value of interest expenditure in the first half of 2019 (4.2%), which also benefited from the last early repayment to the IMF at the end of 2018. Furthermore, Portugal was allowed to proceed with the early repayment of part of the loan granted by the European Financial Stability Facility under the Economic and Financial Assistance Programme, which will take place in the second half of the year. Estimates for the debt ratio at the end of 2019, released under the latest Excessive Deficit Procedure notification, stand at 119.3%.

16. Public debt was subject to a revision in August 2019 due to changes in the methodology for recording capitalised interest on saving certificates, following the new edition of the Manual on Government Deficit and Debt. This impact is partly offset by a denominator effect associated with the upward revision of nominal GDP by Statistics Portugal.

5 Supply

Gross value added was relatively stable in the first half of 2019

In the first half of 2019 gross value added (GVA) grew by 1.6%, in real terms, compared with the same period one year earlier, representing a quasi-stabilisation from 1.5% in the second half of 2018 (Table I.5.1). As in previous years, in the first half of 2019, GVA's year-on-year growth was below that of GDP (2.0%).[17]

GVA in the euro area slowed down slightly in the first half of 2019, growing 1.3% year on year in real terms (1.4% in the second half of 2018).

Table I.5.1 • GVA by activity sector | Year-on-year growth, percentage, unless otherwise stated

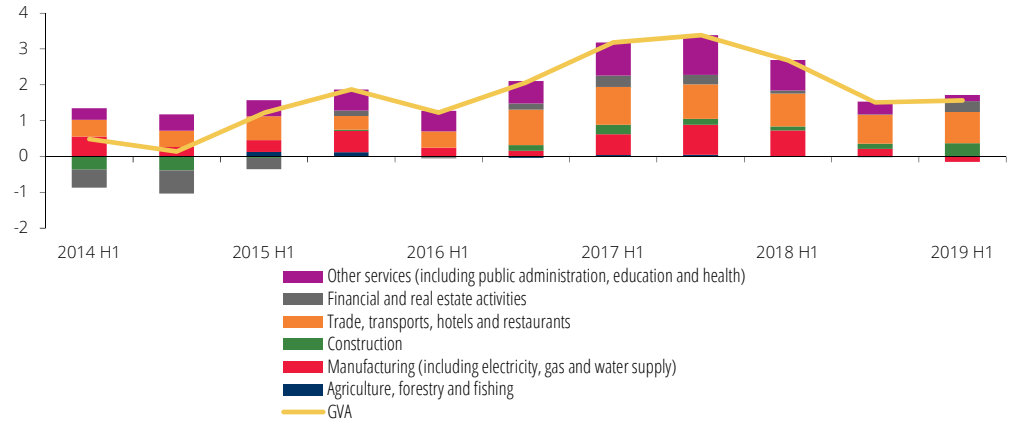
	% of GVA in 2018	2016	2017	2018	2018		2019
					H1	H2	H1
GVA	100.0	1.6	3.3	2.1	2.7	1.5	1.6
Agriculture, forestry and fishing	2.4	-1.2	2.0	-0.7	-0.4	-1.0	0.7
Manufacturing	14.4	2.2	5.9	1.6	3.4	-0.1	-0.9
Electricity, gas and water supply	3.6	-2.7	-3.6	6.2	6.3	6.1	-0.5
Construction	4.2	1.8	5.3	3.1	2.6	3.6	8.5
Services	75.5	1.9	3.1	2.0	2.5	1.6	1.8
Trade, repair, restaurants and hotels	19.9	3.7	2.7	3.8	3.8	3.8	3.1
Transport, storage, information and communication activities	8.4	0.0	5.6	1.3	2.1	0.6	2.9
Financial and real estate activities	17.4	0.4	1.7	0.3	0.5	0.1	1.8
Other services (including public administration, education and health)	29.8	2.0	3.4	2.0	2.9	1.2	0.6
Memo:							
Euro area	–	1.8	2.7	1.9	2.5	1.4	1.3

Sources: Eurostat and Statistics Portugal – National Accounts (Banco de Portugal calculations).

GVA growth in the first half of 2019 mainly reflects the contribution of the services sector (1.4 p.p.) and, to a lesser extent, construction (0.4 p.p.). In services, trade and accommodation and food activities continued to record high growth levels, in line with the developments in tourism, along with other services provided by firms (Table I.5.1 and Chart I.5.1). The deceleration of GVA since early 2018 reflects the less buoyant activity in manufacturing and, to a lesser extent, in agriculture, forestry and fishing. As in the second half of 2018, manufacturing GVA has declined in the first half of 2019, while agriculture, forestry and fishing GVA has reversed the downward path taken since the end of 2017.

17. The difference between GVA and GDP growth reflects statistical discrepancies as well as developments in taxes net of subsidies on products, which rose by 4.2% year on year, in the first half of 2019.

Chart I.5.1 • Sectoral contributions to the GVA year-on-year rate of change | Percentage and percentage points



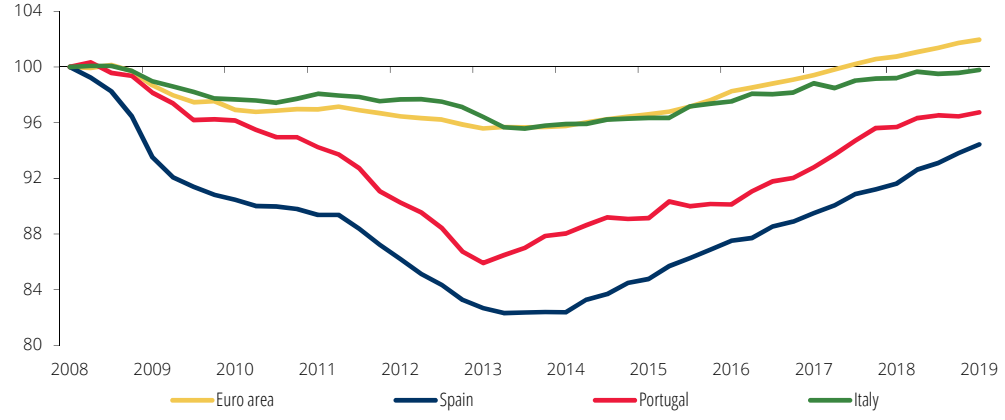
Sources: Statistics Portugal – National Accounts (Banco de Portugal calculations).

The labour market situation continued to improve, despite the deceleration in employment

The growth in productive activity continued to be reflected in an improvement in labour market conditions, with an ongoing reduction in the unemployment rate and the maintenance of employment growth, although at a slower pace than in 2018. According to Statistics Portugal's Labour Force Survey, in the first half of 2019 employment grew by 1.2% year on year, which corresponds to a 0.7 p.p. deceleration from the second half of 2018 (Table I.5.2).

Employment's recovery path has been shared among several euro area countries, most notably in Portugal and Spain, whose labour markets had deteriorated significantly during the recent recession (Chart I.5.2). However, the employment level in both countries still stands at levels below those observed before the onset of the international economic and financial crisis.

Chart I.5.2 • Evolution of employment in Portugal and in the euro area | 2008 Q1=100



Sources: Eurostat (Banco de Portugal calculations). | Notes: The results are based on employment for the age subgroup from 15 to 64 years old, in accordance with the Eurostat release, and differs from the criteria adopted by the Statistics Portugal quarterly accounts (15 years old and over). The values are seasonally adjusted. The data presented in 2019 correspond to the values of the first quarter.

Although it continues to show a recovery trend, employment growth has been less significant since end-2017. This deceleration reflects the evolution of employees in a scenario where self-employment has returned to robust growth, as in the second half of 2018 (Table I.5.2).

Table I.5.2 • Indicators of recent employment developments in Portugal | Year-on-year growth, percentage, unless otherwise stated

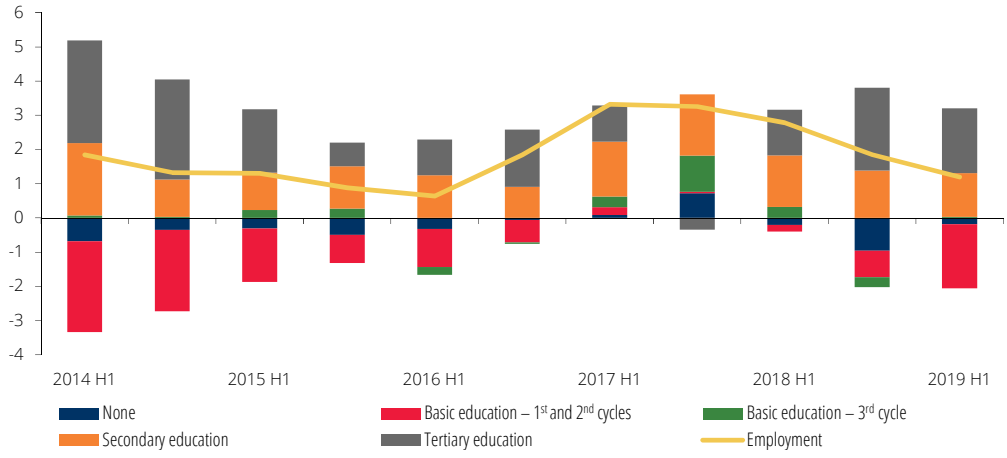
	Thousand individuals in 2018	2017	2018	2018		2019
				H1	H2	H1
Total employment	4,866.7	3.3	2.3	2.8	1.9	1.2
Employees	4,056.5	4.3	2.7	3.7	1.7	0.6
Self-employed	789.7	-0.4	0.5	-1.5	2.5	4.2
Homeworkers	20.5	-23.9	-7.1	-12.2	-1.6	-3.1
By type of contract						
Open-ended contracts	3,165.1	4.7	2.8	3.5	2.1	1.6
Fixed-term contracts	745.0	3.3	2.2	5.4	-0.7	-2.0
Service providers	146.4	0.8	4.8	2.0	7.5	-7.2
By duration						
Full-time	4,355.3	4.1	3.2	4.1	2.3	1.1
Part-time	511.3	-2.4	-4.7	-7.4	-1.8	1.8
By age group						
From 15 to 24 years old	296.4	7.7	4.9	3.8	5.9	4.8
From 25 to 34 years old	939.8	1.1	0.7	1.5	0.0	0.0
From 35 to 44 years old	1,303.1	-0.1	-0.3	0.2	-0.7	-0.4
From 45 to 54 years old	1,252.0	4.3	2.7	3.8	1.6	0.5
More than 54 years old	1,075.3	7.7	6.0	6.0	6.0	4.0

Sources: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations).

Employment growth in the first half of 2019 reflected the development in employment among older age groups, especially among individuals aged over 54 (0.9 p.p. contribution to the rate of change), and among individuals aged 15 to 24 (0.3 p.p. contribution). Regarding types of contracts, both fixed-term contracts and contracts with service providers fell in the first half of 2019. The share of open-ended contracts in total employees stood at 17.9% in the first half of 2019, 0.5 p.p. down from 2018 as a whole.

In terms of educational attainment levels, the employment slowdown in Portugal in the most recent period reflects the reduction of the share of individuals with qualifications below secondary education in employment (-4.4% year-on-year rate of change in the first half of 2019). The decrease in employment among lower educational attainment levels, coupled with higher levels of education in the general population, has been a trend since 2002. This trend was only interrupted in 2017, when strong employment growth was recorded across all education levels. Since 2002 the share in employment of individuals who did not complete secondary education fell 33 p.p., to stand at 45.2% in the first half of 2019. Conversely, employment of highly qualified individuals has remained robust. In the first half of 2019 employment of individuals with tertiary education increased by 7.1% year on year, while employment of individuals with secondary education posted a 4.7% rise. These increases resulted in individuals with tertiary and secondary education contributing 1.9 p.p. and 1.3 p.p., respectively to employment growth in the first half of 2019 (Chart I.5.3). Employment among those with tertiary education has been continuously growing since the beginning of the century, including during the recessive periods that have occurred since then.

Chart I.5.3 • Schooling level contributions to the evolution of employment | Percentage points



Sources: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations).

Slight increase in labour productivity

GVA per worker, used to measure labour productivity, recorded a 0.4% year-on-year growth. Excluding public administration and real estate activities, the growth of GVA per worker was 0.8%.[18]

In the first half of the year, as has happened in the last few years, the inter-sectoral contribution to productivity growth was positive, reflecting employment flows between sectors. The positive inter-sectoral component shows that in the course of the ongoing economic recovery, as during the previous recession, employment flows are probably being redirected to the more productive sectors of the economy, particularly those most exposed to international competition.[19] The within-sector contribution to the variation in aggregate productivity was positive in the first half of 2019, which had not happened since 2013. This is due to the productivity increase in services (such as trade, transportation, and accommodation and food activities) and construction (Table I.5.3).

Productivity developments can also be interpreted as the result of the contribution of the various productive inputs, including increases in the capital stock per worker, advances in technology and the quantity and quality of human capital, which is also reflected in the quality of business management (Box 4).

18. According to ESA 2010, when households own the dwelling they occupy, a value must be estimated for the respective rent – the 'imputed rent' – based on the rent of similar dwellings actually rented. Conceptually, imputed rents correspond to the income associated with the assets owned by households as own housing and can be seen as compensation for the services provided by that asset. From the production viewpoint, the value estimated for these services is incorporated into GDP as a component of value added for the branch of activity relating to real estate activities. This results in an extremely high value for GVA in this sector and consequently for the respective productivity per worker. In this context, the calculations of sectoral contributions to growth of GVA per worker exclude not only public administration but also real estate activities.
19. The Special issue in the May 2019 *Economic Bulletin* analyses developments in labour productivity over the last decade, based on firm-level data for Portugal. This Special issue concludes that the productivity distribution in the sectors considered remained practically unchanged over the last decade. However, there was some sectoral recomposition, with a higher prevalence of firms in the most productive sector.

Table I.5.3 • Sectoral contributions to the GVA per worker annual rate of change | Percentage and percentage points

	2015	2016	2017	2018	2019 H1	2015-2019 H1	*Memo:* 2008-2013
Whole economy (exc. public administration and real estate activities, growth rate, percentage)	-0.1	0.3	0.3	0.2	0.8	1.1	9.3
Contributions (in p.p.):							
Within sector	-1.0	-0.2	-0.2	-0.1	0.4	-1.2	6.9
Agriculture, forestry and fishing	0.4	0.1	0.2	0.0	0.1	0.7	0.6
Manufacturing	-0.1	0.1	0.4	-0.3	-0.5	-0.1	2.5
Electricity, gas and water supply	0.0	-0.2	-0.3	0.2	-0.2	-0.5	-0.2
Trade, transports, hotels and restaurants	-0.3	-0.2	-0.5	0.0	0.6	-0.7	4.5
Construction	-0.1	0.0	0.0	-0.1	0.4	0.1	0.5
Other services	-0.9	0.0	0.1	0.0	0.0	-0.8	-1.1
Inter-sectoral shift	0.8	0.5	0.5	0.3	0.4	2.4	2.4

Sources: Eurostat (Banco de Portugal calculations). | Note: For a more detailed on the methodology used to compute sectoral contributions see the box entitled "The evolution of GVA, employment and productivity in the ongoing recovery: sectoral contributions" in the *Economic Bulletin* October 2017.

Unemployment rate continued on a downward trend

The unemployment rate remained on a downward trend in the first half of 2019, albeit more moderately than in recent years. The unemployment rate stood at 6.5% in the first half of the year, the lowest it has been since the first half of 2004. The unemployment rate has also declined across the euro area, but particularly in Portugal and Spain (Chart I.5.4).

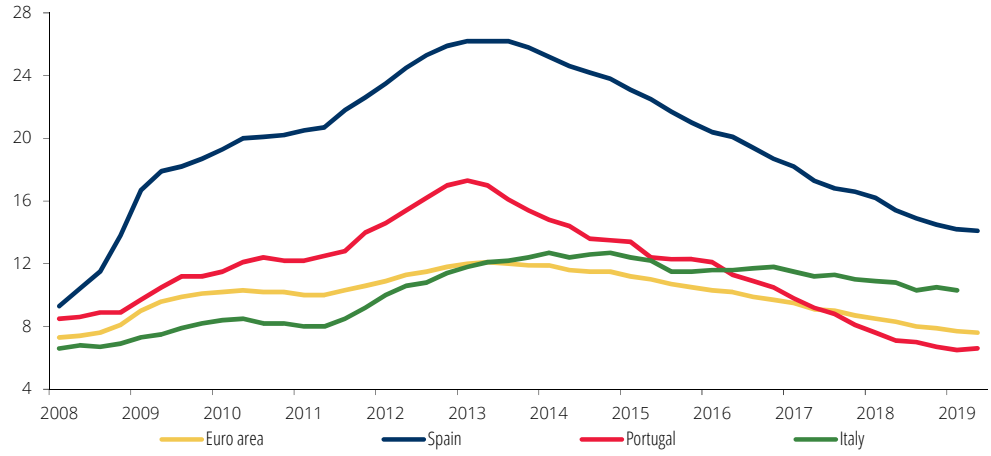
In the first half of 2019 the number of unemployed in Portugal fell by 10.5% from the same period in 2018 (Table I.5.4). The number of unemployed fell by 62% compared with the first half of 2013 (555 thousand fewer unemployed), when the unemployment rate reached a record high of 17%.

Taking into account flows, with a constant sample, i.e. considering individuals that remain in the sample of Statistics Portugal's Labour Force Survey for two consecutive quarters, it is clear that the reduction in the number of unemployed in the first half of 2019 is essentially based on a significant flow of transitions to employment. In the first half of 2019 about 139 thousand individuals switched from unemployment to employment, while approximately 97 thousand individuals followed the reverse path.

By age group, the decrease in the unemployment rate reflected the downward trend found in the youth unemployment rate (aged 15 to 24), amid a slight increase in the labour force for this age group. In the first half of 2019 the youth unemployment rate (aged 15 to 24) fell by 2.2 p.p. from the second half of 2018, standing at 17.8% (Table I.5.4).

Contrary to recent developments, the drop in the unemployment rate in the first half of 2019 largely reflected a reduction in the incidence of individuals unemployed for 12 months or less (short-term unemployment), against a background where the contribution from the so-called very long-term unemployment (individuals unemployed for two years or more) became lower (Chart I.5.5). As a result, the share of long-term unemployment (individuals unemployed for 12 months or more) showed a slight increase in the first half of 2019, while the median duration of unemployment was relatively stable at around 12 months.

Chart I.5.4 • Evolution of unemployment in Portugal and in the euro area | Percentage of total labour force



Sources: Eurostat (Banco de Portugal calculations). | Notes: The results are based on the unemployment rate for the age subgroup from 15 to 74 years, in accordance with the Eurostat release, and differs from the criteria adopted by the Statistics Portugal quarterly accounts (15 years old and over). The values are seasonally adjusted. The data presented in 2019 correspond to the values of the first semester and, in the case of Italy, to those of the first quarter of the year.

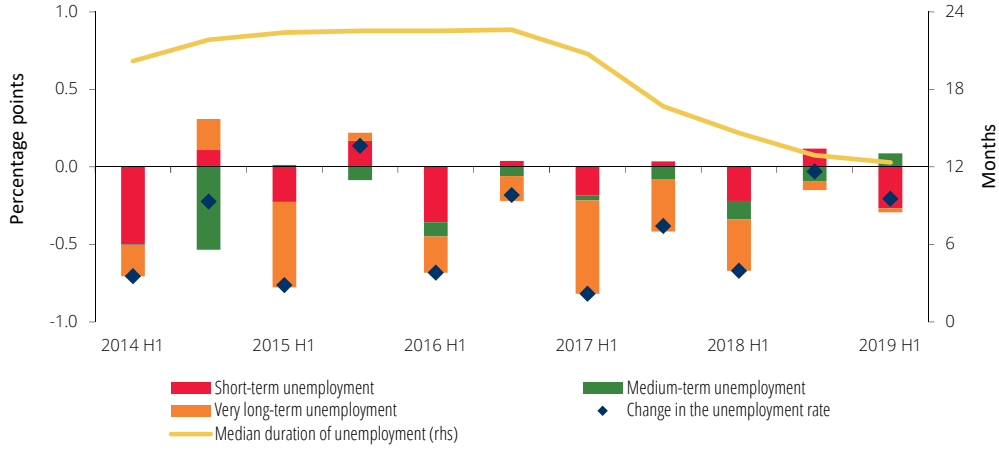
Table I.5.4 • Indicators of recent unemployment developments in Portugal | Percentage of labour force, unless otherwise stated

	Thousand individuals in 2018	2017	2018	2018		2019
				H1	H2	H1
Unemployment (year-on-year rate of change, in %)	365.9	-19.2	-14.8	-22.7	-19.0	-10.5
Unemployment rate	–	8.9	7.0	7.3	6.7	6.5
By age group						
From 15 to 24 years old	75.5	23.9	20.3	20.7	20.0	17.8
From 25 to 34 years old	76.6	9.7	7.5	8.0	7.1	6.7
From 35 to 44 years old	81.1	7.2	5.9	6.2	5.5	5.3
From 45 to 54 years old	70.5	7.2	5.3	5.5	5.2	5.7
More than 54 years old	62.2	7.2	5.5	5.8	5.1	5.2
Labour underutilisation (year-on-year rate of change, in %)	743.9	-14.8	-17.4	-18.2	-16.5	-8.4
Labour underutilisation rate [a]	–	16.5	13.7	14.3	13.1	13.0
Long-term unemployment (in % of total unemployment) [b]	188.0	58.1	51.4	53.2	49.4	50.2
Very long-term unemployment (in % of total unemployment) [c]	132.0	41.9	36.1	36.8	35.3	34.3
Discouraged	184.6	4.1	3.5	3.5	3.5	3.3

Sources: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Notes: (a) The labour underutilisation rate is an indicator calculated by Statistics Portugal that aggregates unemployed population, involuntary part-time workers, individuals seeking work but not immediately available and individuals available to work but not seeking. To compute labour underutilisation rate, the labour force also includes these inactive individuals. (b) The long-term unemployment includes those unemployed for 12 or more months. (c) The very long-term unemployment includes those unemployed for 24 or more months.

Similarly to employment, the evolution of the unemployment rate by educational attainment levels shows significant heterogeneity. In the first half of 2019 the unemployment rate among individuals with tertiary education stood at 4.9%, a 0.8 p.p. decrease from the second half of 2018. For the same period, the unemployment rate among individuals with secondary education fell by 0.3 p.p. to 7.4%, while the unemployment rate for individuals who did not complete secondary education was up by 0.4 p.p. to 7.0%.

Chart I.5.5 • Contributions to changes in the unemployment rate, by duration brackets and median duration of unemployment



Sources: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Notes: Short-term unemployment includes individuals unemployed for less than 12 months; medium-term unemployment includes those unemployed for 12 months or more but less than 24 months; very long-term unemployment includes those unemployed for 24 months or more. Median duration calculated as a two-semester moving average of median durations.

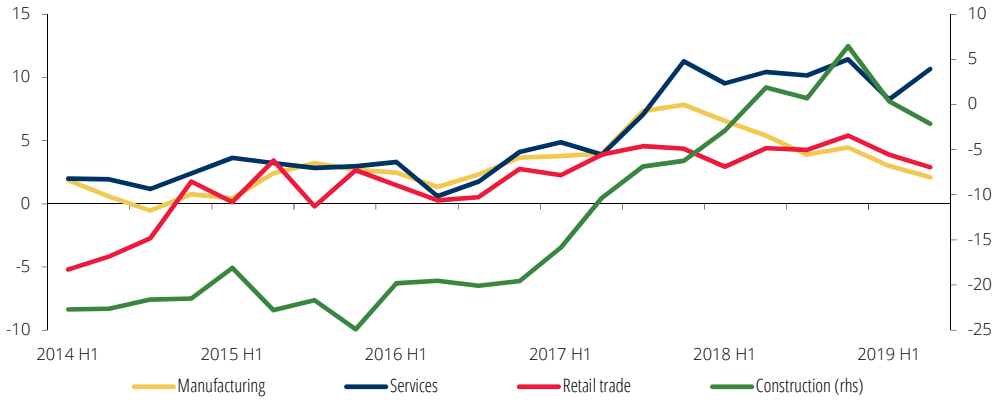
Available indicators point to a tightening labour market in Portugal

Despite more moderate growth in employment and a relatively stable unemployment rate in the most recent period, available indicators still generally point to continued momentum in labour demand, as well as to difficulties in hiring skilled personnel in some sectors. Against this background, qualitative information shows that employment expectations for the next three months remain high, particularly in services and construction (Chart I.5.6). However, retail trade and manufacturing record a slight decrease. Furthermore, according to the European Commission's Opinion Surveys, the percentage of firms that refer to labour shortages as adversely affecting production remains high in construction and above the last decade's average in manufacturing and services (Chart I.5.7).

Simultaneously, available information continues to point to a tightening labour market. The labour underutilisation rate calculated by Statistics Portugal – an indicator that measures available labour capacity with a broader scope than the unemployment rate – has been on a steeper downward path than the unemployment rate.[20] In the first half of 2019 the labour underutilisation rate stood at 13%, which corresponds to a 1.3 p.p. decline from the first half of 2018. Over the same period, the unemployment rate dropped by 0.8 p.p. (Table I.5.4).

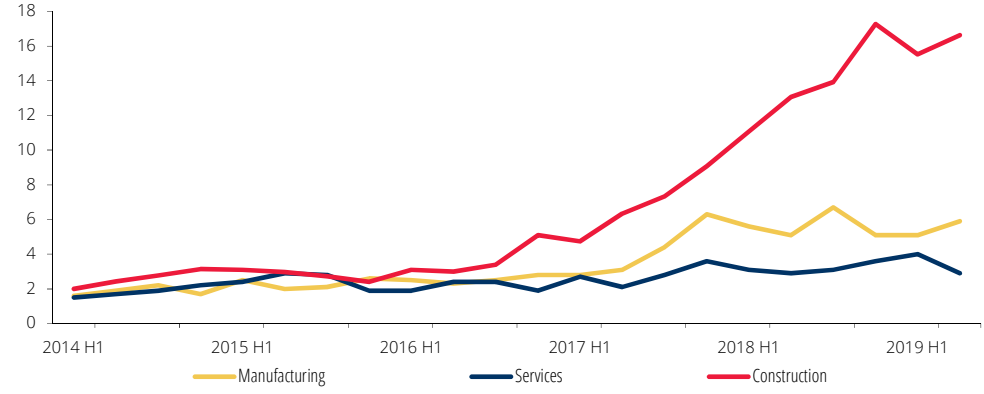
20. The labour underutilisation rate aggregates, in addition to those officially unemployed, involuntary part-time workers, inactive individuals seeking work but not immediately available and inactive individuals available to work but not actively seeking it.

Chart I.5.6 • Assessment of employment expectations over the next three months | Balance, seasonally adjusted



Sources: European Commission – Opinion Surveys (Banco de Portugal calculations). | Notes: Based on the survey question where companies assess the evolution of their employment over the next three months (increase, maintenance or reduction).

Chart I.5.7 • Firms indicating labour shortage as a factor limiting production | Percentage of responding firms



Sources: European Commission – Opinion Surveys (Banco de Portugal calculations).

The labour underutilisation rate reflects not only the momentum of labour demand by firms but also labour supply conditions. A growing labour supply depends, among other factors, on changes that may lead inactive individuals who are not actively seeking work (therefore not considered to be unemployed) to start seeking it. In this regard, the number of individuals without a job that claim they want to work but who are not actively seeking it has decreased substantially.[21] This includes the sub-group of individuals who are not actively seeking work but are immediately available for work (also known as 'discouraged'), which decreased by 6.4% in the first half of 2019, year on year. In the first half of the year, discouraged individuals represented 3.3% of the labour force (Table I.5.4).

These indicators suggest that the room for labour force growth by inclusion of inactive individuals still attached to the labour market has narrowed. A more intensive use of the existing workers provides additional room for firms to expand their productive capacity, especially by adjusting the number of working hours. In this context, the number of part-time workers who cannot find a full-time job

21. In the literature, these individuals are known as marginally attached workers. In the first half of 2019 the number of individuals in this situation fell by 4.8%, to stand at 291,5 thousand.

has decreased. In the first half of 2019 the number of individuals in this situation was around 181 thousand, which corresponds to a 3.6% year-on-year decline. These involuntary part-time workers represented 3.5% of the labour force in the first half of the year.

Growth trend in the labour force continues in an adverse demographic scenario, with decreasing and ageing resident population

Demographic changes observed over the last two decades, such as the reduction and ageing of the resident population, are an additional limitation to the potential growth of labour supply in Portugal.[22] In the first half of 2019 the labour force[23] maintained the subdued growth profile of the last few years with a 0.3% year-on-year increase, although it remained significantly lower (-5.5%) than before the international economic and financial crisis.

The labour force's recovery trend occurs against a background of adverse demographic developments. A continuous reduction of the resident population in Portugal has been observed since 2010, although it became relatively stable in the first half of 2019. When compared with 2009 the resident population decreased by 2.9%, while the working-age population (aged 15 to 64) decreased by 5.8%. This especially significant decline in the working-age population reflects the continued secular trend for population and labour force ageing in Portugal.

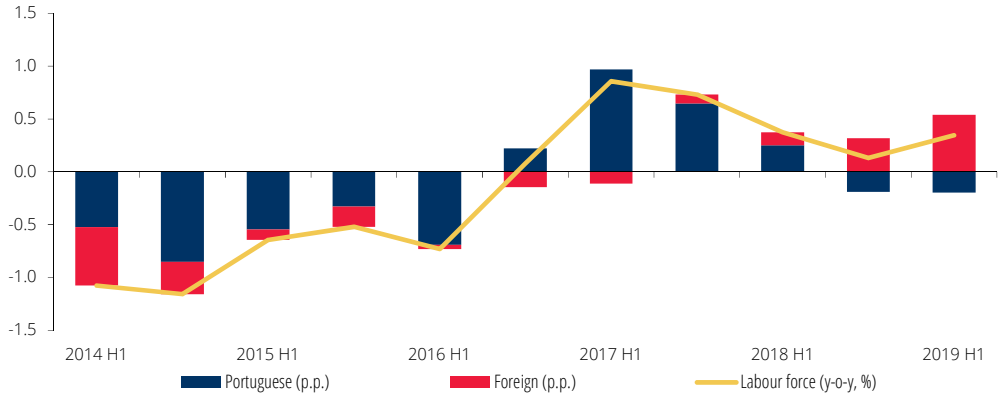
The favourable developments in the labour force over the most recent period benefited from the rise in the participation rate among older groups, boosted by a gradual increase in the retirement age.[24] Younger generations in turn have posted a gradual decrease in the participation rate associated with longer schooling.[25] In addition, the maintenance of the secular trend of a rising female participation rate, which is expected to converge with the male participation rate over the next few decades, is another factor that may mitigate the effects of the unfavourable demographic dynamics on the labour force.[26] Recently the labour force in Portugal benefited from the positive contribution of the foreign labour force (Box 3). In the first half of 2019, the increase in the foreign labour force contributed 0.5 p.p. to the labour force's 0.3% year-on-year growth (Chart I.5.8).

Improved labour market conditions have led to higher wage growth

Labour supply constraints and the dynamics of demand have contributed to increased pressure on wages. According to data released by the Ministry of Labour, Solidarity and Social Security, in the first half of 2019 base wages per employee declared to Social Security grew by 3.1%, which represents an acceleration from 2.4% in 2018 as a whole (Chart I.5.9). The national accounts compiled by Statistics Portugal point towards a 2.6% increase in average compensation per employee in the first half of the year (2.5% in 2018).

22. For a more detailed analysis of demographic changes and labour supply in Portugal see the Special issue "Demographic changes and labour supply in Portugal", *Economic Bulletin*, June 2019.
23. In this chapter, labour force means the employed and unemployed population aged 15 or above.
24. In the first half of 2019 the participation rate was 33.4% for the 15 to 24 age group; 90.3% for the 25 to 34 age group; 93.2% for the 35 to 44 age group; 87.2% for the 45 to 54 age group and 31.8% for the over 54 age group. In 2010 participation rates stood at 36.1%, 90.1%, 90.8%, 85.0% and 31.6%, respectively.
25. For further detail on the participation rate by year of birth cohorts, in different age groups, see Chart 14 in the Special issue "Demographic changes and labour supply in Portugal", *Economic Bulletin*, June 2019.
26. In the first half of 2019 the female participation rate stood at 47.8%, 6.9 p.p. lower than the male participation rate.

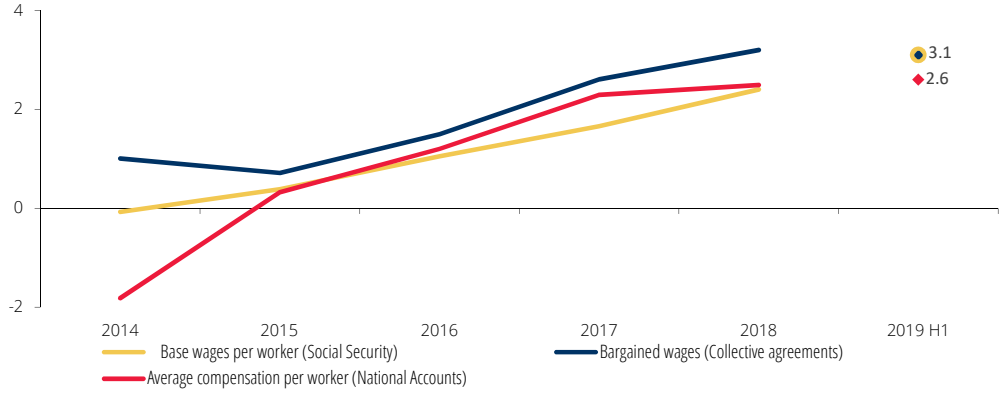
Chart I.5.8 • Nationality contributions to the labour force year-on-year rate of change | Percentage and percentage points



Sources: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations).

Wage developments also reflect the greater momentum in collective bargaining in Portugal, which has translated into the greater number of collective agreements. Up to June 2019, 179 new collective agreements were released, covering approximately 422 thousand workers, which led to 3.1% growth in bargained wages. Given its importance to wage distribution in Portugal, wage growth in 2019 seems to be also reflecting the increase in the national minimum wage.[27]

Chart I.5.9 • Rate of change of wage development indicators | Percentage



Sources: Directorate-General for Employment and Labour Relations, Ministry of Labour, Solidarity and Social Security, and Statistics Portugal, (Banco de Portugal calculations).

27. According to the Labour Gains and Duration Survey, released by the Office of Strategy and Planning of the Ministry of Labour, Solidarity and Social Security, the share of private sector full-time workers earning the guaranteed monthly minimum wage was 25.6% in October 2018, up by 0.5 p.p. from October 2017. In the beginning of 2019 the national minimum wage rose from €580 to €600.

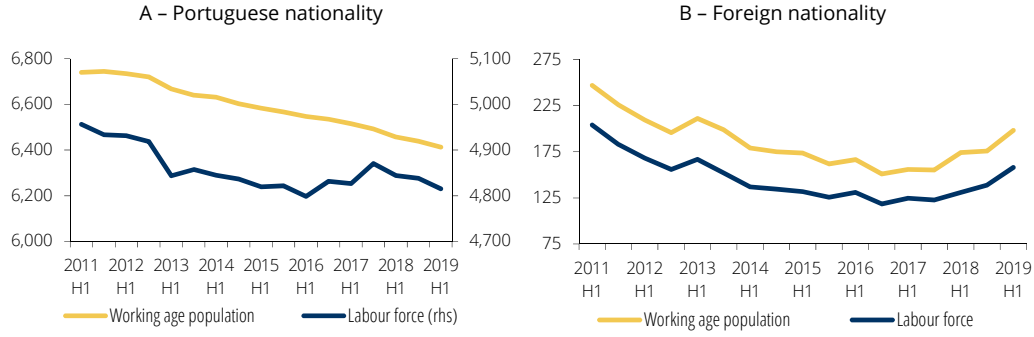
Box 3 • The contribution of foreign population to labour force developments in Portugal

In a context of a declining and ageing resident population in Portugal, the labour force decreased between 2008 and 2016.[28] As of 2017 this trend has reversed, chiefly reflecting the contribution of the Portuguese population and, more recently, the contribution of foreign individuals. Since mid-2018 the foreign labour force has sustained labour force developments in Portugal.

This box assesses the contribution of the foreign labour force residing in Portugal to developments in the total labour force, mainly using data from Statistics Portugal's Labour Force Survey.

In the first half of 2019, working-age foreigners residing in Portugal amounted to 198 thousand, accounting for 3.0% of the population within this age group (Chart C3.1).[29] In turn, the foreign labour force amounted to 158 thousand individuals, accounting for 3.2% of the labour force in Portugal.

Chart C3.1 • Working-age population and labour force (15 to 64 years old), by nationality | In thousands of individuals

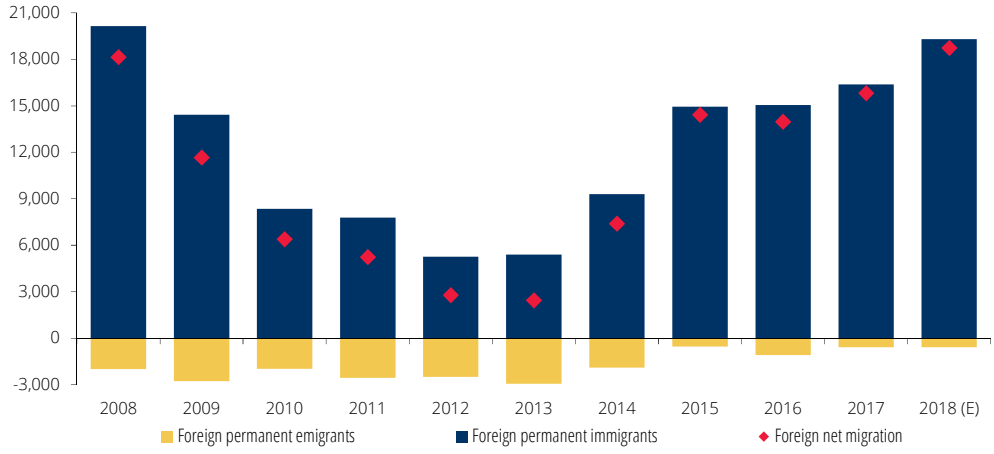


Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Note: The working-age population includes all active and inactive resident individuals (namely students and retirees) aged 15-64.

Despite its low relative weight, the foreign population residing in Portugal has increased over the most recent period, mainly in line with developments in migration flows, and has contributed favourably to the developments in the labour force and employment.[30] The net migration of the foreign population residing in Portugal has been recovering since 2014 and it should have increased again in 2018, mainly through immigration (Chart C3.2). Foreigners account for almost half of all immigrants, about half of whom come from outside the European Union.[31] According to the Labour Force Survey, Brazilians are the ones that have contributed the most to the increase in the foreign resident population and, among the European individuals, the main inflows come from Italy and the United Kingdom.[32]

28. In this box, labour force corresponds the employed and unemployed population from 15 to 64 years old.
29. This figure may be underestimated as the survey unit under the Labour Force Survey is individual accommodation, not including those individuals residing in hostels, local accommodation establishments or other tourism accommodation establishments. It is therefore lower than the number of residence permits granted by the Portuguese Immigration and Borders Service (SEF) to foreign citizens, which, in turn, may be granted to individuals who do not actually reside in the Portuguese territory.
30. For a more detailed analysis on the main demographic changes and the labour supply in Portugal, see the Special Issue in the June 2019 issue of the *Economic Bulletin*.
31. The immigrants with Portuguese nationality correspond mainly to those individuals returning to Portugal.
32. In the first half of 2019, Brazilians contributed by 20 p.p. to the growth of 21% of the foreign population, year on year.

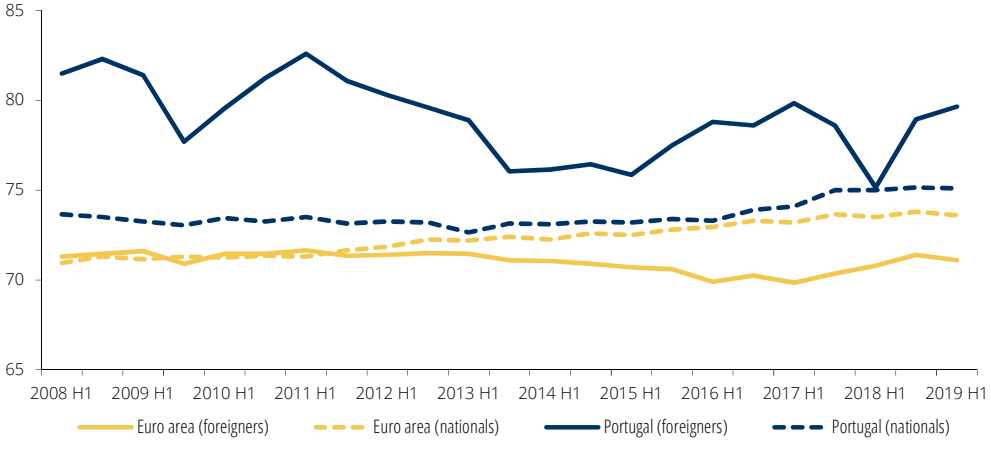
Chart C3.2 • Foreigners migratory flows | In number of individuals



Source: Statistics Portugal – Demographic Statistics (Banco de Portugal calculations). | Notes: Foreign emigrants correspond essentially to situations of return abroad. The breakdown of 2018 migratory flows by nationality was estimated (E) by Banco de Portugal.

The foreign population has contributed to the labour force increase, not only due to the demographic component (working-age population), but also because of the labour market participation (participation rate) (Charts C3.1 and C3.3).[33] In fact, the participation rate of foreigners has been higher than that of the Portuguese by around 4 p.p., standing at about 80% in the first half of 2019. The vast majority of these individuals were employed (about 87% of the foreign labour force). The participation rate of foreign citizens residing in Portugal is among the highest in the euro area, standing 8 p.p. above the average, while the participation rate of Portuguese citizens is also higher, but closer to the euro area average (Chart C3.3).

Chart C3.3 • Participation rate (15 to 64 years old), by nationality | Percentage



Source: Eurostat – Labour Force Survey. | Notes: The reduction in the participation rate of foreigners in Portugal in the first half of 2018 is due to an increase in the total foreign population greater than the foreign labour force. The euro area figures for the first half of 2019 correspond to the first quarter of the year.

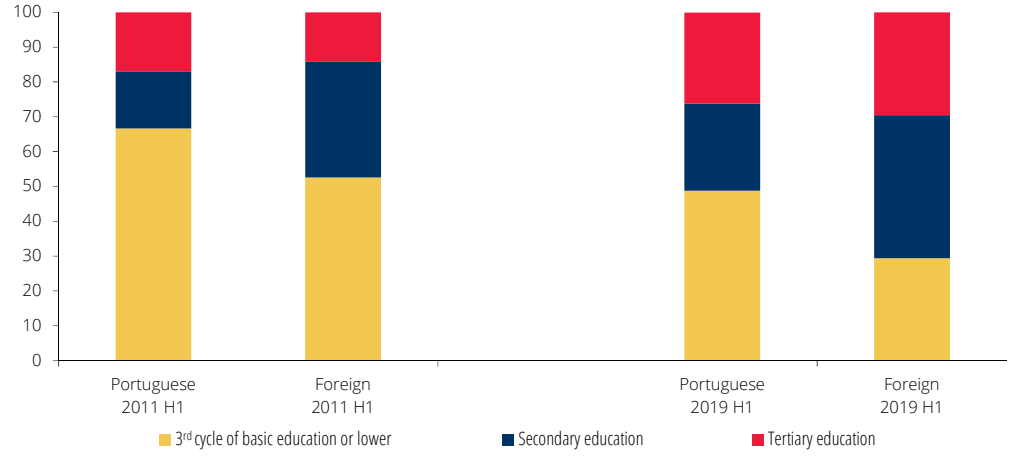
33. The participation rate corresponds to the ratio of the labour force to the working-age population.

The relatively high participation rate of the foreign population in Portugal is related to multiple aspects that are not strictly economic in nature. Two factors are highlighted in this box.

First, the foreign population has a much younger age structure than that of the Portuguese population. In particular, the share of working-age foreigners was around 80% in the first half of 2019, which contrasts with about 60% in the case of the Portuguese resident population.

Second, the average educational attainment of the foreign population is higher than that of the Portuguese resident population (Chart C3.4). In recent years, average educational attainment of the resident population has been increasing significantly, but this increase has been higher among the foreign population.[34] Between the first half of 2011 and the first half of 2019, the share of the foreign population aged 25 to 64 with tertiary education doubled from 15% to 30%, while for the Portuguese population this share increased from 17% to 26%. In the same period, the population with basic education as its maximum educational attainment level fell by about 20 p.p. in both cases, standing close to 30% among foreigners and slightly below 50% for the Portuguese.[35]

Chart C3.4 • Schooling level of the population (25 to 64 years old), by nationality
| As a percentage of population with the respective nationality



Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations).

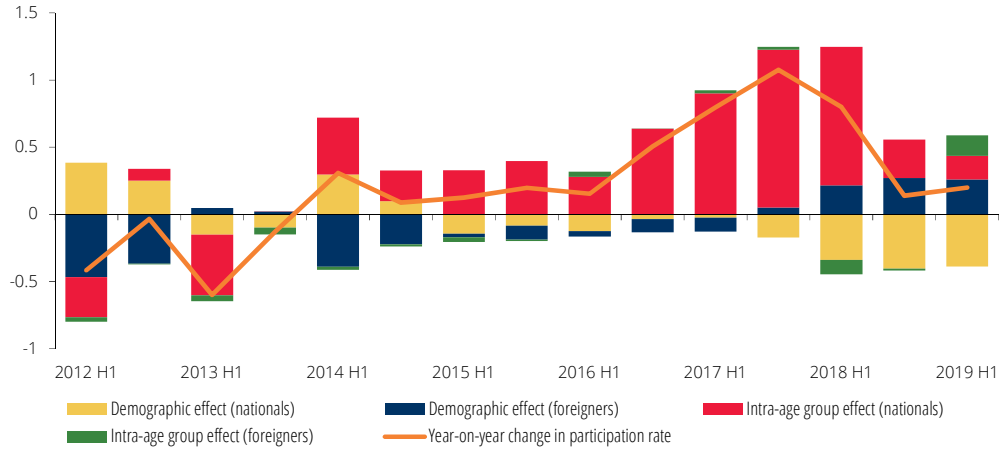
As mentioned above, the participation rate in Portugal has been rising in recent years, with the foreign population playing a particularly important role. Developments in the participation rate may be broken down between the effect of change over time in the relative weight of each age group in the population (demographic effect) and the effect of the labour force dynamics within each age group (intra-age group effect). These effects may also be broken down between Portuguese and foreign individuals (Chart C3.5).

Since 2015, the demographic effect of the Portuguese population has been systematically negative, given the increasing weight of the older cohorts (with lower participation rates). By contrast,

34. The results from the Labour Force Survey ad hoc module carried out in the second quarter of 2014 also showed that the educational attainment level among descendants of immigrants (residents with immigration background) was higher compared to the population with no immigration background.
35. Note that the 2012/13 school year marks the beginning of the extension of compulsory education from 9 to 12 years, however, this change is not reflected in this analysis yet, which only covers individuals aged over 24. For this reason, the share of individuals having basic education as maximum educational attainment level is expected to decline more sharply in the coming decades.

since mid-2017 the demographic effect of the foreign population has had a positive effect, reflecting changes in the age structure towards a rejuvenated labour force. The contribution made by the foreign labour force under the age of 35 is noteworthy. The intra-age group effect tends to evolve more in line with the economy's cyclical position, since, in addition to the structural nature it shares with the demographic effect, the intra-age group effect also has a cyclical component. From the second half of 2013 onwards, this effect has been positive for the Portuguese, in connection with an increase in the participation rate in the various age groups, with emphasis on the 55 to 64 age group. In the case of foreign citizens, the intra-age group effect has been relatively contained, but became positive in the first half of 2019, with a sharp increase in the participation rate of individuals aged 15 to 24.

Chart C3.5 • Decomposition of the year-on-year change in the participation rate (15-64 years old) by age group and nationality, between demographic effect and intra-age group effect | In percentage points



Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations).

In short, the recovery of foreigners' immigration flows has contributed positively to the labour supply in Portugal over the most recent period. Due to its characteristics – typically younger, having a higher level of educational attainment and a higher participation rate – the foreign population may also boost labour market dynamics in the coming years. Although the migration flows evolve very much in line with the economy's cyclical position, other factors, such as tax incentives, the perception of Portugal as a safe country and Brexit, seem to be contributing to the increase in immigration. However, according to the OECD's set of indicators of talent attractiveness, Portugal is in an intermediate position, which means that, in a context of growing global market integration, the domestic competitiveness conditions should be reinforced in order to attract and retain young working-age people.[36]

36. On this matter, see OECD (2019). "Measuring and assessing talent attractiveness in OECD countries; Social, Employment and Migration", Working Papers No 229: in all 35 countries assessed in terms of attractiveness. Portugal ranks 21st for highly educated workers (with graduate – master or doctorate – degrees), 23rd for entrepreneurs and 16th for university students. In the 15 euro area countries considered, Portugal ranks 9th, 11th and 5th respectively for these three rankings.

Box 4 • Management practices in Portugal from an international perspective

Many empirical and theoretical studies have sought to explain the high productivity differentials between countries or between firms in the same country. In this context, the role of management practices has gained ground as an explanatory factor. The paper by Bloom et al. (2016)[37] is relevant within the literature on this topic and posits that about 30% of the differences in productivity across firms are attributable to management practices.

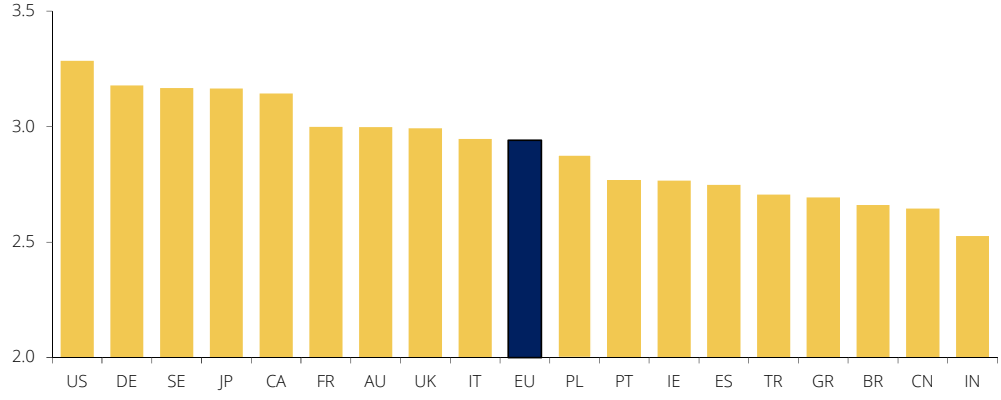
This box looks at information from the World Management Survey database, which allows us to assess management practices in Portugal against an international context. This database is available online and contains information obtained from manufacturing firms over the period 2004-14, based on interviews with managers of 11,702 companies operating in 35 countries.[38]

Each firm is scored from 1 (worst practice) to 5 (best practice) on a set of 18 questions grouped into 4 different areas: operations, targets, people management and monitoring. Questions regarding "Operations" assess the introduction of new manufacturing techniques, process documentation and the rationale for introducing new techniques. Questions regarding "targets" assess the type of targets the firm sets, whether they fit the firm's situation and whether they are transparent. Questions regarding "people management" assess the firm's relationship with its employees, how it retains the most talented ones, how their skills are developed and how the firm sets up a high performance culture. Finally, "monitoring" questions analyse the firm's ability to track staff and production performance and implement quality control and predetermined performance indicators. In the end, each firm is given a score that is the average of the individual scores for the 18 specific questions.

For Portugal, the database contains information on 193 firms from different industries and of different sizes in terms of number of employees. The size of the sample for Portugal is limited but comparable to the samples for other countries. The database provides no other variables regarding firms' characteristics and there is no guarantee of representativeness. Nevertheless, a number of important conclusions can be drawn from the analysis of the results.

Chart C4.1 estimates an overall management quality index for a range of countries, including the United States and the European Union countries in the database.

Chart C4.1 • Global management quality index | Min 1 - Max 5



Source: World Management Survey (Banco de Portugal calculations). | Notes: US-United States, DE-Germany, SE-Sweden, JP-Japan, CA-Canada, FR-France, AU-Australia, UK-United Kingdown, IT-Italy, EU-European Union, PL-Poland, PT-Portugal, IE-Ireland, ES-Spain, TR-Turkey, GR-Greece, BR-Brazil, CN-China, IN- India.

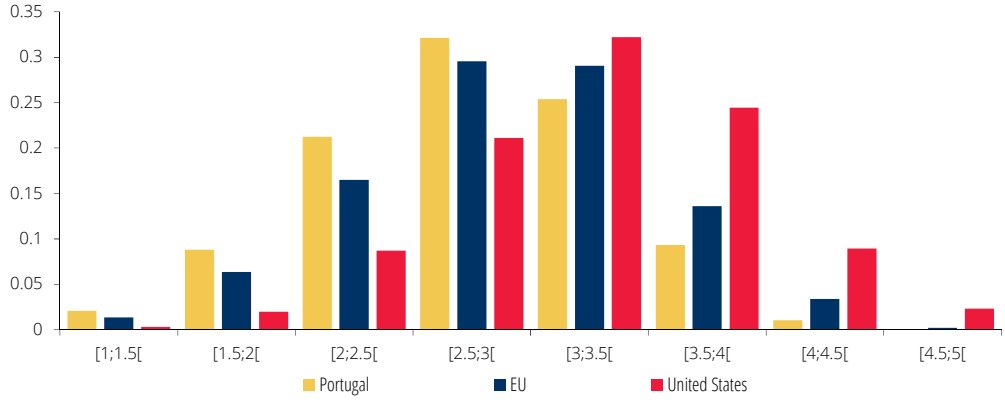
37. Bloom, Nicholas, Sadun, Raffaella and Van Reenen, John (2016), "Management as a Technology?" Working Paper 22327, National Bureau of Economic Research.

38. See https://worldmanagementsurvey.org/

The United States appears as the lead country in terms of management practices, with an index score of 3.3 out of a top score of 5, followed by Germany with 3.2. Portuguese companies are in the lower half of this group of countries, with a score of 2.8, slightly below the EU average (2.9) and similar to the score recorded by Irish and Spanish firms.

Chart C4.2 presents a relative frequency histogram of the overall management quality index in the United States, the EU and Portugal. In this context, there are clear differences in the distribution of firms across the intervals considered, with US firms relatively more prevalent in the best practice intervals. In contrast, most Portuguese firms are placed on the left-hand tail of the distribution. In addition, there is significant dispersion within each country, i.e. there are well and poorly managed firms in every country. There are Portuguese firms with management quality scores between 4 and 4.5, although there are no firms in the top (best) interval of the management quality indicator.

Chart C4.2 • Distribution of the global management quality index

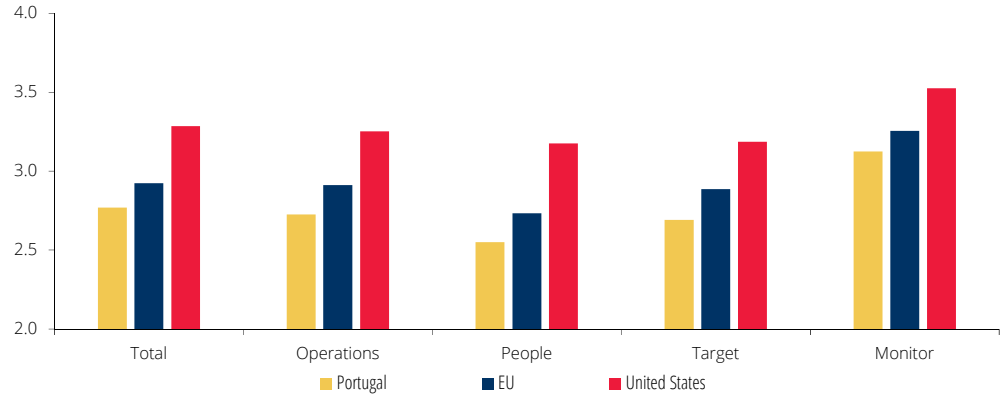


Source: World Management Survey (Banco de Portugal calculations). | Notes: The horizontal axis represents the global management quality index (minimum=1, maximum=5).

Chart C4.3 decomposes the overall management quality index in each of its four components for the United States, the EU and Portugal. The prevalence of best management practices in the United States compared to EU firms, and of the latter compared to Portuguese firms, is found in all management areas. The management of human resources is the area that presents the worst performance based on the average of Portuguese and European firms surveyed. In terms of "monitoring", Portuguese firms score above 3 and are closer to EU and US management practices. In the United States, performance is more uniform across the four areas considered. In the end, a firm's performance in terms of productivity will tend to benefit from a balanced situation, as opposed to a scenario where good practices in a given management area coexist with bad practices in another.

A variable that is usually associated with the quality of management is firm size. Larger firms tend to professionalise management and separate ownership from management, aspects that are typically linked to better business practices. Chart C4.4 presents the distribution of the management quality index according to size classes of firms based on number of employees. The smallest size class considered in the database, in all the countries considered, corresponds to firms that have between 50 and 100 employees. This means that no micro and small firms were interviewed and these make up the majority of the Portuguese business fabric. Chart C4.4 shows that larger firms are effectively better managed across different countries. In addition, the largest Portuguese firms have scores that are relatively closer to European and American firms, i.e. the potential gains in terms of improvement in management quality are higher for smaller firms.

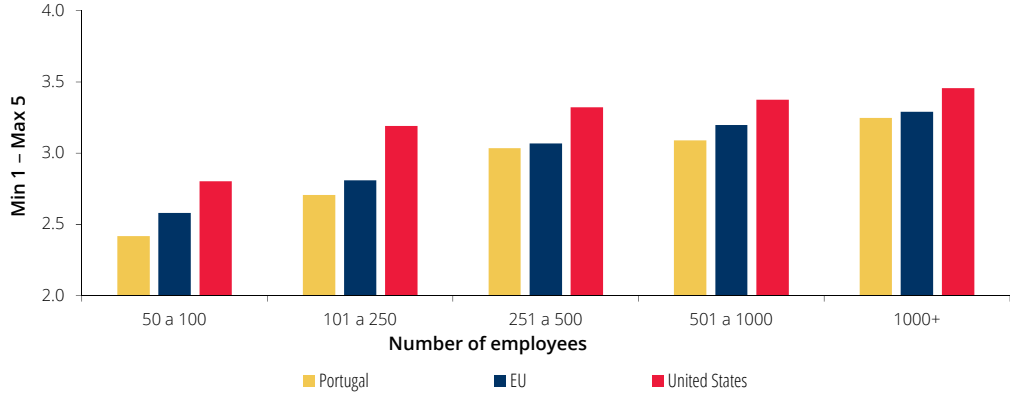
Chart C4.3 • Dimensions of the management quality index | Min 1 - Max 5



Source: World Management Survey (Banco de Portugal calculations).

To sum up, in the sample of firms considered in the World Management Survey, there are heterogeneous management practices between countries and within countries. In addition, there is a clear link between the firm size and management quality, and the causal relationship is likely to exist in both directions, i.e. better managed firms will tend to grow more than others and larger firms will have the means to adopt best practices. As far as Portuguese firms are concerned, it is clear that there is wide room for improvement in terms of their management practices. Although Portugal scores below the EU average in all management areas, human resources management is the worst performer. The creation of conditions for the continuing increase in managers' education and the progressive separation between firms' ownership and management, together with the increase in their average size, is expected to favour the quality of management and, consequently, the productivity of the Portuguese economy.

Chart C4.4 • Management quality index by firm size



Source: World Management Survey (Banco de Portugal calculations).

6 Demand

Economic activity decelerated slightly in the first half of 2019

The Portuguese economy continued to expand in the first half of 2019. According to recently published information from the national accounts (with 2016 as benchmark year), the year-on-year real GDP growth was 2.0%, which represents a slight deceleration compared to the second half of 2018 (Table I.6.1). Box 5 of this *Economic Bulletin* presents an analysis of the impact of the revisions arising from the new national accounts base.

Activity growth in Portugal was higher than the average for the euro area, where GDP increased by 1.2% year on year. The growth differential in GDP *per capita* terms was positive (1.0 p.p.), as has been the case since the first half of 2013. Over a long-term perspective, these recent developments do not change the fact that, cumulatively, the level of *per capita* income in the Portuguese economy has not converged towards the European average over the last few decades, as discussed in the Special issue of this *Economic Bulletin*.

Table I.6.1 • GDP and its main components | Year-on-year rate of change in percentage, unless stated otherwise

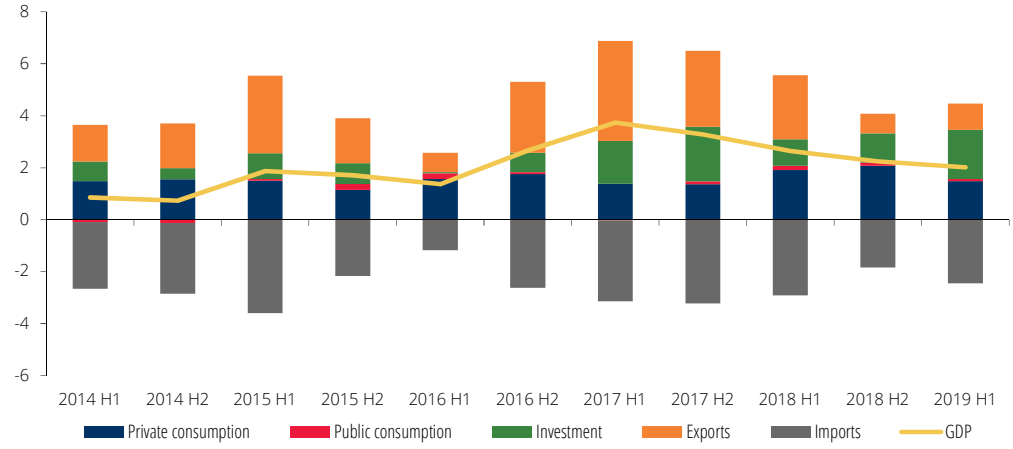
	% of GDP in 2018	Annual rate of change			Year-on-year rate of change		
		2016	2017	2018	2018 H1	2018 H2	2019 H1
GDP	100.0	2.0	3.5	2.4	2.6	2.2	2.0
Domestic demand	99.9	2.2	3.3	3.3	3.1	3.4	3.5
Private consumption	64.8	2.6	2.1	3.1	3.0	3.2	2.3
Public consumption	17.0	0.8	0.2	0.9	0.9	0.8	0.5
Investment	18.1	2.5	11.9	6.2	6.1	6.3	11.0
GFCF	17.6	2.5	11.5	5.8	6.2	5.5	9.5
Change in inventories [a]	0.6	0.0	0.1	0.1	0.0	0.2	0.3
Exports	43.5	4.4	8.4	3.8	5.9	1.8	2.3
Imports	43.4	5.0	8.1	5.8	7.3	4.4	5.8
Contribution of domestic demand net of imports [b]		1.1	1.6	1.7	1.5	1.9	1.7
Contribution of net exports [b]		0.9	1.9	0.8	1.1	0.4	0.3
Memo item:							
GDP – change over the previous period					1.3	0.9	1.1
GDP – euro area		1.9	2.7	1.9	2.4	1.4	1.2

Sources: Statistics Portugal (Banco de Portugal calculations). | Note: (a) Contributions to the annual rate of change of real GDP, in percentage points. (b) Contributions to the annual rate of change of real GDP net of imports, in percentage points. Demand aggregates net of imports are obtained by subtracting an estimate by Banco de Portugal of the imports needed to meet each component. The computation of the import content was based on data for 2015. For more information, see Box 4 "Uptade of the import content of global demand for the Portuguese economy" in the March 2019 issue of the *Economic Bulletin*.

Underlying the slight decline in the year-on-year rate of change in Portugal's GDP is a stabilisation of the contribution made by domestic demand – given that the deceleration of private and public consumption was offset by the acceleration of investment – and a more negative contribution made by net external demand (Chart I.6.1). When the contribution made by these aggregates net of import content is considered, the slowdown in GDP reflects a reduction made by the contributions from exports and domestic demand. Exports accelerated slightly versus the second half of 2018, but grew more slowly than in previous years. Indeed, the deceleration path in activity

observed since the second half of 2017 chiefly reflects a deceleration in export activity, in a context of a slowdown of world trade and external demand for Portuguese goods and services (Chapter 2).

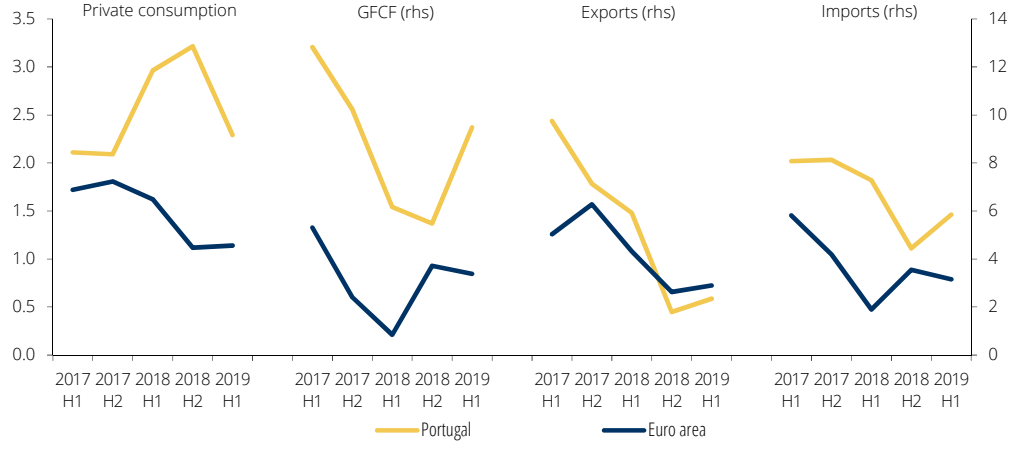
Chart I.6.1 • Contributions to year-on-year rate of change of GDP | Percentage and percentage points



Source: Statistics Portugal.

The behaviour of exports in Portugal was similar to that observed for the euro area (Chart I.6.2) (Chapter 2). In terms of domestic demand, private consumption continued to grow faster in Portugal, although it slowed down in this half-year. Gross fixed capital formation (GFCF) accelerated, and growth was substantially higher than in the euro area.

Chart I.6.2 • Private consumption, investment, exports and imports in Portugal and in the euro area | Year-on-year, percentage



Sources: Eurostat and Statistics Portugal.

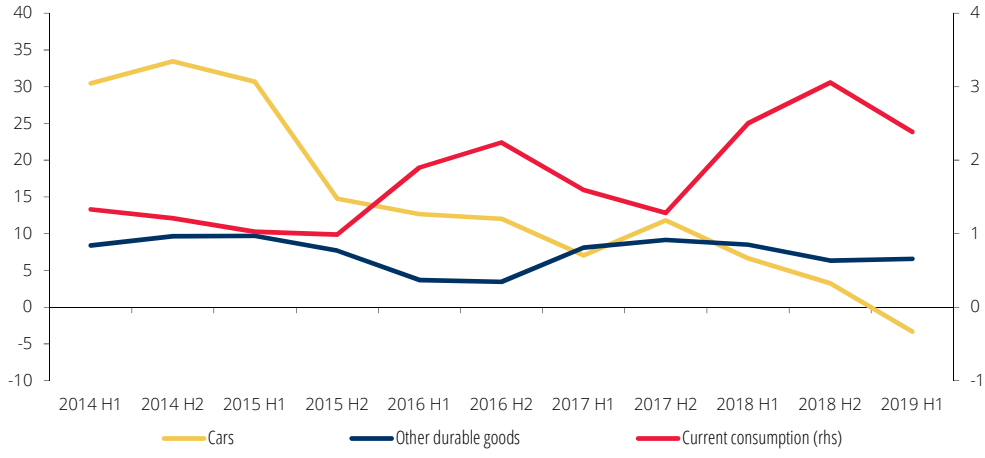
Slowdown in private consumption extended to current and durable consumption

Private consumption's year-on-year rate of change stood at 2.3% in the first half of 2019, compared to 3.2% in the previous half-year. This deceleration brought growth in this aggregate close to that

recorded for GDP. The slowdown in private consumption took place in a context of falling consumer confidence, which nevertheless remained somewhat above its historical average. In the first half of 2019, real disposable income continued to grow robustly, reflecting gains in employment, greater wage growth and a lower inflation rate. The savings rate fell slightly over the period. These developments, along with continuing strong residential investment, resulted in a new decline in households' net lending capacity.

The deceleration in private consumption reflected a slowdown in current consumption and a fall in passenger car purchases (Chart I.6.3). This fall may relate to the fading out of pent-up demand effects for this kind of good originated during the crisis period, the uncertainty over the car market's future prevailing technology and the expansion of new services and mobility solutions (Box 6). The decline in car purchases was accompanied by a fall in new loans for the purchase of new cars in the first half of the year (Chapter 3). Expenditure on other durable goods accelerated slightly, maintaining a robust growth rate.

Chart I.6.3 • Durable and non-durable goods consumption | Year-on-year rate of change, in percentage



Source: Statistics Portugal.

Investment accelerated sharply, reflecting the buoyancy of all components

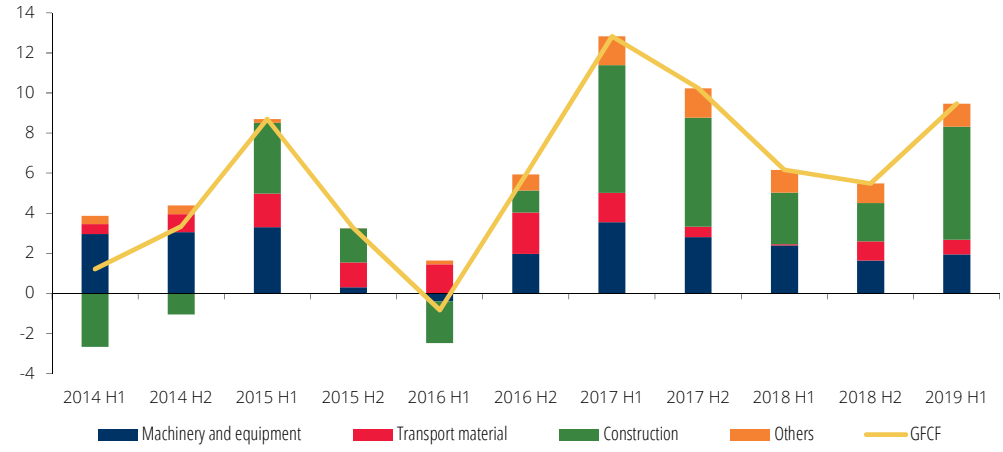
In the first half of 2019, investment accelerated, growing 11.0% year on year, compared to 6.3% in the second half of 2018. This expenditure component contributed the most to GDP growth in the first half of 2019.

The acceleration in investment was essentially driven by GFCF, which grew far above GDP, with a year-on-year rate of change of 9.5% (5.5% in the previous half-year) (Chart I.6.4). In turn, the contribution made by changes in inventories to GDP growth was positive (0.3 p.p.) and similar to that of the second half of 2018 (0.2 p.p.).

The acceleration in GFCF was mainly due to the behaviour of the machinery and equipment and construction items, particularly the latter. GFCF in construction accelerated by 7.8 p.p. versus the last half of 2018, with a year-on-year change of 11.7%. This dynamism was associated with a stronger

increase in loans to construction (Chapter 3). The growth of GFCF in machinery and equipment was also high (7.6%, which compares to 6.7% in the previous half-year). Finally, GFCF in transport equipment continued to grow strongly (8.3%, after growing by 10.6% in the second half of 2018).

Chart I.6.4 • Contributions to the GFCF year-on-year growth rate | Percentage and percentage points



Source: Statistics Portugal.

By institutional sector, investment is estimated to have accelerated in the private sector – in particular the business component – and in the public sector (Chapter 4).

Private corporate GFCF recorded a year-on-year rate of change of 10.1% in the first half of 2019, compared with 5.3% for the previous half-year. The acceleration in this investment component is linked to the maintenance of favourable financing conditions and reflects the need to rebuild and renew the capital stock, after a long period of contraction of investment. Certain large-scale infrastructure projects are underway, in some cases receiving European funding (Chapter 8). The context of greater global uncertainty arising from protectionist tensions and the slowdown in world trade is likely to have negatively influenced the industrial confidence indicator in Portugal, which may constrain investment decisions in this sector.

Private residential GFCF increased 7.1% year on year, 0.6 p.p. more than in the second half of 2018. Demand for housing continued to be driven by improvements in the labour market and favourable financing conditions. Demand from non-residents and the strength of tourism and tourism-related real estate activities are other factors that continued to contribute to developments in residential investment. House prices continued to present high growth rates, particularly in certain segments of the housing market (Chapter 3).

External trade flows accelerated, notably for imports

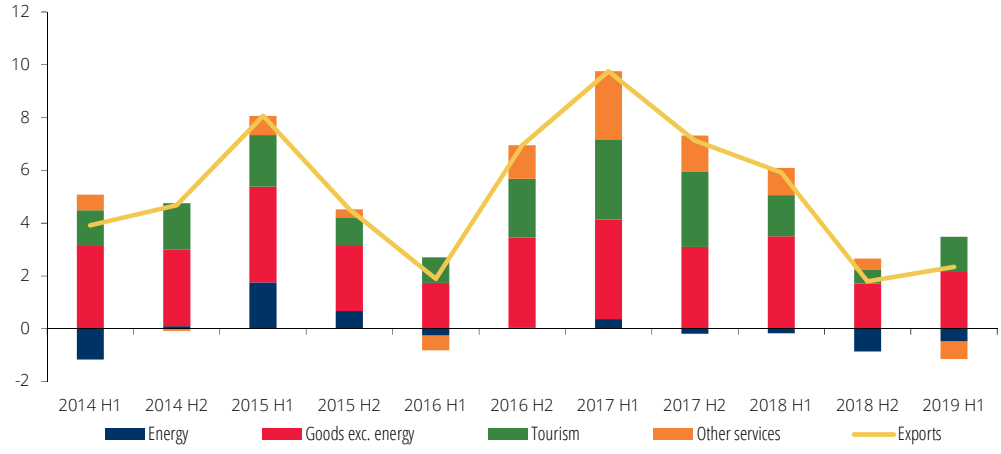
External trade flows of goods and services accelerated in the first half of 2019, especially in the case of imports.

Goods and services exports grew 2.3% in real terms, compared to 1.8% in the second half of 2018 (3.8% for 2018 as a whole). Export growth in the first half of 2019 outstripped demand in the main

destination markets. External demand for Portuguese goods and services decelerated (from 3.1% in 2018 to 1.8% in the first half of 2019), in a context of lower international trade growth, linked to the global increase in protectionism (Chapter 2). Accordingly, there was a slight gain in export market share (0.5%, which compares with 0.7% in 2018). This gain, like those recorded over the last two years, was linked to the car and tourism sectors.[39]

The acceleration in exports reflects an acceleration in goods exports, accompanied by a deceleration in services exports (Chart I.6.5). In the case of goods, real growth was 2.7%, compared to 1.3% in the half-year before. Contributing to this acceleration was a more moderate decline in energy exports and higher growth in other goods exports.

Chart I.6.5 • Contributions to the real year-on-year growth rate of goods and services exports | Percentage and percentage points



Source: Statistics Portugal.

Using nominal information on international trade in goods, seasonally and working day-adjusted and not considering aeroplanes on lease[40], all kinds of non-energy exports accelerated, especially capital goods. Among consumer goods exports, cross-border sales of passenger cars decelerated, but continued to grow strongly (Box 6). By destination, nominal exports of goods excluding energy accelerated across the intra- and extra-EU markets.

In terms of services exports, the real growth rate was 1.8% in the first half of 2019, having been 2.6% in the second half of 2018. The deceleration was the result of other services exports. Tourism exports' growth remained robust (7.4% in real terms, compared to 3.0% in the second half of 2018), against a backdrop of a recovery of competitor destinations.[41]

In the case of imports of goods and services, the real growth rate of the first half of 2019 was 5.8%, compared to 4.4% in the second half of 2018 (5.8% for 2018 as a whole). This higher volume growth of imports versus exports had a negative impact on the goods and services account balance (Chapter 8).

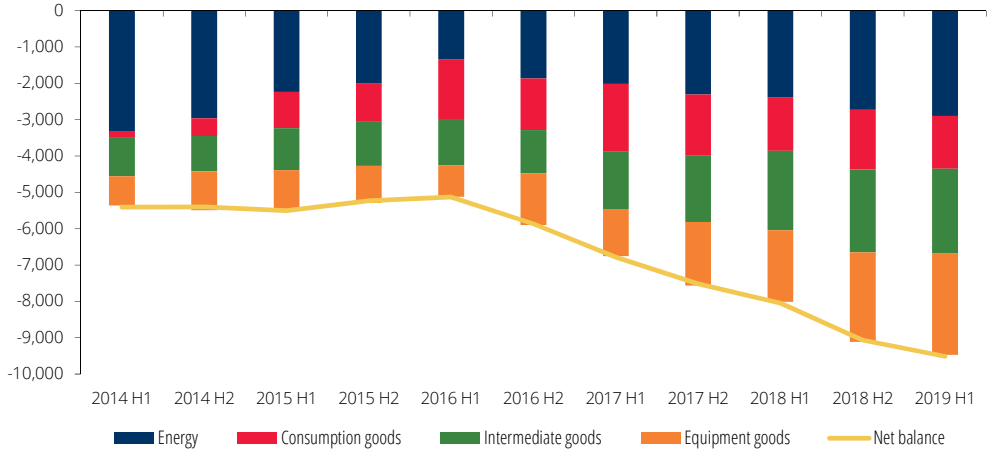
39. For further information on this topic and the methodology used, see Box 3 entitled "Recent developments in the market share of Portuguese exports", *Economic Bulletin*, June 2018.
40. Aeroplanes on lease are disregarded because they only affect international goods trade statistics, and are excluded from goods flows in the national accounts and balance of payments. This exclusion is due to the leasing system not involving the transfer of property.
41. For more information, see the Special issue entitled "Tourism exports: recent developments and future prospects", *Economic Bulletin*, December 2018.

The acceleration in imports was linked to goods imports, with services imports decelerating. Goods imports grew by 5.6%, which is 2.1 p.p. more than in the second half of 2018. The acceleration in goods imports was due to the more moderate fall in energy imports and the acceleration of other goods imports.

Using nominal information on international trade in goods, seasonally and working day-adjusted and not considering aeroplanes on lease, the high growth of non-energy imports is mainly explained by the behaviour of capital goods imports, which grew 13.7% year on year, which was 5.1 p.p. more than in the half-year before. The significant increase in these types of imports is related to the strong performance of investment, especially in machinery and equipment.

The recent decline in the goods account balance is explained by the more negative balance in the capital goods component and, to a lesser extent, intermediate goods (Chart I.6.6). Regarding the year-on-year deterioration, the contribution made by the energy goods deficit is also significant.

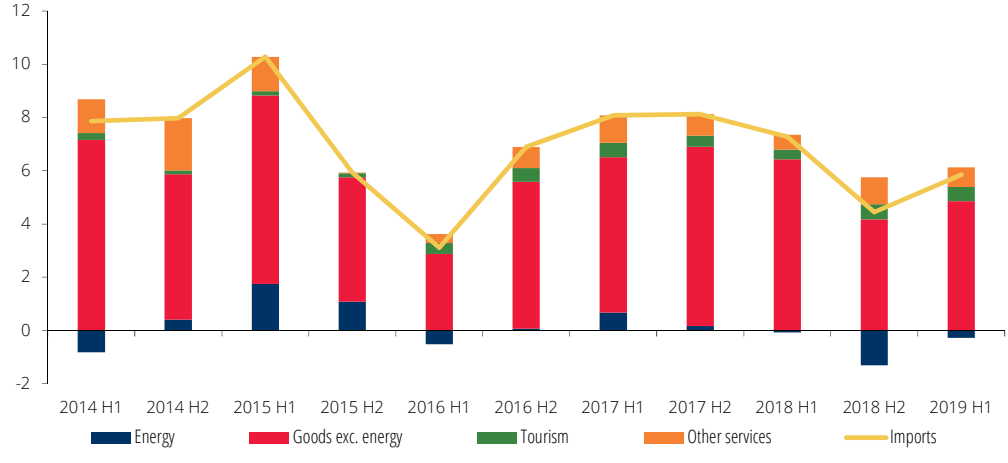
Chart I.6.6 • External balance of goods by type | Millions of euros



Source: Statistics Portugal (Banco de Portugal calculations). | Note: Seasonally and working days adjusted data, excluding leased aircrafts.

Services imports decelerated 1.8 p.p. in the first half-year, registering a year-on-year rate of change of 5.5%. This deceleration extended to tourism and other services imports (Chart I.6.7).

Chart I.6.7 • Contributions to the real year-on-year growth rate of goods and services imports | Percentage and percentage points



Source: Statistics Portugal.

Box 5 • Revision of the national accounts and balance of payments statistics

National accounts data and the economic projections included in this *Economic Bulletin* incorporate the new series of the national accounts (2016 benchmark year) for the period 1995-2019, including the final account for 2017 (previously provisional) and the provisional account for 2018 (previously calculated only in the context of quarterly accounts).[42] The Bulletin's analysis also includes the revised series of balance of payments statistics in line with the new national accounts benchmark.[43] This box briefly presents the main changes in methodology and data sources underpinning the revisions and their impact on key macroeconomic aggregates.

Changes to methodology and data sources

The benchmark revisions of national accounts are coordinated at European level, typically every five years, to introduce new data sources and update methodologies. This process aims to ensure greater data consistency – both over time and between countries – and provide a better picture of economic reality.

The 2016 benchmark national accounts took into account up-to-date data sources, namely the household consumption survey, international tourism survey and the revised data on balance of payments statistics. Regarding statistical methods, the revisions include reclassifications between spending on private consumption, public consumption and investment, and changes were made to the depreciation function of GFCF in research and development and other intangible assets. In addition, for the last two years, the changes mainly reflected the incorporation of broader and more detailed information, in line with the usual procedures for calculating final and provisional national accounts.[44]

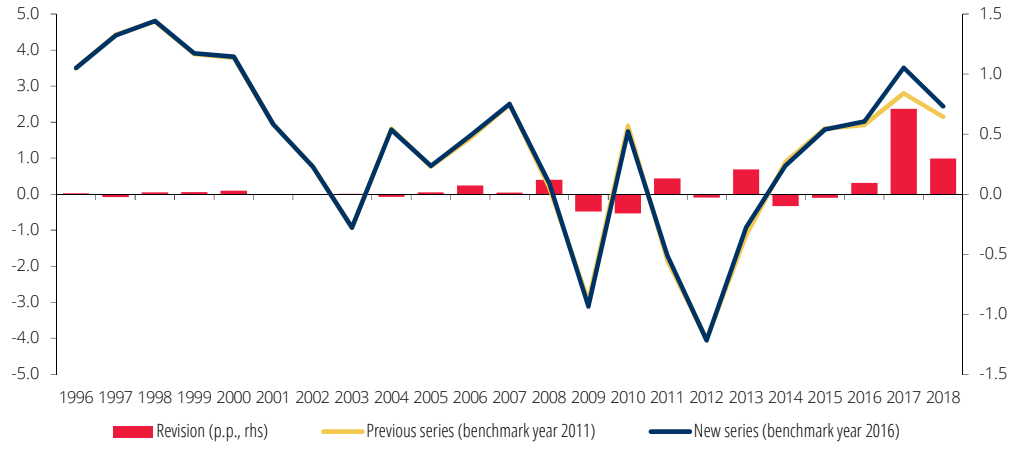
External statistics revisions included an update of the existing data sources and methodologies, the use of new sources, and improvements in the compilation process. They are also more consistent with the rest of the world account, compiled by Statistics Portugal. The main revision is a result of the incorporation of a new source for administrative data concerning social benefits received from abroad. This source has ensured a better coverage of social benefits received by Portuguese people who have worked abroad and receive a retirement pension from abroad, as well as of the social benefits received by foreign pensioners residing in Portugal. This has led to an increase in the secondary income balance account. The new statistical method for calculating taxes paid and received on investment income also had an impact on this account. Complementary information on households' e-commerce purchases of goods from EU countries was incorporated and figures for travel and tourism were revised, due to methodological changes and to the incorporation of new data sources. These revisions have had a negative impact on the balance of the goods account, in the first case, and have increased the balance of the services account, in the second case, and are reflected on exports and imports, especially of services.

42. See Statistics Portugal's press release of 23 September 2019 "Annual National Accounts – Benchmark year 2016, 1995-2018".
43. See the Statistical Press Release "National financial accounts - 2nd quarter of 2019 and revision of national financial accounts and external statistics".
44. Provisional national accounts, released 9 months after the end of the reference year, already include some annual data, such as the preliminary findings from the Simplified Corporate Information (SCI) database and revised international trade data. However, final national accounts, released 21 months after the end of the reference year, include greater detail and use more robust and complete data sources than the provisional version, as the underlying data are subject to a more comprehensive analysis. Therefore, when the final version of the accounts for a given year is released, significant revisions are likely to occur.

Revisions' impact on the Portuguese economy's statistics

Regarding the period 1995-2016, for which the accounts were already final, revisions had little impact on GDP in terms of both the level of the nominal series and the real annual growth rate (Chart C5.1). However, there were more substantial changes in the composition, reflecting the incorporation of new information and reclassifications of expenditure components.

Chart C5.1 • GDP real growth rate and revision | Percentage and percentage points



Source: Statistics Portugal.

For 2017 and 2018, GDP revisions were more significant, pointing to higher growth of economic activity compared to what was previously disclosed. In 2017 the annual rate of change of real GDP was revised by 0.7 p.p. to 3.5%. This outcome has largely resulted from the incorporation of more complete and detailed statistical information and the exercise of balancing supply/use resulting from the procedures for calculating final national accounts. In terms of expenditure components, it is worth mentioning the upward revisions in real investment growth rates – reflecting the revaluation of GFCF in construction and intellectual property products as well as of changes in inventories – and exports, particularly services (Table C5.1). The recently disclosed provisional accounts for 2018 also incorporate an upward revision of the economy's growth (0.3 p.p. to 2.4%), coupled with more buoyant private consumption and investment in the new national accounts benchmark, in turn reflecting higher import growth. Revisions of developments in residents' private consumption and imports in 2018 are partly caused by changes in the balance of payments series relating to trade in services.

In the first half of 2019 the year-on-year real GDP growth rate was also revised upwards (0.2 p.p.), due to the incorporation of the new annual figures and subsequent re-estimation of the models underlying the quarterly accounts.

In the last two years, revisions of the GVA growth rate were higher than those of GDP, reflecting higher growth in manufacturing and in most services components. Changes in total employment and employees have remained the same.

By institutional sector, the upward revision of almost all the household savings rate series is worth highlighting (Chart C5.2).[45] In 2018 the increase amounted to 1.9 p.p., reaching 6.5% of disposable

45. See Statistics Portugal's press release of 23 September 2019 "Quarterly Sector Accounts – Base 2016".

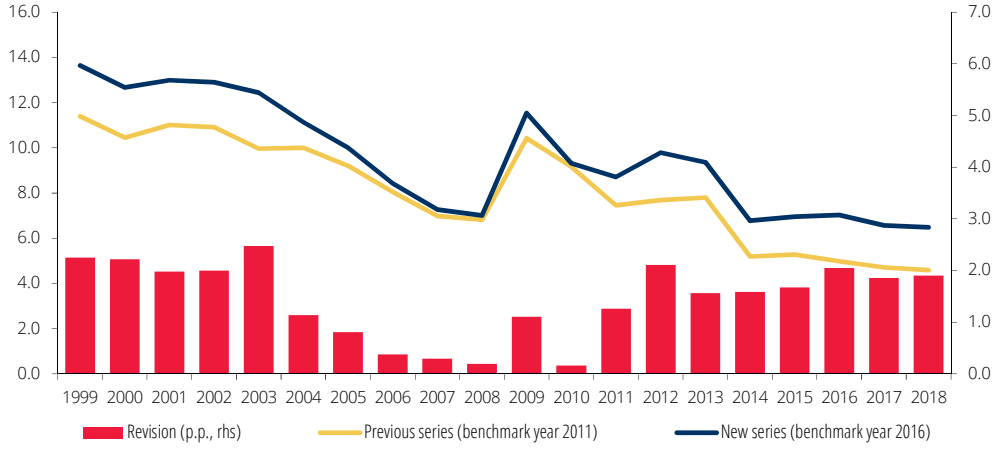
Table C5.1 • GDP real growth rate, components and revision | Percentage and percentage points

	Benchmark year 2016				Revisions *vis-à-vis* benchmark year 2011 (p.p.)			
	2016	2017	2018	2019 S1	2016	2017	2018	2019 H1
Gross Domestic Product	2.0	3.5	2.4	2.0	0.1	0.7	0.3	0.2
Private consumption	2.6	2.1	3.1	2.3	0.1	-0.2	0.5	0.2
Public consumption	0.8	0.2	0.9	0.5	0.0	0.0	0.0	0.0
Investment	2.5	11.9	6.2	11.0	0.7	2.7	0.8	1.0
GFCF	2.5	11.5	5.8	9.5	0.2	2.3	1.3	0.2
Domestic demand	2.2	3.3	3.3	3.5	0.2	0.3	0.5	0.3
Exports	4.4	8.4	3.8	2.3	0.1	0.6	0.2	-0.5
Imports	5.0	8.1	5.8	5.8	0.3	0.0	1.0	0.2
GVA	1.6	3.3	2.1	1.6	0.0	0.9	0.4	0.0

Source: Statistics Portugal.

income. The level of nominal disposable income has risen in the new series, as a result of the incorporation of new balance of payments data on social benefits from abroad and, following the consistency exercise between non-financial and financial accounts[46], of the reallocation of property income between non-financial corporations and households. The upward revision of households savings has been reflected in a revaluation of this sector's net lending capacity.

Chart C5.2 • Households savings rate and revision | As a percentage of disposable income and percentage points



Source: Statistics Portugal.

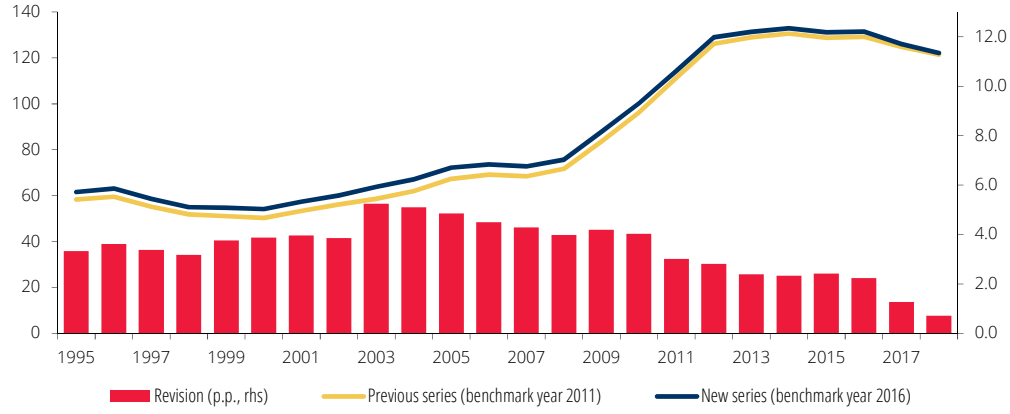
Changes in the general government accounts were mainly due to the new methodological guidelines included in the 2019 edition of the Manual on Government Deficit and Debt (MGDD) and by recommendations issued by Eurostat.[47] Fiscal balance revisions were negligible in the most recent

46. The financial accounts, entrusted to Banco de Portugal, were also revised under this procedure. See the Statistical Press Release "National financial accounts – 2nd quarter of 2019 and revision of national financial accounts and external statistics".

47. See Statistics Portugal's press release of 23 September 2019 "Main aggregates of General Government 1995-2018".

period, having been significantly larger between 2003 and 2016.[48] The new statistical methods include: (i) how to record tax credit securitisation; (ii) recording procedures for European Union funds intermediated by public institutions; (iii) change in the sector classification of TAP, SGPS, now outside the perimeter of general government, from 2016 onwards, and incorporation of the additional past losses attributable to the corporation prior to its privatisation; and (iv) recording procedures for revenue from the allocation of 4G UMTS licenses.[49] The provisions of the new MGDD edition also led to government debt statistics including accrued interest on savings certificates, resulting in an upward revision of government debt since 1995, which reached 2.1 p.p. in 2018.[50] This increase, coupled with a rise in nominal GDP, led to a 0.7 p.p. revision of the government debt ratio in 2018 (Chart C5.3).

Chart C5.3 • Maastricht public debt and revision | As a percentage of GDP and percentage points



Sources: Statistics Portugal and Banco de Portugal.

The new balance of payments statistics show an increase in the current and capital account balance. The change is more noticeable in the last three years and is linked to developments in the secondary income balance, reflecting, as mentioned above, the new figures for social benefits received from abroad (Charts C5.4 and C5.5). The goods and services account balance was revised downwards, especially from 2012 onwards, reflecting the aforementioned impact of e-commerce on goods imports. The current and capital account balance was revised upwards in 2018 by around 1 p.p., to 1.4% of GDP. Conversely the goods and services account balance dropped 0.2 p.p., to 0.8% of GDP.

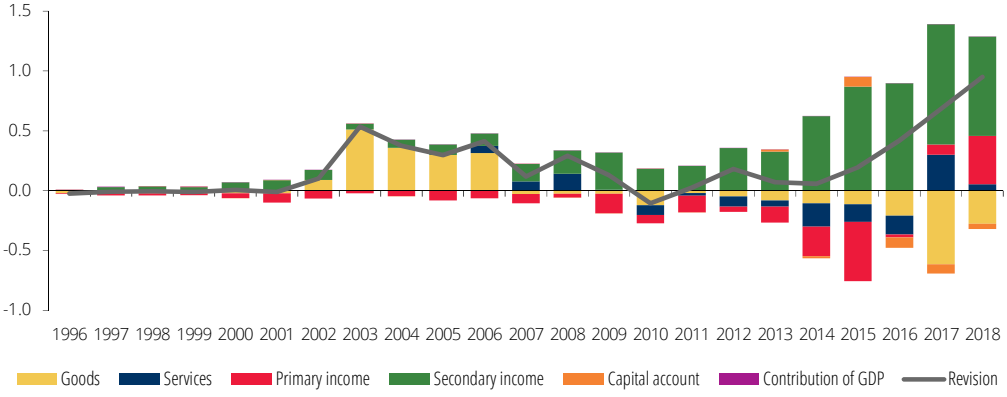
The international investment position was also re-evaluated, not only in its transactions and positions component, but also in terms of price changes, exchange rate changes and other adjustments. In the most recent years, the revision tended towards a more negative international investment position (Chart C5.6). At the end of 2018, according to the new series, the international investment position stood at -105.6% of GDP, around 5 p.p. below the previous series.

48. The most expressive fiscal balance revisions are deficit increases of 1.2 and 0.5 p.p. of GDP in 2003 and 2012, respectively. For the remainder of the period, there were only slight changes (below 0.3 p.p.), either with a positive or negative impact, depending on the years.
49. It should be noted that Parpública is still liable for TAP, SGPS's debt incurred prior to 2016, therefore the privatisation mentioned above had no significant impact on general government debt.
50. See Statistical Press Release – Public debt statistics – revised methodology.

Chart C5.4 • Current and capital account – balance and revision | As percentage of GDP and percentage points

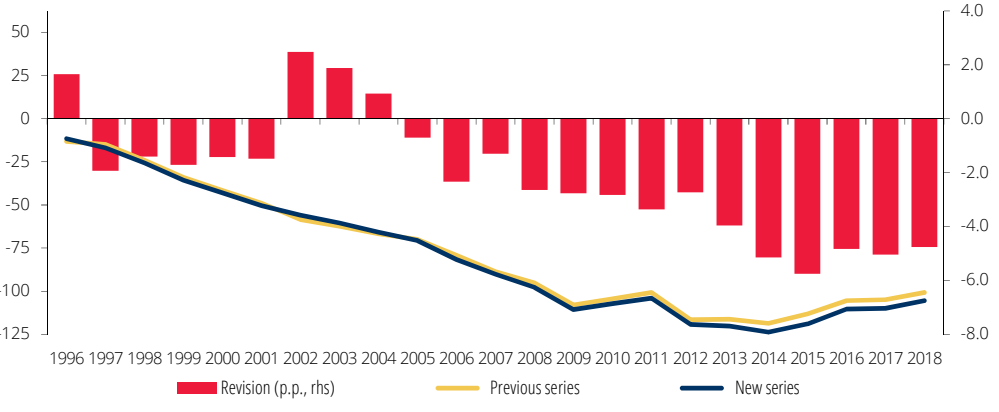
Sources: Statistics Portugal and Banco de Portugal.

Chart C5.5 • Breakdown of the revision in the current and capital account balance | In percentage points



Sources: Statistics Portugal and Banco de Portugal.

Chart C5.6 • International investment position - balance and revision | As percentage of GDP and percentage points

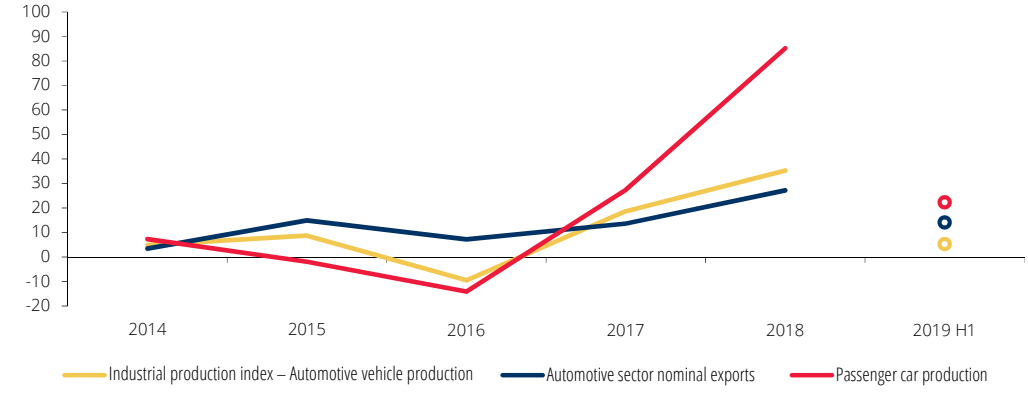


Sources: Statistics Portugal and Banco de Portugal.

Box 6 • Car production in Portugal: overview, recent developments and challenges

The car production sector in Portugal has shown high buoyancy since the second half of 2017, with a positive impact on goods exports. The number of manufactured passenger cars increased by 22.3% year on year in the first half of 2019, following growth of 85.6% in 2018 and 27.7% in 2017, reflecting the sector's increased capacity, partly related to the production of new models (Chart C6.1). Almost all domestic production is exported, which means that exports of passenger cars, in nominal terms, have also remained buoyant in the first half of 2019. By contrast, recent developments in the sector have been relatively weak at European level, with a 1.4% fall in the production of passenger cars in the EU in 2018 (2% for total car market). This declining profile is expected to have persisted in the first half of 2019. These developments at European level are linked to conjunctural events, but also to factors of a more structural nature, which cause some uncertainty about the sector's medium-term outlook. This box provides an analysis of such factors, by framing the sector's relevance in Portugal.

Chart C6.1 • Car production and export indicators | Percentage



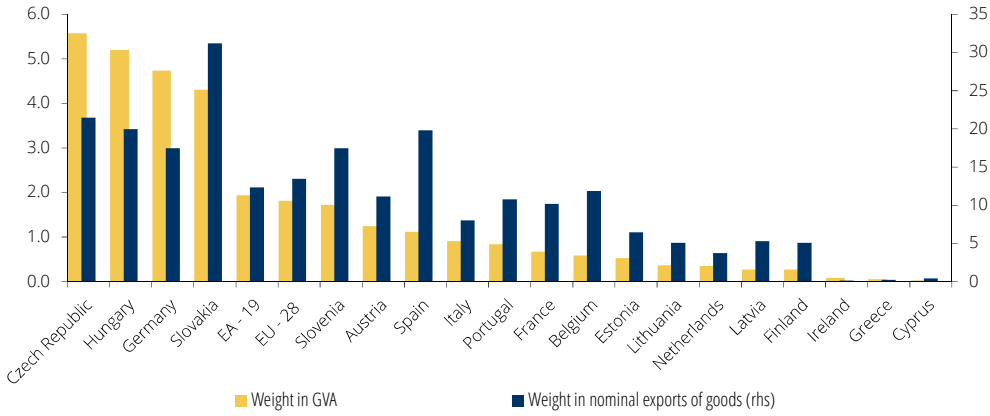
Sources: ACAP and Statistics Portugal (Banco de Portugal calculations).

In nominal terms, the share of the car production sector[51] in the economy's total GVA stood at 0.9% in 2017, the most recent year for which data are available (6.2% of the GVA of manufacturing industry). The relative importance of this sector's employment in total employment (in terms of number of individuals) stood at 1% in 2017 (5.8% in manufacturing). The share of the sector's exports in total nominal exports of goods has evolved in line with developments in the GVA share. In terms of productivity indicators, average compensation of employees and investment ratio, the motor vehicle sector compares favourably with the average for the economy and manufacturing. The importance of foreign direct investment in the sector, as well as its exposure to international competition due to its heavy export component, may help to explain the sector's enhanced relative performance in these indicators.

In an international comparison, the sector's share in GVA and total goods exports in Portugal stands at an intermediate position in relation to the euro area countries and the EU as a whole (Chart C6.2). Some EU countries stand out in terms of the sector high importance in these aggregates.

51. In this box, the motor vehicle sector includes the manufacturing of motor vehicles, the manufacturing of bodies (coachwork) for motor vehicles, trailers and semi-trailers and the manufacturing of parts and accessories for motor vehicles, corresponding to code 29 of the statistical classification of economic activities in the European Community (NACE rev. 3).

Chart C6.2 • Automotive sector weight | Percentage



Source: Eurostat. | Notes: 2016 data for GVA and 2018 data for exports. The automotive sector data refers to item 29 of the statistical classification of products by activity (CPA) nomenclature.

In the motor vehicle sector analysis, it is important to bear in mind that it is not possible to assess its contribution to economic growth solely based on its impact on developments in exports, and that it is also necessary to take into account the contribution made by imports associated with such exports. This is a sector highly integrated in global production chains, with an import content which amounted to around 70% in 2015.[52] The import content of these exports originates mainly from the euro area and the United Kingdom, and most recently from China. By sector of activity, the import content of exports in the motor vehicle sector originates mainly from the sector itself, but also from intermediate part industries for car production, trade and business support services (Chart C6.3).

Given their strong performance, exports in this sector continued to make a notable contribution to growth in total exports of goods, in nominal terms, in the first half of 2019, albeit lower than in the previous year (2 and 3 p.p. contributions respectively in the first half of 2019 and in 2018). This sector's exports grew above relevant external demand in the last two years, which led to external market share gains, a trend which is expected to have continued in the first half of 2019 (Chapter 6).

This is a particularly remarkable performance, as it occurred in a context of supply disruptions in the sector in Europe in the second half of 2018, which stemmed from the introduction of a new regulation on pollutant emissions (WLTP). This broadly constrained the European car production in this period, contributing to a deceleration in activity in the euro area.[53] Furthermore, there appears to be a growing concern globally about demand issues in the sector, amid uncertainty related to the increase in protectionism and to a deceleration in global economy. The European Commission's business surveys show a decline in this sector's confidence in the European Union and in Portugal since the start of 2018, which is more pronounced than in total manufacturing.

These surveys also point to a significant increase in demand as a factor limiting production in the sector in the third quarter of 2019. This may reflect short-term effects at European level, such as the fading out of pent-up demand effects for this kind of good originated during the crisis period, but also more medium and long-term aspects. In fact, developed countries show a downward trend in demand for passenger

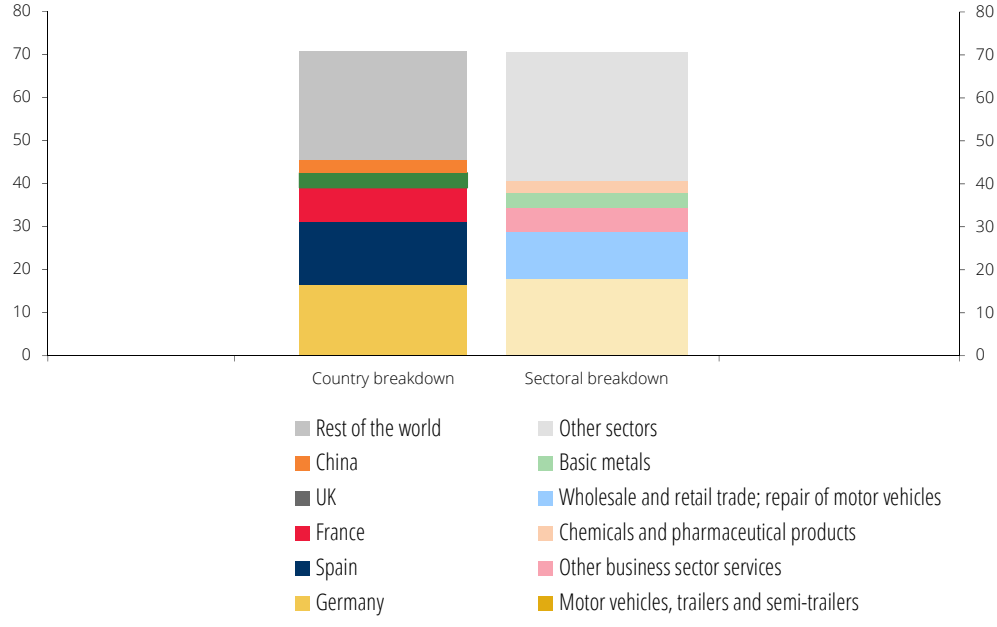
52. For further details on the methodology used to calculate import content, see Cardoso, F. and Rua, A. (2019), "The import content of final demand in Portugal: Nominal and real evolution", *Banco de Portugal Economic Studies*, 5(3), 5-73.

53. Economic and Market Report EU Automotive Industry Full-year 2018, ACEA.

cars, given the low population growth and the high car density. Changes in consumer preferences for more environmentally friendly cars and shared mobility are trends which create challenges to producers. The possibility of new changes in regulation, as well as the risks arising from the levy or increase in car import tariffs, amid a rise of protectionist policies, also contribute to higher uncertainty about the sector's outlook. Other relevant factors are advances in technology linked to car software (autonomous vehicles and connectivity) and the entry into the market of new suppliers, associated with new technologies and materials, which change the sector's value chains and put competitive pressure on traditional producers.[54]

These challenges are highly relevant to the sector in Portugal, which heavily depends on foreign direct investment and external demand. Thus, these pivotal factors entail both risks and opportunities. On the one hand, in a context of decelerating global activity, the high concentration of the motor vehicles manufacture segment (with only five plants) means that possible decisions to reduce production by a limited set of multinational companies may have an important macroeconomic impact. On the other hand, the restructuring of global production chains resulting from possible responses to the challenges mentioned above may also give rise to opportunities for the industry in Portugal. The sector's recent sound performance in Portugal, in particular the ability to attract new foreign investment, strongly reflected in developments in exports and their market share, points to the maintenance of competitiveness factors in the domestic industry. In this context, it is important to continue to promote an institutional framework favourable to its activity.[55]

Chart C6.3 • Breakdown of the import content of automotive sector exports in 2015
| Percentage points



Sources: OECD (TiVA) and Banco de Portugal.

54. 2019 Global Automotive Supplier Study, Deloitte.

55. See Amador, J., Cabral, S. and Ringstad, B. (2019) "Regulatory costs and performance of Portuguese firms". *Banco de Portugal Economic Studies*, 5(3), 1-30.

7 Prices

The inflation rate fell in the first half of 2019

In the first half of 2019, the inflation rate in Portugal, as measured by the year-on-year rate of change in the Harmonised Index of Consumer Prices (HICP), stood at 0.7% (Table I.7.1). This represents a decrease of 0.6 p.p. from the previous half-year (-0.5 p.p. compared with the 2018 average). The variation in energy prices was negative in the first half of 2019, following the increase observed in the previous year. Excluding energy, prices maintained a growth rate slightly below 1% for the third consecutive half-year.

Table I.7.1 • HICP – Main components | Growth rate, percentage

	Weights 2018	Annual rate of change			Year-on-year rate of change		
		2016	2017	2018	2018 H1	2018 H2	2019 H1
Total	100.0	0.6	1.6	1.2	1.1	1.3	0.7
Goods	57.8	0.0	0.9	0.5	0.3	0.7	0.1
Food	23.1	0.8	1.7	1.0	1.0	0.9	0.8
Unprocessed food	6.3	1.6	2.2	1.3	1.6	1.1	0.5
Processed food	16.9	0.3	1.6	0.8	0.8	0.9	0.9
Industrial	34.7	-0.7	0.3	0.2	-0.1	0.5	-0.4
Non-energy	26.7	-0.3	-0.8	-1.1	-1.2	-1.1	-0.4
Energy	7.9	-1.8	3.7	4.8	3.6	6.1	-0.5
Services	42.2	1.5	2.5	2.1	2.0	2.1	1.5
Memo items:							
Total excluding energy	92.1	0.9	1.4	0.9	0.8	0.9	0.8
Total excluding food and energy	68.9	0.9	1.2	0.8	0.8	0.8	0.8
Total excluding food, energy and volatile tourism-related items	64.2	0.6	0.6	0.4	0.4	0.5	0.8
Total excluding administered prices	89.9	0.6	1.6	1.1	1.0	1.2	0.7
CPI		0.6	1.4	1.0	0.9	1.1	0.6
HICP – Euro area		0.2	1.5	1.8	1.5	2.0	1.4

Sources: Eurostat and Statistics Portugal. | Note: Volatile tourism-related items include package holidays and accommodation (weight of 4.0% in total HICP) and domestic and international flights (weight of 5.8%).

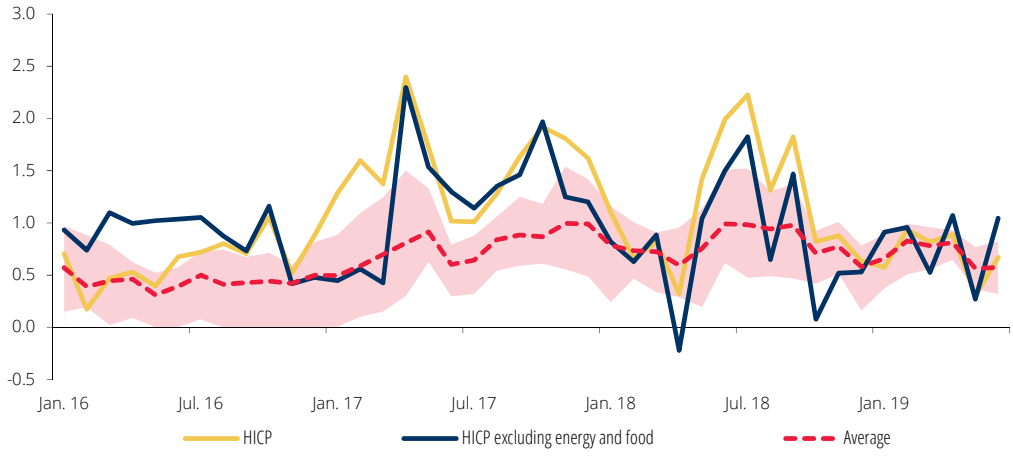
Developments in the HICP excluding energy were associated with a deceleration in prices of services and a smaller fall in non-energy industrial goods. The deceleration in services prices was essentially due to the slowdown in accommodation services,[56] in a context of a slowdown in demand and greater pressure from competing markets. This development occurs in a scenario of slightly reduced average occupancy rates. On the other hand, non-energy industrial goods prices registered a less pronounced fall, to which the acceleration in car prices contributed.[57]

Over the half-year, the monthly inflation rate varied between 0.3% and 0.9% (Chart I.7.1). The underlying inflation measures remained stable, continuing to point to a very contained evolution of pressures on consumer prices in Portugal.

56. The item "hotels, motels, inns and similar accommodation services" registered a year-on-year rate of change of 1.5%, representing a marked deceleration compared to recent years (7.3% in 2018 and 12.0% in 2017).

57. The item "new motor vehicles" presented a year-on-year rate of change of 5.2%, compared with 2.4% in the second half of 2018.

Chart I.7.1 • HICP and underlying inflation measures | Year-on-year rate of change, percentage



Source: Statistics Portugal (Banco de Portugal calculations). | Note: The shaded area includes the following inflation measures: trimmed means at 5% and 12.5%, median, first principal component of the HICP subindices excluding food, energy and volatile components associated with tourism. The average is calculated as a simple average of these measures.

Inflation in Portugal remained below that observed in the euro area

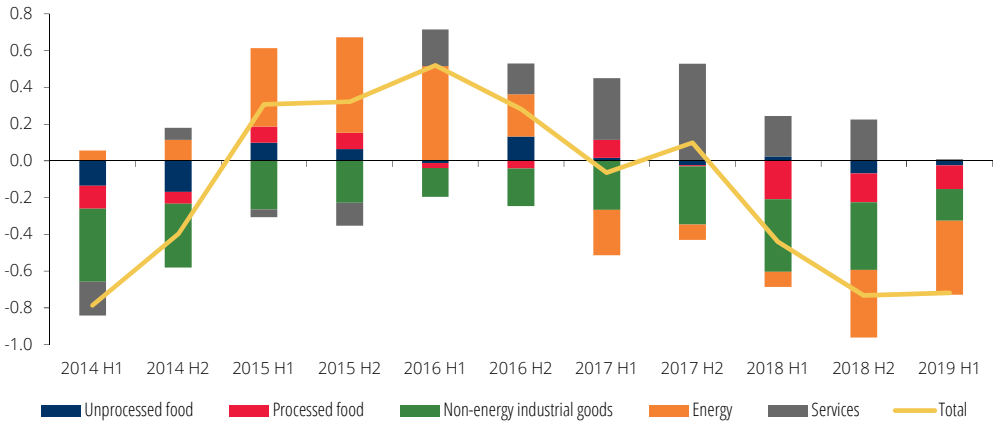
There was a fall in inflation in the euro area, also influenced by the fall in energy prices (Table I.7.1). The rate of change of underlying inflation (excluding food and energy) remained at 1.0%, close to the levels observed in the preceding two years (Chapter 2).

The inflation differential in Portugal *vis-à-vis* the euro area remained negative, -0.7 p.p. in the first half of 2019 (Chart I.7.2). In the set of aggregates that contributed to the negative differential, energy stands out.[58] Also noteworthy is the disappearance of the positive contribution of services in this half of the year, reflecting especially the marked deceleration in tourism-related services prices.

Inflation rates in Portugal and the euro area remain very low considering the phase of the economic cycle, namely given the positive gap in the product market and reduction of the labour market slack. The dispersion of inflation rates in the euro area countries – as measured by the coefficient of variation – is close to minimum levels, reflecting the fact that economies that traditionally had higher inflation rates – such as Portugal, Spain, Italy, Greece and Ireland – currently have rates lower than those of the area as a whole. In contrast, inflation rates in Germany or France are close to those observed, on average, during the pre-crisis period.

58. This differential is due to the fall in electricity prices in Portugal, which was not observed in the euro area, and the greater increase in the price of the items natural gas and town gas and liquid fuels in the euro area in comparison to Portugal.

Chart I.7.2 • Inflation differential between Portugal and the euro area | Percentage points

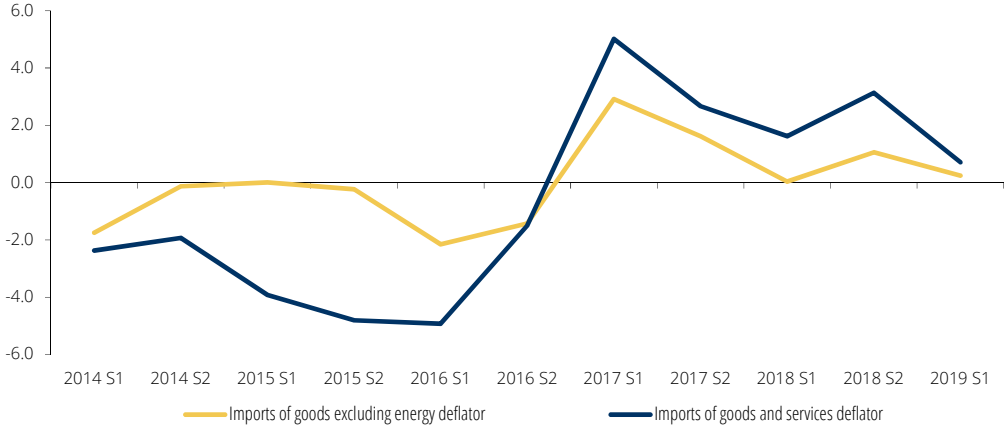


Sources: Eurostat and Statistics Portugal.

External inflationary pressures remained very contained

In the first half of 2019, external inflationary pressures remained very contained. Non-energy import prices recorded a year-on-year rate of change of 0.2% in the first half of 2019, compared with 0.4% over the previous year (Chart I.7.3).

Chart I.7.3 • Deflators of imports of goods and services and goods excluding energy | Year-on-year rate of change, percentage

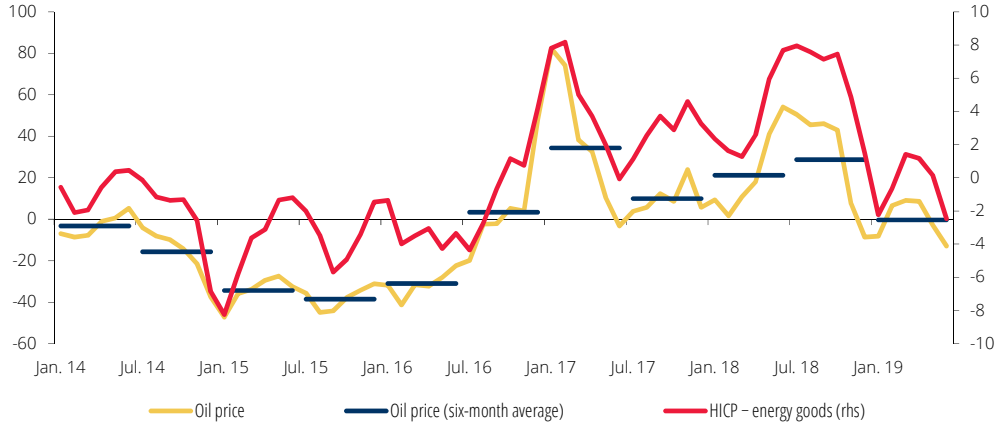


Source: Statistics Portugal.

In the first half of 2019, average international oil prices in euro were slightly lower than observed in the same period one year earlier (-0.4%) (Chapter 2). This compares with year-on-year increases of 21.2% and 28.7% in the first and second halves of 2018. This near-zero variation of oil prices was reflected in the behaviour of energy prices (year-on-year growth rate of -0.5% in the first half of 2019, compared with 6.1% for the second half of 2018) (Chart I.7.4).

These developments led to a deceleration in the goods and services import deflator (year-on-year rate of change of 0.7%, compared with 3.1% in the latter half of 2018).

Chart I.7.4 • Oil price in euros and HICP of energy goods | Year-on-year rate of change, percentage



Sources: Bloomberg, ECB and Statistics Portugal.

Domestic pressures based on wage developments were offset by the recovery in productivity

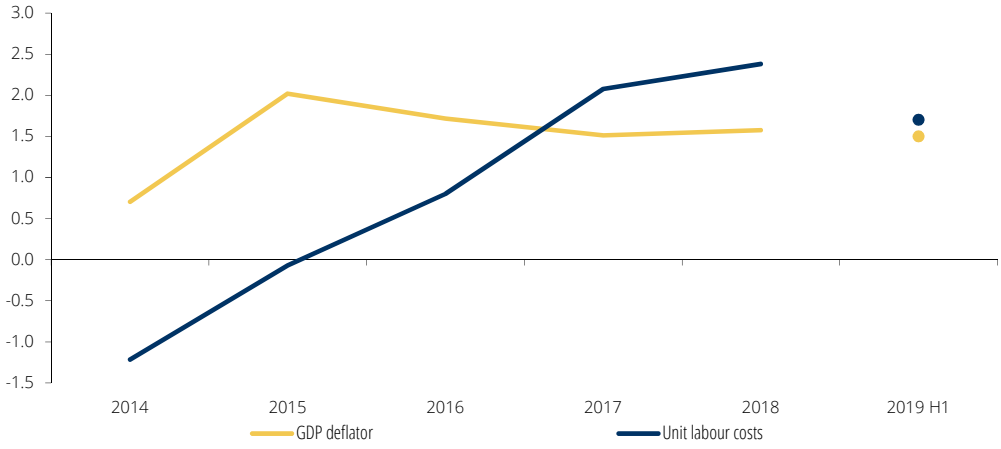
In the first half of 2019, the impact of wage growth on firms' unit labour costs was mitigated by developments in productivity. The year-on-year rate of change in average compensation per employee stood at 2.6% in the first half of 2019, compared with 2.5% for the previous year as a whole. This development, allied with a positive variation in productivity per employee (Chapter 5), meant a deceleration in unit labour costs, from 2.4% in 2018 to 1.7% in the first half of 2019. In this context, the GDP deflator – a measure that summarises domestic inflationary pressures on the economy – continued to present moderate developments (year-on-year rate of change of 1.5% in the first half of 2019, following 1.6% in the previous year – Chart I.7.5).

The slow pass-through of wage pressures to prices – also visible in the euro area – is related with the prolonged period of low inflation in the euro area (Chapter 2). In the case of Portugal, specific factors such as the slow disappearance of very significant increases in tourism-related services prices in the recent past,[59] as well as the reduction in some regulated prices (namely, electricity, public transport passes and school textbooks),[60] contributed to a more moderate evolution of inflation in the first half of the year.

59. The year-on-year rate of change in these prices was 1.1% in the first half of 2019, compared with 10.0% and 5.7% in 2017 and 2018, respectively.

60. In the first half of 2019, the item "electricity" presented a year-on-year rate of change of -3.7%, the items "passenger transportation", which reflected the variation in public transport passes prices, presented a year-on-year rate of change of -5.3% and the item "school textbooks" of -20.6%.

Chart I.7.5 • GDP deflator and unit labour costs | Year-on-year rate of change, percentage

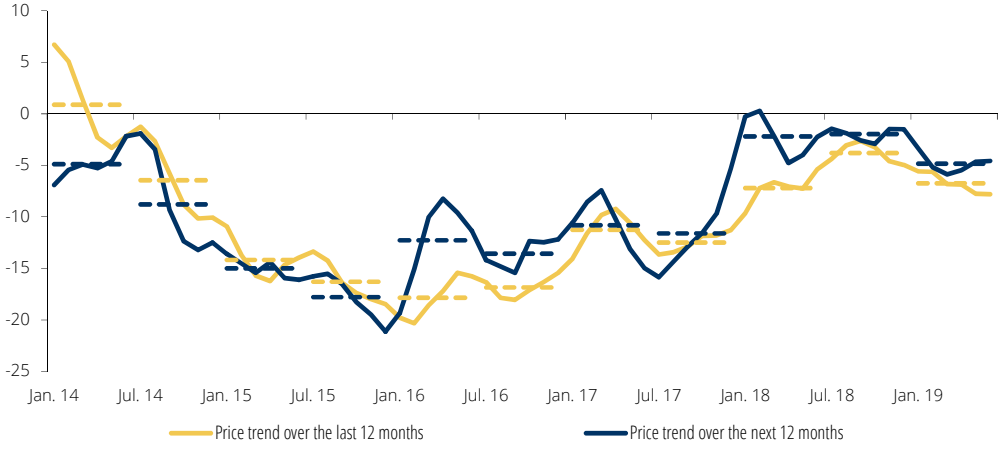


Source: Statistics Portugal (Banco de Portugal calculations).

Short-term inflation expectations fell, but remain anchored for the longer term

Consumer expectations with regard to price trends over the next 12 months were at levels below those of the previous year in the first half-year (Chart I.7.6). The Consensus Economics forecasts for inflation this year have also fallen over the half-year (from 1.3% to 0.9%), pointing to values below those of the inflation observed in 2018. However, forecasts for the year 2020 and longer time horizons (three, five and ten years) remained broadly unchanged, at about 1.8%. These movements in short to medium-term inflation expectations are compatible with those registered in the euro area as a whole (Chapter 2).

Chart I.7.6 • Price trend over the last/next 12 months | Balance of respondents



Source: European Commission. | Note: Six-month averages dashed.

8 Balance of payments

The current and capital account posted a deficit in the first half of 2019, as a result of developments in the goods and services balance

According to balance of payments statistics, in the first half of 2019, the current and capital account recorded a deficit of 2% of GDP, compared with a net-zero balance a year earlier (Table I.8.1). Developments in the current and capital account balance in recent years have been influenced by the seasonality of operations, with lower balances in the first half of the year compared to the second. The analysis undertaken in this chapter incorporates the revisions of the balance of payments and international investment position statistics, as well as the revision of the national accounts base (Box 5).

Table I.8.1 • Balance of payments | As a percentage of GDP

	2014	2015	2016	2017	2018	2018 H1	2019 H1
Current and capital account	1.5	1.5	2.0	2.1	1.4	0.0	-2.0
Current account	0.2	0.2	1.1	1.2	0.4	-0.7	-2.7
Goods and services account	0.8	1.4	1.7	1.5	0.8	0.3	-1.7
Goods	-5.6	-5.4	-5.4	-6.8	-7.5	-6.8	-8.2
Energy	-3.6	-2.4	-1.7	-2.2	-2.5	-2.4	-2.8
Goods excluding energy	-2.0	-3.1	-3.7	-4.6	-5.0	-4.5	-5.4
Services	6.4	6.8	7.1	8.3	8.3	7.2	6.5
of which:							
Travel and tourism	4.1	4.6	5.0	5.8	6.0	4.7	4.8
Primary income account	-2.2	-2.9	-2.4	-2.4	-2.4	-2.9	-2.6
Secondary income account	1.6	1.7	1.8	2.1	2.0	1.9	1.7
of which:							
Emigrants/immigrants remittances	1.5	1.6	1.5	1.5	1.5	1.4	1.4
Capital account	1.3	1.2	0.9	0.9	1.0	0.7	0.6
Financial account	1.7	1.5	1.8	2.3	1.6	-0.1	-1.3
Errors and omissions	0.2	0.0	-0.2	0.2	0.2	-0.1	0.7

Sources: Statistics Portugal and Banco de Portugal. | Note: The current and capital account balance and the financial account balance must be identical. In practice, this is not the case mainly due to imperfections in data sources and compilation systems, which lead to errors and omissions.

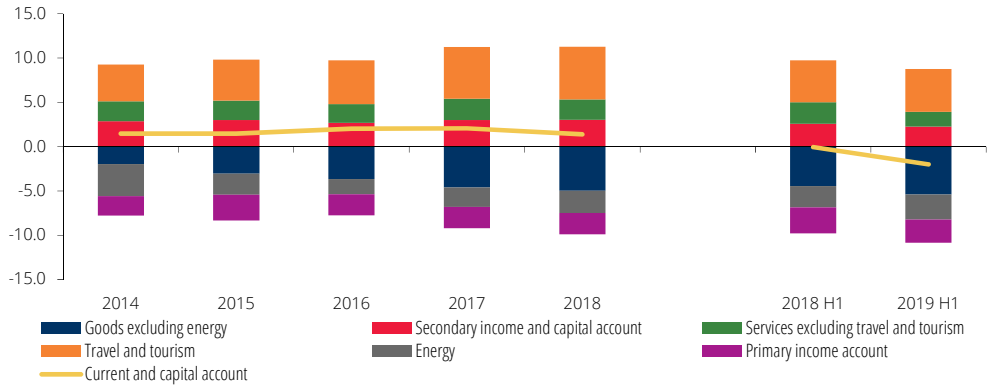
The breakdown of the current and capital account shows that developments in the first half of the year were largely due to the increase in the goods account deficit to 8.2% of GDP (6.8% in the same period a year before). The deterioration of both energy and non-energy account balances contributed to these developments (Chart I.8.1).

As observed in recent years, the increase in the goods account deficit in the first half of the year chiefly reflected the stronger growth in volume of imports compared to exports (Chart I.8.2). In this respect, the growth differential in trade flows was particularly wide in the capital goods and energy components. In the first case, the significant increase in imports is related with the strong dynamics in productive investment, especially in machinery and equipment (Chapter 6). In the second case, developments in trade flows was constrained by interruptions for maintenance at Portuguese refineries.

An important element that has characterised the evolution of external accounts in the last decade has been the increase in the services account surplus, reflecting the improvement in the tourism account balance as well as in other services (Chart I.8.3). Notwithstanding, in the first half of 2019, this surplus decreased by 0.7 p.p., to 6.5% of GDP, with a slight improvement in the

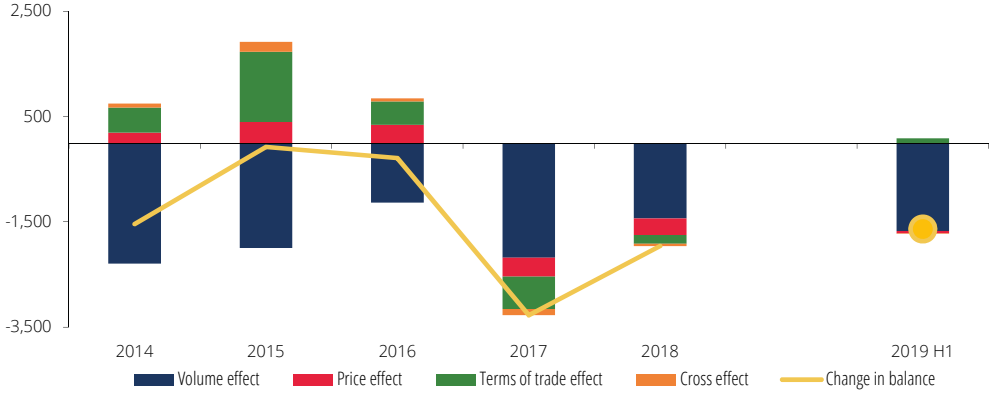
travel and tourism account balance and a fall in the surplus of the other services account. These developments, alongside the evolution in the goods account, translated into a deterioration in the combined goods and services account balance, which stood at -1.7% of GDP in the first half of the year (+0.3% in the first half of 2018).

Chart I.8.1 • Breakdown of the current and capital account balance | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal. | Note: The breakdown of the goods account balance relies on nominal international trade data released by Statistics Portugal.

Chart I.8.2 • Breakdown of the change in the goods account balance | Millions of euros



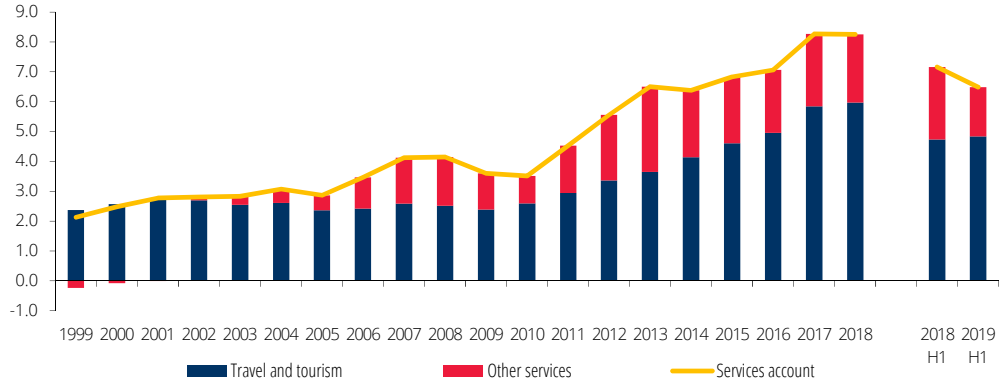
Sources: Statistics Portugal and Banco de Portugal. | Notes: year-on-year figures are considered for 2019 H1. The change in the goods account balance can be decomposed into four effects: (i) volume effect: effect of the change in imported and exported quantities, $[X_{t-1} \times vx_t] - [M_{t-1} \times vm_t]$; (ii) price effect: effect of the average price growth of external trade, $[X_{t-1} \times p_t] - [M_{t-1} \times p_t]$; (iii) terms of trade effect: effect of the relative change in exports and imports prices, $[X_{t-1} \times (px_t - p_t)] - [M_{t-1} \times (pm_t - p_t)]$; (iv) cross effect: effect of the interaction between the change in quantities and in prices of exports and imports, $[X_{t-1} \times vx_t \times px_t)] - [M_{t-1} \times vm_t \times pm_t)]$, where X_{t-1} e M_{t-1} denote exports and imports at time $t-1$ at current prices, respectively; vx_t and vm_t are the growth rates in volume of exports and imports at time t, respectively; px_t and pm_t are the growth rates of exports and imports prices at time t, respectively; p_t is the average growth rate of external trade prices at time t given by $p_t = (px_t + pm_t)/2$.

The decrease in the primary income account deficit was offset by smaller surpluses in the secondary income and capital account balances

The evolution in the primary income account balance has benefited from the protracted low interest rate environment (Chapter 3). In the first half of 2019, the primary income account deficit fell by 0.3 p.p. to 2.6% of GDP. Particularly, the direct investment income and other investment deficits were

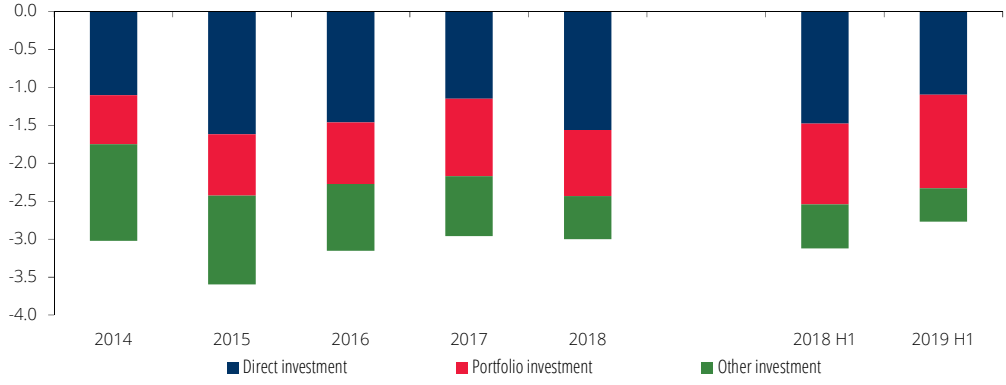
lower year on year, reflecting the reduction in interest payments to non-resident entities (Chart I.8.4). It is worth noting the reduction in interest payments on government debt, partly owing to the impact of the early repayment of the IMF loan under the Economic and Financial Assistance Programme to Portugal.

Chart I.8.3 • Breakdown of the services account balance | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

Chart I.8.4 • Balance of investment income | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

In turn, the secondary income account balance – which records current transfers to and from abroad – posted a surplus slightly lower than that observed in the same period last year, at 1.7% of GDP. This was the result of an increase in Portugal's financial contribution to the EU budget, reflecting early repayment of twelfths. In contrast, there was an increase in receipts of social benefits from abroad, against a background of an increase in flows of retired foreign nationals who became residents in Portugal, and the return of emigrants who are beneficiaries of pensions paid by foreign social security systems. Finally, the balance of emigrants'/immigrants' remittances remained at 1.4% of GDP.

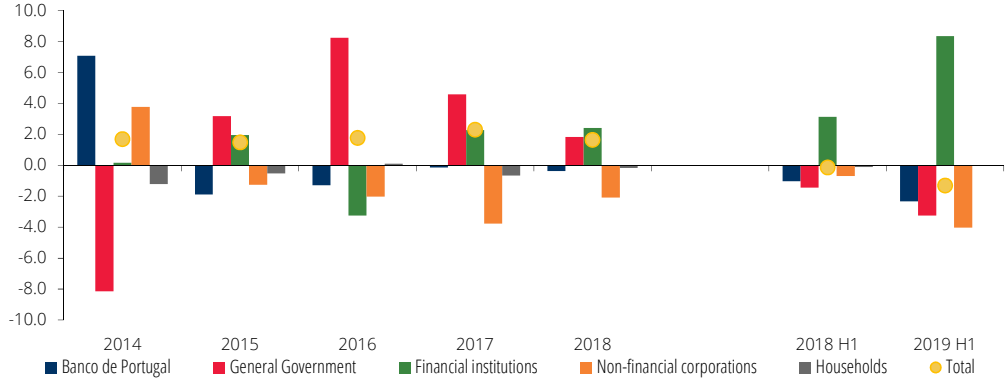
The capital account surplus decreased slightly in the first half of 2019 to stand at 0.6% of GDP, largely reflecting the purchase of carbon dioxide emission permits.[61] Against a background of recent increases in the price of carbon emissions, some firms may have anticipated the purchase of licences in response to possible future price increases. Furthermore, in the first half of the year, the inflow of funds from the EU – recorded in the primary and secondary income account and the capital account – remained at 1.3% of GDP.[62]

61. In balance of payments statistics this purchase is recorded under the heading *Acquisition of non-produced non-financial assets* in the capital account.
62. Box entitled "Impact of EU funds on the current and capital account: Portugal 2020 in perspective", *Economic Bulletin*, March 2019.

The Portuguese economy was a net receiver of funds in the first half of 2019

In the first half of 2019 the Portuguese economy was a net receiver of funds, given that external borrowing exceeded the acquisition of assets by non-residents. By institutional sector, the general government and non-financial corporations attracted greater net external borrowing. As for general government, investment by non-residents in Treasury bonds should be highlighted. For non-financial corporations, reference should be made to financing obtained from non-residents through direct investment relations (Chapter 3). In contrast, financial institutions, in particular banks, increased their net external investment through the purchase of long-term debt securities issued by non-residents (Chart I.8.5). This reflected a reinforced trend of greater diversification in the debt securities portfolio, reducing the concentration of exposure among residents.

Chart I.8.5 • Change in net external assets | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal. | Notes: The change in net external assets corresponds to net acquisitions of assets issued by non-residents less the net external financing obtained from non-residents. The acquisitions of external assets and the redemption of external liabilities are recorded with a positive sign and represent an outflow of funds. The sale of assets and the issuance of liabilities acquired by non-residents are recorded with a minus sign and represent an inflow of funds into the Portuguese economy.

The international investment position stood at -104.4% of GDP in the first half of the year, compared to -105.6% at the end of 2018. This debtor position is a significant vulnerability of the Portuguese economy and is one of the highest across euro area countries. Its reduction at an appropriate pace requires sustained current and capital account surpluses, which reinforces the need to monitor recent and future developments in this account balance.

II Projections for the Portuguese economy in 2019

Deceleration in activity in 2019

According to the projections produced by Banco de Portugal the Portuguese economy's expansion will continue in 2019 for the sixth consecutive year, although at a slower pace than in the recent past. GDP is expected to grow by 2.0% in the year as a whole (2.4% in 2018) (Table 1). This is 0.9 p.p. higher than the growth projected by the ECB for the euro area.[1]

The slowdown in economic activity in Portugal in 2019 is projected to reflect a lower contribution of exports, amid weaker growth of global trade and external demand for Portuguese goods and services. The contribution of domestic demand is estimated to remain unchanged, with a slight deceleration in private consumption and stronger GFCF dynamics, particularly in the first half of the year. In intra-annual terms, GDP growth is likely to remain relatively stable over the year, with a year-on-year rate of change of 2.0% and 1.9% in the first and second halves respectively.

Table 1 • Projections of Banco de Portugal for 2019 | Annual rate of change, in percentage (except otherwise indicated)

	Weights 2018	EB October 2019 (National accounts benchmark year 2016)					EB June 2019 (National accounts benchmark year 2011)		
		2017	2018	2019 (p)	2019 H1	2019 H2 (p)	2017	2018	2019 (p)
Gross domestic product	100.0	3.5	2.4	2.0	2.0	1.9	2.8	2.1	1.7
Private consumption	64.8	2.1	3.1	2.3	2.3	2.4	2.3	2.5	2.6
Public consumption	17.0	0.2	0.9	0.5	0.5	0.5	0.2	0.8	0.5
Gross fixed capital formation	17.6	11.5	5.8	7.2	9.5	5.0	9.2	4.4	8.7
Domestic demand	99.9	3.3	3.3	2.9	3.5	2.4	3.0	2.8	3.5
Exports	43.5	8.4	3.8	2.3	2.3	2.3	7.8	3.6	4.5
Imports	43.4	8.1	5.8	4.6	5.8	3.4	8.1	4.9	8.0
Contribution to GDP growth, net of imports (in p.p.) (a)									
Domestic demand		1.6	1.7	1.6	1.7	1.5	1.3	1.3	1.3
Exports		1.9	0.8	0.4	0.3	0.4	1.5	0.8	0.4
Employment (b)		3.3	2.3	0.9			3.3	2.3	1.3
Unemployment rate		8.9	7.0	6.4			8.9	7.0	6.3
Current plus capital account (% of GDP)		2.1	1.4	0.5			1.4	0.4	0.1
Goods and services account (% of GDP)		1.5	0.8	-0.7			1.8	1.0	-0.5
Harmonised index of consumer prices		1.6	1.2	0.4			1.6	1.2	0.9

Sources: Banco de Portugal and Statistics 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. The calculation of import content was based on data for 2015. For more information, see the Box entitled "Update of the import content of global demand for the Portuguese economy", in the March 2019 issue of the *Economic Bulletin*. (b) Total employment, in number of persons, according to the national accounts concept.

The recent revision of the national accounts and balance of payments series (Part I, Box 5) means that current projections for 2019 cannot be directly compared to those presented in the June issue of the *Economic Bulletin*. The difference between growth projected now for economic activity in 2019 and that projected in June reflects two distinct factors with opposite impacts. On the one hand, the new national accounts series (benchmark year 2016) showed a faster GDP growth pace in the past two years and also in the first half of 2019. This implies that the Portuguese economy's underlying momentum was underestimated in the June projection.[2] On the other hand, the available monthly economic indicators

1. According to the September 2019 ECB staff macroeconomic projections for the euro area economic activity in the euro area is expected to slow down from 1.9% in 2018 to 1.1% in 2019.
2. Compared to June, the higher GDP growth projected now essentially results from the inclusion of this new information.

and the international environment assumptions point to some weakening of economic activity in the recent period, partly reflecting greater uncertainty at international level and a slowdown in global activity and trade.

Deterioration of the external environment in terms of global activity and trade growth

The international environment assumptions for the Portuguese economy entail a slowdown in global activity, more pronounced in world trade in 2019.[3] Global GDP growth is expected to decline from 3.6% in 2018 to 2.8% in 2019 and world trade to grow by 1%, after 4.2% in 2018 (Table 2). World trade developments are associated with a weakening of industrial activity and an increase in political and economic uncertainty worldwide, reflecting in particular a rise in protectionist tensions and the developments associated with Brexit (Part I, Chapter 2). External demand for Portuguese goods and services is also expected to decelerate, growing by 1.8% against 3.2% in 2018. Compared with the June *Economic Bulletin*, there were downward revisions to world trade and external demand growth.

According to the assumptions of the projection exercise, oil prices should decline by 12.1% in 2019, to USD 62.5 per barrel (-7.7% in EUR). This level was revised downwards by about 5% from the June *Economic Bulletin*. The effective exchange rate of the euro (calculated with respect to 19 trading partners) is projected to depreciate in 2019, slightly less than forecast in the previous Bulletin. The euro area's accommodative monetary policy translates into a monetary and financial environment that will continue to be favourable to the financing of the economy.

Table 2 • Projection assumptions

		EB October 2019		EB June 2019	
		2018	2019	2018	2019
International environment					
World GDP	yoy	3.6	2.8	3.6	3.1
World trade	yoy	4.2	1.0	4.1	1.4
External demand	yoy	3.2	1.8	3.2	2.3
Oil prices in dollars	aav	71.1	62.5	71.1	68.1
Oil prices in euros	aav	60.2	55.6	60.2	60.6
Monetary and financial conditions					
Short-term interest rate (3-month EURIBOR)	%	-0.3	-0.4	-0.3	-0.3
Implicit interest rate in public debt	%	2.8	2.7	2.9	2.8
Effective exchange rate index	yoy	2.5	-1.2	2.5	-1.8
Euro-dollar exchange rate	aav	1.2	1.1	1.2	1.1

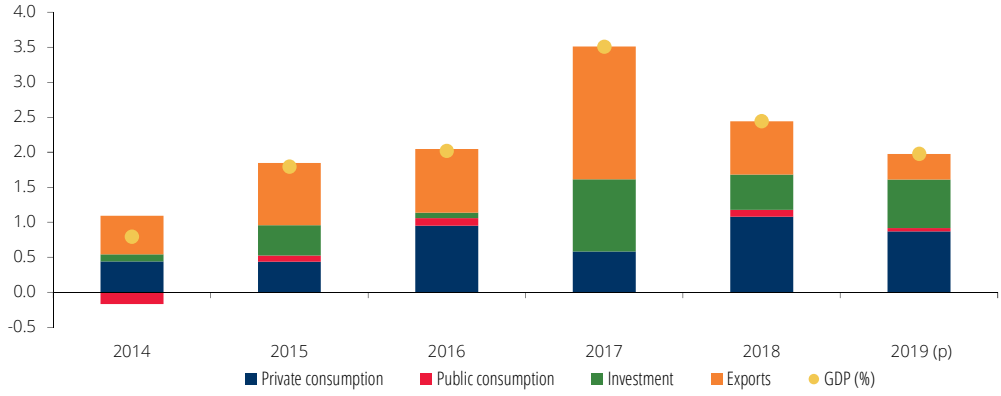
Sources: ECB (Banco de Portugal calculations). | Notes: yoy – year-on-year rate of change, % – in percentage, aav – annual average value. An increase in the exchange rate corresponds to an appreciation of the euro. The technical assumption for bilateral exchange rates assumes that the average levels observed in the two weeks prior to the cut-off date will remain stable over the projection horizon. The technical assumption for oil prices is based on futures markets. Developments in the three-month Euribor rate are based on expectations implied in futures contracts. The implicit interest rate on public debt is computed as the ratio of interest expenditure for the year to the simple average of the stock of debt at the end of the same year and at the end of the preceding year. The implicit rate includes an assumption for the interest rate associated with new issuances.

3. The current projection is based on data available up to 23 September and on the set of technical assumptions consistent with the ECB projection exercise released on 12 September. The cut-off date for the assumptions was 19 August.

Deceleration in private consumption and exports and more buoyant investment

The slowdown of GDP in 2019 reflects a lower contribution of exports net of import content, from 0.8 to 0.4 p.p. The contribution of domestic demand net of the respective import content remains at 1.6 p.p., with an underlying higher contribution of investment and a slightly lower contribution of consumption (Chart 1).

Chart 1 • Net contributions to real GDP growth | In percentage points



Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. The demand aggregates net of imports are obtained by subtracting an estimate of the imports needed to meet each component. The calculation of import content was based on data for 2015. For more information, see the Box entitled "Update of the import content of global demand for the Portuguese economy", in the March 2019 issue of the *Economic Bulletin*.

Private consumption is projected to grow by 2.3% in 2019, i.e. at a more moderate pace of expansion than seen in the previous year and closer to the GDP growth rate. The deceleration in private consumption should reflect developments in current consumption and spending on durable goods. In intra-annual terms, private consumption growth is projected to be relatively close in the first and second halves of the year. This evolution in private consumption is in line with the deceleration in real disposable income, which is related to less buoyant employment (Part I, Chapter 6). By contrast, fiscal variables are likely to contribute to an acceleration of disposable income in 2019, given an expected increase in the public sector's wage bill, a quasi-stabilisation of growth of internal transfers and a slight deceleration in direct taxes paid by households and social contributions as a whole. The household savings rate should remain relatively unchanged at low levels.

Public consumption is projected to grow by 0.5% in 2019 (0.9% in 2018). The deceleration should largely reflect developments in intermediate consumption, particularly the unwinding of the base effect of expenditure resulting from additional spending in the wake of the the 2017 wildfires. Public employment is expected to grow similarly to the previous year.

According to the projection, GFCF should increase by 7.2% in 2019, after a 5.8% rise in 2018. The acceleration in the year as a whole reflects the behaviour of the construction component. This component's buoyancy is influenced by the execution of a number of large-scale infrastructure projects, in some cases associated with public investment and receiving European funding. In addition, residential investment should continue to grow strongly, benefiting from the maintenance of favourable financing conditions, the evolution of household disposable income and demand by non-residents and tourism-related demand. By contrast, investment in machinery, equipment and transport material is

likely to slow down in 2019 – especially in the second half of the year – against an outlook of lower demand growth (particularly external demand) and greater global economic uncertainty.

Goods and services exports are projected to decelerate further in 2019, growing by 2.3% (3.8% in 2018), reflecting weaker growth of external demand for Portuguese goods and services. Portuguese exporters should continue to record external market share gains of a similar size to the previous year's, principally in the tourism and car production sectors, as observed in recent years. Export growth shows a stable intra-annual profile, underpinned by some recovery in energy exports and a slowdown in exports of other goods, in parallel with the maintenance of tourism dynamics.

After increasing by 5.8% in 2018, imports should grow by 4.6% in 2019. The maintenance of robust import growth in the year as a whole, in a context of a slight slowdown in economic activity, results from the contribution of the strong increase in the first half of the year. This was largely associated with high growth of investment in machinery and equipment (Part I, Chapter 6). The slowdown projected for this aggregate and other global demand components with high import content results in more subdued import developments in the second half of the year.

Improvement in labour market conditions

Employment in the Portuguese economy should continue to grow in 2019, albeit at a slower pace (0.9%, against 2.3% in 2018). The unemployment rate is expected to decline by 0.6 p.p. to 6.4%, remaining on the downward trend seen since 2013.

Nominal wages are projected to accelerate amid the reduction in available resources in the labour market. This also reflects the minimum wage increase and the gradual unfreezing of career progressions in general government.

Compared with the June *Economic Bulletin*, employment growth was revised downwards and the unemployment rate was revised slightly upwards.

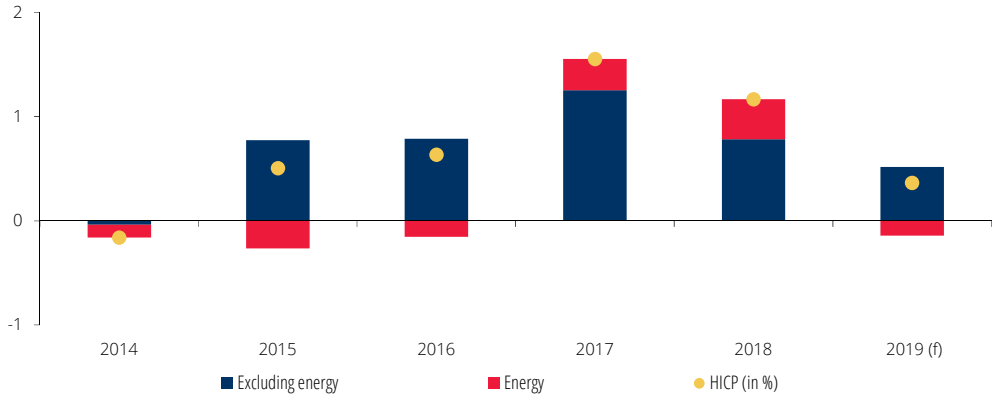
Decrease in inflation

The projection for inflation, as measured by the annual average rate of change in the HICP, stands at 0.4% in 2019, implying a decline from 2018 (1.2%) (Chart 2). The energy component should make a negative contribution to price changes, in line with the evolution observed and assumed for oil prices.[4] The contribution of inflation excluding energy is expected to decline somewhat amid contained external and internal inflationary pressures. The latest ECB projections point to 1.2% inflation in the euro area in 2019 (1.8% in 2018). More moderate developments in tourism-related services prices, after sharp increases in the two previous years, also contribute to the projected reduction of inflation in 2019.

The inflation projection was revised downwards compared to the June *Economic Bulletin*, from 0.9 to 0.4%, chiefly due to the inclusion of the most recent information and to a lesser extent the revision of external assumptions.

4. The decline in the electricity price also influences the prices of the energy component in 2019.

Chart 2 • Harmonised index of consumer prices | Contributions to the annual rate of change, in percentage points



Sources: Banco de Portugal and Eurostat. | Note: (p) – projected.

Reduction of the Portuguese economy's net lending capacity

In 2019 the Portuguese economy's net lending capacity, as measured by the current and capital account balance, is expected to stand at 0.5% of GDP, i.e. below that of the previous year (1.4% of GDP). The reduction of this balance is accounted for by a deterioration in the goods and services account, reflecting a larger goods trade deficit and a narrower services account surplus. As regards the other accounts, the projection points to an improved primary and secondary income account balance and a stable capital account balance. These developments reflect the reduction of investment income payments to non-residents – against a background of maintenance of low interest rates – and the increase in transfers received from the EU.

Current projections for the current and capital account are not comparable with those presented in the June issue of the *Economic Bulletin* due to the revision of the balance of payments statistical series (Part I, Box 5).

Downward risks to economic activity

The projections presented correspond to the most likely scenario, conditional on the set of assumptions of the exercise. Economic activity faces mostly downside risks stemming from external factors. Amid high global uncertainty, the Portuguese economy's external environment may prove to be less favourable in the second half of the year, reflecting a cyclical deceleration of economic activity in the main export markets, the intensification of protectionist trends, a no-deal Brexit or a worsening of geopolitical tensions. The prevalence of these risks adds to the urgency of implementing structural policies that promote an increase in productivity and an intensification of the reduction path of indebtedness of the various economic agents.

III Special issue

Real convergence in the European Union and the relative performance of the Portuguese economy

Box 1 Description of data and sources

Box 2 Regional convergence in Portugal

Real convergence in the European Union and the relative performance of the Portuguese economy

Introduction

Real convergence may be defined as a process of sustained approximation of the poorest countries' income levels towards those of the richest countries. It should be measured over a long time horizon, as this is a process that by nature takes time. Furthermore, concentrating the analysis on short time periods does not allow short-term fluctuations to be overlooked in order to focus on the structural developments in output *per capita*.

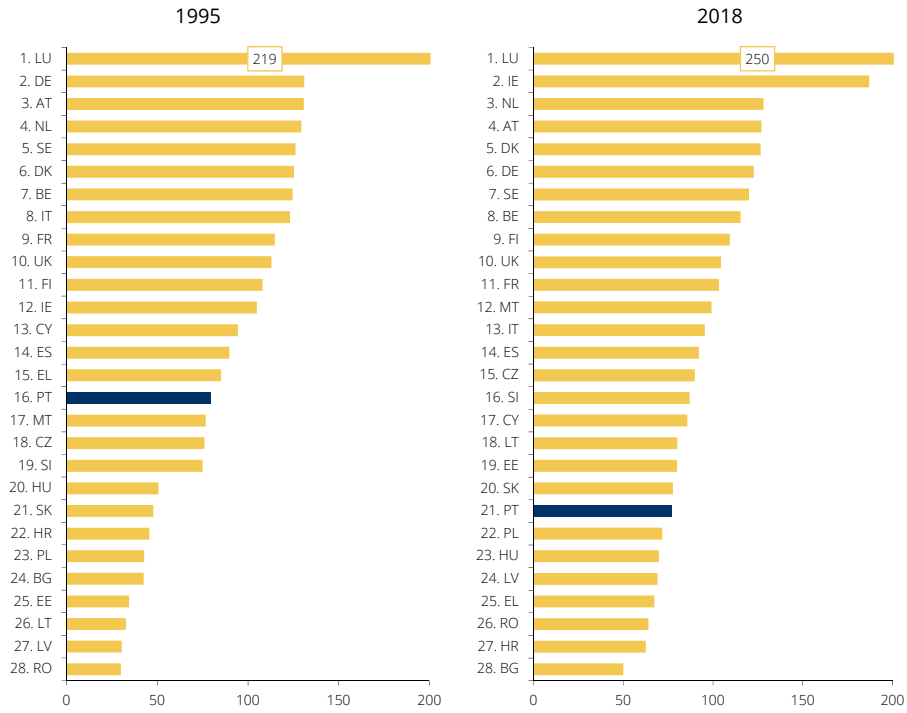
Real convergence is important as it results in welfare gains for the citizens in catching-up countries.[1] In the European Union (EU), convergence of living standards across Member States has a major role, promoting social cohesion and the public's support for the deepening of European integration and monetary union. Since their inception, the EU's cohesion policy and structural funds have been redistributive in nature, helping improve potential growth for less developed regions.

This Special issue aims to analyse the real convergence process within the EU and assess the relative performance of the Portuguese economy over a long time horizon. To this end, a set of stylised facts about Portugal's real convergence in Europe are presented, as a first approach in the identification of the key drivers of this process.[2]

At present substantial differences persist between income *per capita* levels among EU countries. Based on data adjusted for purchasing power parity, Luxembourg and Ireland were the countries with the highest GDP *per capita* in 2018, corresponding to around 250% and 187% respectively of the EU average (Chart 1).[3] Nine additional EU countries were above the European average for this indicator in 2018. In contrast, 17 countries had a GDP *per capita* below that of the EU. Portugal belongs to this group, with an income level equating to 77% of the EU average.

1. The living standards of a country's population cannot be assessed in terms of income *per capita* alone. Other important aspects include access to education and healthcare, security or the distribution of resources across the population. However, GDP *per capita* at purchasing power parity is a good first approximation, with the advantage of being easier to measure and compare internationally.
2. National accounts series (in particular GDP) of the various EU countries are being revised and should be released throughout 2019 under the regular procedure for updating sources and methodologies, typically associated with a new base year. In the Portuguese case, the series with 2016 as the reference year were published after the cut-off date of this Special issue. The results presented are based on data from AMECO available at the end of July.
3. These figures are largely associated with specific characteristics of these economies. Luxembourg's *per capita* GDP levels are distorted by the high number of commuters living outside Luxembourg and by the high share of the financial sector in the economy. In the case of Ireland, output levels are affected by the presence of multinational companies. The jump in Ireland's ranking between 1995 and 2018 is also explained by revisions in the GDP calculation (in 2015) that do not reflect the actual growth of the country's economic activity. In both cases and in contrast to other EU economies, *per capita* GDP levels (and the respective growth rates) are much higher than *per capita* Gross National Income (which takes into account net income paid to non-residents). In this context, these two countries were excluded from the analysis of real convergence in the EU. Nevertheless, the main results are robust to the inclusion of these economies.

Chart 1 • Comparison of GDP *per capita* in EU countries in 1995 and 2018 | As a percentage of EU GDP *per capita*



Source: AMECO. | Notes: GDP *per capita* in Purchasing Power Standards (PPS). The key to the countries' abbreviations is as follows: Austria (AT), Belgium (BE), Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (EL), Netherlands (NL), Hungary (HU), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Poland (PL), Portugal (PT), Romania (RO), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SE), United Kingdom (UK).

Comparing 1995 to 2018 shows that income developments *vis-à-vis* the EU average have differed across economies (Chart 1). In the case of the Portuguese economy, its relative position fell from 16th to 21st place between 1995 and 2018. Portugal's GDP *per capita* as a percentage of the EU average also fell over this period. The relative position of certain other economies has changed as substantially, or more. Greece in particular fell sharply in the ranking (from 15th in 1995 to 25th in 2018). Meanwhile, the new EU countries generally improved their positions, in some instances quite significantly (such as Lithuania, Estonia and Malta).

This Special issue focuses on real convergence so other dimensions of convergence will not be addressed. There are other convergence concepts, such as nominal and cyclical convergence. In the case of the former, convergence can be understood as the harmonisation of nominal indicators. In the EU, and in particular the euro area, nominal convergence is linked to the Maastricht criteria, which include budgetary criteria, but also compliance of certain nominal variables, such as the inflation rate, nominal interest rates and exchange rate stability, by countries wishing to adopt the euro.[4] In the case of the latter, convergence occurs when the economies are simultaneously at the same phase of the business cycle and move in tandem.[5] Cyclical convergence is particularly important for the smooth functioning of a monetary union.

4. For a discussion on the interaction between real and nominal convergence, and an assessment of the nominal convergence process in the euro area, see Diaz del Hoyo et al. (2017), European Commission (2017) and Franks et al. (2018).
5. Franks et al. (2018) show that since the start of the monetary union, the business cycles of the euro area countries became more synchronised but that the cycles' amplitude diverged. The synchronisation of Portugal's cycles with those of the euro area over the last decade was analysed in the Box "Cyclical synchronisation between Portugal and the euro area over the last decade", *Economic Bulletin*, May 2018.

The Special issue is organised as follows. The first part presents the measures suggested in the literature to empirically assess real convergence. The second part explores the evidence regarding real convergence in the EU. The third part focuses on Portugal's convergence process, using growth breakdowns to identify the main factors behind the observed developments. Lastly, some final considerations are presented. The Special issue has two boxes: "Description of data and sources" and "Regional convergence in Portugal".

Real convergence measures

In the empirical literature, the analysis of the convergence process in a group of countries favours sigma convergence and beta convergence measures. These indicators find theoretical support in neoclassical growth models, which postulate that economies tend to converge to their long-run equilibrium, with the growth pace determined by the country's distance from its stationary equilibrium.[6] It should be noted that these models are based on a very simplified version of the economy and therefore have certain limitations.[7]

Sigma convergence

Sigma convergence is the reduction in dispersion of income *per capita* levels across the countries under analysis. It is an aggregate measure based on the assumption that economies converge towards a common equilibrium over the long run. By assessing the dispersion at each moment in time, sigma convergence allows trend changes in the real convergence process to be detected.

This measure is calculated by taking the mean absolute deviation between the GDP *per capita* for each country and that of the EU average.[8] There are alternative dispersion measures (such as standard deviation and the coefficient of variation). However, the measure chosen is easy to interpret and less sensitive to extreme values. The indicator's decline over time signals the narrowing of differences between income levels across EU countries, showing sigma convergence.

Beta convergence

Beta convergence (absolute or conditional) refers to a process in which lower-income economies grow faster, on average, than higher-income economies, implying a catching up phenomenon. Empirically, considering a sufficiently long period, this relationship leads to a negative expected correlation between the initial GDP *per capita* of the countries under review and the average growth rates.

Absolute beta convergence assumes that countries are relatively homogeneous in terms of their structural characteristics – for instance, production technology, saving rate or population growth[9]

6. For an in-depth discussion of the relationship between the neoclassical growth models and the concept of real convergence, see, for example, Barro and Sala-i-Martin (2004) and Acemoglu (2009).
7. In particular, the neoclassical model assumes that technological progress – the driver of sustainable economic growth over the long run – is an exogenous variable. There are more complex models that treat the technological process as an endogenous variable, exploring the fundamental causes for differences in growth rates. For more details, see Barro and Sala-i-Martin (2004) and Acemoglu (2009).
8. Specifically, sigma convergence is calculated as $(1/n)\sum_{i=1}^{n}|GDPpc_i/GDPpc_{EU}-1|\times 100$, where n is the number of countries.
9. According to the neoclassical growth model, these are the structural factors that affect the long-term equilibrium of an economy (Solow, 1956).

– and therefore tend to converge towards a common income *per capita* level in equilibrium. In this case, real convergence may be assessed by estimation of the following equation for a group of countries:

$$g_i = \alpha + \beta \ln(y_{i,t_0}) + \varepsilon_i \qquad \text{(Equation 1)}$$

where $g_i = \frac{1}{T-t_1+1}\left[\ln(y_{i,T}) - \ln(y_{i,t_1})\right]$ is the country's average annual growth rate i over the period from t_1 to T, approximated by the difference of logs, and y_{i,t_0} is the GDP *per capita* of country i in the initial period t_0.

A negative and statistically significant estimated beta coefficient denotes absolute convergence, i.e. the countries with lower initial income grow faster. This coefficient can be interpreted as a proxy of the speed of convergence, measuring the response of the growth rate to differences in initial income.[10] The speed of convergence determines the pace at which the economy converges on average towards the long-run equilibrium, indicating the percentage of the gap between the initial income *per capita* and the long-run equilibrium that is eliminated each year (Sala-i-Martin, 1996).The number of years required to halve the original gap may be obtained from the speed of convergence.[11]

The assumption that the differences in growth rates depend only on the initial income *per capita* is too restrictive. The economies may differ significantly in the structural factors which affect the long-run equilibrium income. Conditional beta convergence broadens the analysis to a wider set of variables beyond the initial income *per capita*, offering a more complete assessment of the convergence process. In this case, countries do not necessarily converge to the same long-run GDP *per capita* level. Thus, a country's growth rate depends on its distance from its own long-run equilibrium, with a richer country able to have higher growth rates than a lower income country if it is more distant from its long-run equilibrium.[12]

To assess the existence of conditional convergence in a group of economies, Equation 1 is augmented by the variables that could affect the long-run equilibrium. Specifically:

$$g_i = \alpha + \beta \ln(y_{i,t_0}) + \gamma X_i + \varepsilon_i \qquad \text{(Equation 2)}$$

where X_i is the vector of control variables and γ the vector of coefficients. The variables suggested by the literature include human capital (Mankiw et al., 1992) and environmental variables such as the degree of openness and the quality of the institutions (Barro and Sala-i-Martin, 2004). There is evidence of conditional convergence when a partial negative correlation is found between the pace of growth and the initial income level (the estimated beta coefficient must be negative and statistically significant).

10. The beta estimate obtained through the method of ordinary least squares ($\hat{\beta}$) is a proxy of the speed of convergence because it is inversely related to the number of years considered in the analysis (T). Intuitively, the speed of convergence should decline over time, as higher income economies tend to grow at a slower pace. When a long time frame is considered, periods with different speeds of convergence are combined. Therefore, the calculation of the speed of convergence requires that $\hat{\beta}$ is corrected in accordance with the time series size. For this, the expression $\hat{\beta} = -(1 - e^{-\tilde{\beta}T})/T$, is used, where $\tilde{\beta}$ is the speed of convergence. For further details about this transformation, see Sala-i-Martin (1996).

11. The number of years (n) required to halve the gap between the initial income and the equilibrium satisfies the condition $e^{-\tilde{\beta}n} = \frac{1}{2}$, where $\tilde{\beta}$ is the speed of convergence calculated in accordance with Note 10.

12. Evidence indicates no absolute convergence in a large sample of countries from around the world in the post-World War II period (Barro and Sala-i-Martin, 2004 and Acemoglu, 2009). However, it tends to be visible in a sample of OECD economies. The difference between the first sample and the second is the relative homogeneity of the OECD countries in terms of structural characteristics that affect long-term equilibrium income such as production technology, savings rate, population growth, labour force skills, institutions and economic policies. This suggests that conditional convergence may be achieved worldwide when controlling for certain characteristics of the countries liable to influence their long-run income level.

The concepts of beta and sigma convergence are related. Intuitively, in the presence of catching up, the dispersion of income *per capita* between the economies is expected to decline. However, this might not happen as these measures have different time horizons. It is therefore possible for the long-run trajectory to show absolute beta convergence even though sigma convergence is not observed at certain points in time.[13]

Empirical evidence of real convergence in the EU

This part of the Special issue analyses the real convergence patterns in the EU, using the sigma and beta convergence measures presented above. The analysis covers a long time period: from 1960 to 2018 for 15 EU countries (EU15) and from 1995 to 2018 for 28 EU countries (EU28).[14] Two decades may be considered a sufficient time period to assess real convergence. However, the significant, lasting and differentiated impact of the international financial crisis and the euro area sovereign debt crisis on Member States' income levels complicates this assessment. Convergence measures were computed using GDP *per capita* data at current prices in PPS available in AMECO, the European Commission's database (Box 1).

Sigma convergence

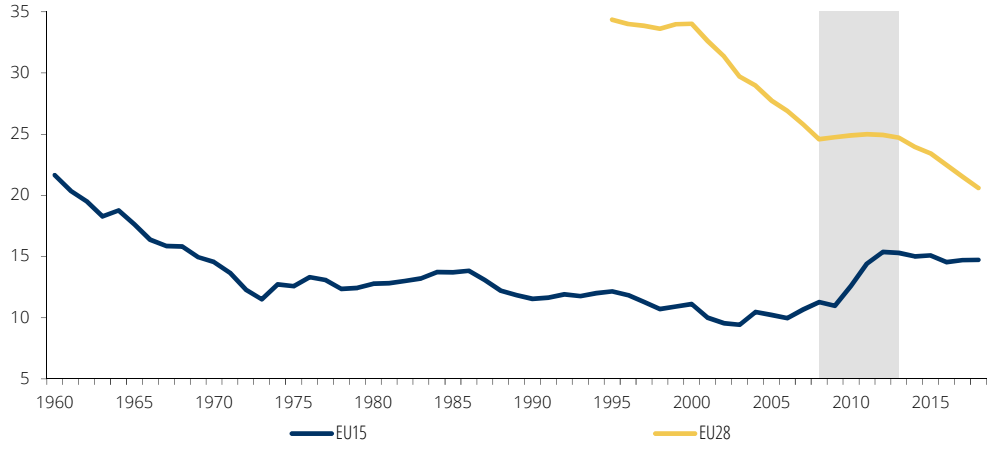
The mean absolute deviation between income *per capita* levels in the EU15 fell relatively continuously between 1960 and the start of the international financial crisis, showing sigma convergence (Chart 2). This changed over the period from 2008 to 2013, revealing some divergence among countries. In the later years, the indicator remained at levels above those observed before the crisis, signalling a greater dispersion between income *per capita* levels of the EU15 Member States. Developments in sigma convergence in the EU15 throughout the period are strongly influenced by the behaviour of the southern European countries (Portugal, Greece, Italy and Spain).

In terms of the EU28 countries, the dispersion of GDP *per capita* levels declined continuously since 2000 (Chart 2). The sigma convergence indicator signals that this reduction was more marked in the EU28 than in the EU15 in the period before the crisis. During the crisis and more recently, the dispersion continued to decline, in contrast to that observed for the EU15. The difference is explained by the behaviour of the Member States joining the EU after 2004. The gap between the income *per capita* levels of the eastern countries, particularly the Baltic states, versus the EU28 average fell throughout the period (Chart 3). These countries, with relatively low GDP *per capita* levels, generally maintained high growth rates over this period, above those of most of the other EU28 countries.

13. For a derivation of the relationship between sigma and beta convergence, see European Commission (2019).

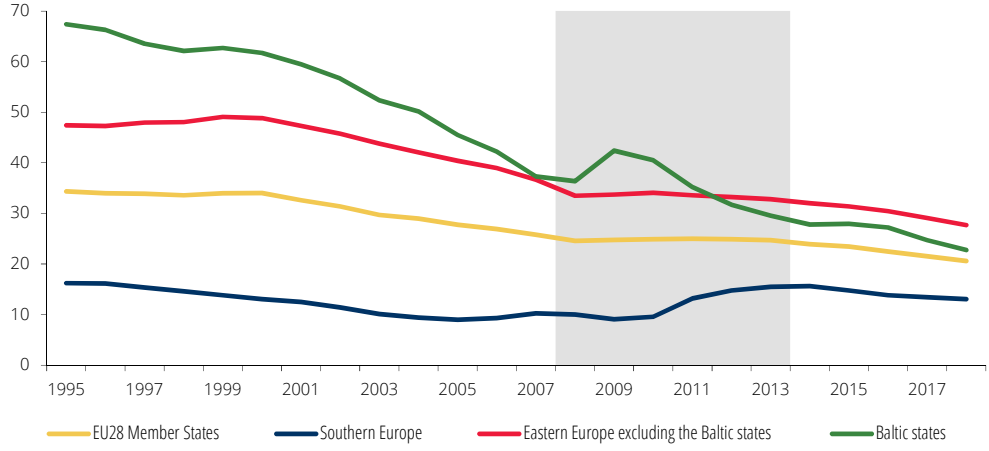
14. EU15 comprises the 15 Member States that joined the EU up to 1995. EU28 corresponds to the current group of countries. The 13 new Member States are (accession year in parenthesis): Cyprus (2004), Czech Republic (2004), Estonia (2004), Hungary (2004), Latvia (2004), Lithuania (2004) , Malta (2004), Poland (2004), Slovakia (2004), Slovenia (2004), Bulgaria (2007), Romania (2007) and Croatia (2013). The lack of data for 1960-1994 for some EU28 countries meant that two groups of countries were considered throughout the analysis. For the same reason, the group of southern European countries differs according to whether the analysis is based on the longer or shorter period (the four-country or six-country group respectively). Ireland and Luxembourg were excluded from the EU aggregates (see Note 3).

Chart 2 • Sigma convergence in the European Union | Mean absolute deviation



Sources: AMECO and Banco de Portugal calculations. | Notes: Luxembourg and Ireland were excluded from the analysis. The shaded area represents the period of the financial crisis and the euro area sovereign debt crisis.

Chart 3 • Sigma convergence in the European Union for different groups of countries | Mean absolute deviation relative to the EU28 GDP *per capita*



Sources: AMECO and Banco de Portugal calculations. | Notes: Luxembourg and Ireland were excluded from the analysis. The shaded area represents the period of the financial crisis and the euro area sovereign debt crisis. The southern Europe aggregate comprises Cyprus, Spain, Greece, Italy, Malta and Portugal. The eastern Europe aggregate excluding the Baltic states includes Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia. The Baltic states include Estonia, Latvia and Lithuania.

Absolute beta convergence

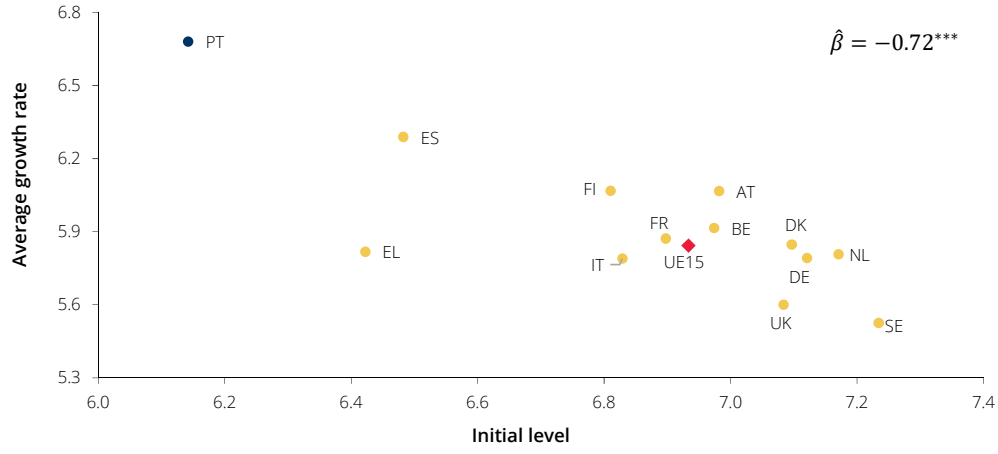
According to absolute beta convergence, countries with lower initial income *per capita* levels should grow at higher rates than those with a higher initial income. This relationship may be easily verified from a chart, but a more rigorous exercise requires estimation of Equation 1 in order to measure the statistical significance of the beta coefficient.

In the EU15, a fairly clear inverse relationship is visible for the 1960-2018 period between the initial level and the average growth of GDP *per capita*, confirming the existence of absolute beta convergence (Chart 4).[15] As the lowest income country in this group at the start of the

15. As was mentioned above, Ireland and Luxembourg were excluded from the analysis. The results do not change qualitatively with the inclusion of these countries. Furthermore, the results obtained for beta convergence do not change if the GDP *per capita* growth rate assessed at constant prices is used instead of the GDP *per capita* growth rate expressed in PPS.

period, Portugal presented the highest average growth. Like Spain and in contrast with Greece, the Portuguese economy performed better than suggested by the estimated relationship. The estimated speed of convergence is fairly slow, indicating that, on average, for the set of countries considered, the gap between the initial income *per capita* and its long-run equilibrium fell by around 1% per year, with over 70 years needed to halve this difference.[16] This speed of convergence is consistent with the values reported in the empirical literature, which indicate that the time needed for substantial convergence to be observed typically involves several generations (Barro and Sala-i-Martin, 2004).

Chart 4 • Beta convergence in the EU15 over the 1960-2018 period | GDP *per capita* at current prices in PPS

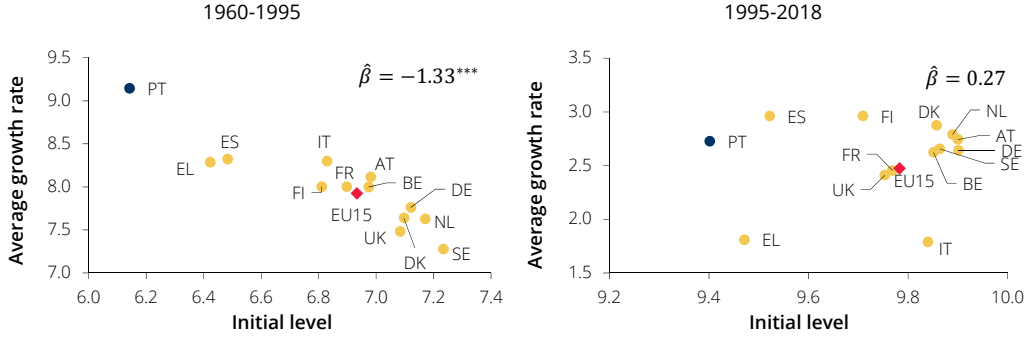


Sources: AMECO and Banco de Portugal calculations. | Notes: $\hat{\beta}$ denotes the estimated beta coefficient with heteroskedasticity-robust errors. *, ** and *** denote significance level at 10%, 5% and 1% respectively. GDP *per capita* series in PPS incorporate price changes that are common to all countries as they reflect the average price change in the EU of the basket used in the PPP calculation.

Considering a partition of the period in 1995[17], it appears that the result of beta convergence found for the entire period derived largely from the first 35 years (Chart 5). The beta coefficient estimated for the 1960-1995 period suggests a higher rate of convergence than that found for the period as a whole.[18] In contrast, over the last 25 years a relationship between countries' growth and their initial income level is not visible. In particular, the results point to the lack of catching up by the lower-income countries, given that the estimated beta coefficient is not significant and has the opposite sign to that expected.

16. The speed of convergence ($\tilde{\beta} = 0{,}0094$) was calculated using the equation in Note 10, with $\hat{\beta} = -0{,}72/100$ e $T = 59$. The number of years needed to halve the gap between the initial income and equilibrium income is given by $n = \ln(2)/0{,}0094 = 74$ (see Note 11).
17. This partition allows the analysis of the most recent period for the EU15 to coincide with the period covered in the analysis for the EU28. The main results of the analysis remain unchanged under alternative partitions in the 1990s.
18. The estimated beta suggests that the gap between the initial GDP *per capita* and its long-run level narrows at a rate of 1.8% per year, such that around 40 years would be needed to close half of the original gap. For more details, see Notes 10 and 11.

Chart 5 • Beta convergence in the EU15 in two sub-periods | GDP *per capita* at current prices in PPS



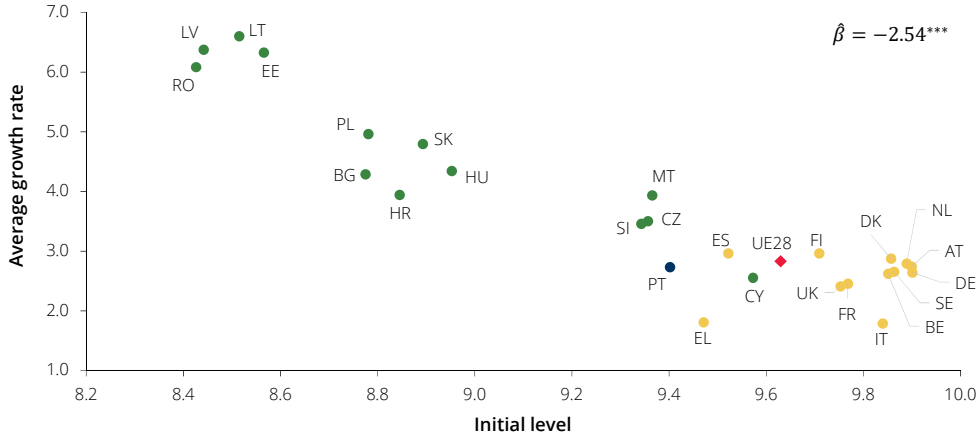
Sources: AMECO and Banco de Portugal calculations. | Notes: $\hat{\beta}$ denotes the estimated beta coefficient with heteroskedasticity-robust errors. *, ** and *** denote significance level at 10%, 5% and 1% respectively. GDP *per capita* series in PPS incorporate price changes that are common to all countries as they reflect the average price change in the EU of the basket used in the PPP calculation.

The performance of output over the 1995-2018 period is strongly influenced by the global financial crisis and the sovereign debt crisis, the impact of which differed considerably between countries. Catching-up countries were the most affected and their lower relative growth is reflected in the lack of convergence at EU15 level over this period. This result may also reflect a greater difficulty in sustaining high economic growth from a certain income level. In particular, the literature suggests that in the most advanced economies, growth is more associated with productivity developments (instead of the accumulation of factors), and, as such, could depend predominantly on aspects such as the level of human capital, the quality of the institutions and the implementation of measures promoting the smooth functioning of the markets. This point will be returned to in the conditional beta convergence analysis.

In the EU28, the evidence indicates that absolute beta convergence was observed over the 1995-2018 period, at a relatively fast rate (Chart 6).[19] The greater speed of convergence for this wider group of countries is likely to reflect greater heterogeneity in the initial positions. The contrast with the results obtained for the EU15 for the same time horizon is explained by the behaviour of the Member States which joined the EU later. It should be noted that EU membership itself is a catalyst for growth for several years through the implementation of reforms in line with European legislation, market enlargement and access to structural funds.

19. In this case, the estimated beta suggests a reduction of the gap at around 3.9% per year, with 18 years needed to halve the initial gap between GDP *per capita* and its long-run equilibrium. For more details, see Notes 10 and 11.

Chart 6 • Beta convergence in the EU28 over the 1960-2018 period | GDP *per capita* at current prices in PPS



Sources: AMECO and Banco de Portugal calculations. | Notes: $\hat{\beta}$ denotes the estimated beta coefficient with heteroskedasticity-robust errors. *, ** and *** denote significance level at 10%, 5% and 1% respectively. GDP *per capita* series in PPS incorporate price changes that are common to all countries as they reflect the average price change in the EU of the basket used in the PPP calculation.

Conditional beta convergence

Aside from the initial income level, the analysis of conditional beta convergence considers other factors that may affect long-run equilibrium in each economy, thereby influencing its growth rate.

Empirically, the usual regressions were estimated (Equation 2) considering a set of additional variables.[20] These indicators are chosen on theoretical grounds relating to the factors that influence the components of the production function. Of the variables tested, the quality of human capital (based on the level of and returns to education) and the indicator relating to the quality of institutions were selected (see Box 1 for a description of these variables).[21]

The impact of the differences in the explanatory variables is given by their effect on the long-run equilibrium level. Thus, a higher human capital level, resulting in greater efficiency of the labour factor, should lead to a higher income *per capita* level in the equilibrium (a positive coefficient is expected). The same effect is expected in the case of the quality of the institutions, as it results in incentives to innovation and investment, for example through the reduction of bureaucracy or corruption levels (positive expected coefficient).

Given the evidence of absolute convergence in the EU28 over the 1995-2018 period, conditional convergence is expected to be observable over the same period (Table 1). In fact, the estimated beta coefficient remains negative and statistically significant in the various estimated regressions.

20. The regressions were estimated using the ordinary least squares method, with heteroskedasticity-robust errors. This simple approach is subject to criticism, discussed in depth in Mills and Patterson (2009). In particular there is the possibility of the regression errors being correlated with the explanatory variables, which leads to inconsistent estimates. This problem can occur as a result of the presence of unobserved country-specific effects in the initial GDP *per capita*, of endogeneity in certain variables or of measurement error. In parallel, the lack of consensus in the literature about the choice of control variables (and the associated absence of robustness in the results) weakens this approach. Lastly, the low number of observations complicates the simultaneous consideration of a wide set of explanatory variables.

21. There is plenty of empirical literature about the possible drivers of economic growth. Aside from the variables mentioned, the following were also tested: investment as a ratio of GDP, average population growth, exports as a ratio of GDP, the degree of openness, the initial capital stock level and the degree of rigidity in the labour and product markets ("OECD Indicators of Product Market Regulation and Employment Protection Legislation"). However the coefficients estimated were found to be statistically insignificant.

At the same time, the estimated coefficients for the control variables have the expected sign. Against the result obtained for absolute beta convergence, the estimated beta is more negative when controlling for human capital and quality of institutions. The quality measure of the regression's adjustment improves when these two variables are added simultaneously.

Analysis of conditional beta convergence is more interesting for the group of EU15 countries, as evidence of absolute convergence was not found in the most recent period (1995-2018). The results point to an estimated beta that is negative and statistically different from zero only when the variable relating to quality of institutions is considered (Table 1). However, these results (both estimation and inference) are fragile due to the small number of observations in this sample.

The results confirm that the quality of institutions and investment in human capital are important for raising an economy's growth rate. Various authors claim that the approaches emphasising institutional differences are the most promising for understanding countries' different experiences of economic growth (Acemoglu, 2009, and Diaz del Hoyo et al., 2017, for an application to the EU). These institutional differences involve differences in the legal and regulatory framework that affect the behaviour and incentives of the economic agents in regard to saving, investment in fixed and human capital, innovation and international trade.

Table 1 • Estimation results of conditional beta convergence for the EU28 and the EU15 over the 1995-2018 period

	Estimated coefficients for EU28				Estimated coefficients for EU15	
	Beta convergence				Beta convergence	
	Absolute	Condicional			Absolute	Condicional
Initial level of GDP *per capita*	-2.54***	-2.64***	-3.62***	-3.57***	0.27	-0.9**
Human capital		0.83***		0.59***		
Institutional quality			0.98***	0.87***		0.82***
Adjusted R^2	0.84	0.86	0.90	0.91	-0.08	0.64
Number of observations	26				13	

Notes: Coefficients estimated with heteroskedasticity- robust standard errors. *, ** and *** denote significance level at 10%, 5% and 1% respectively.

Most of the empirical literature on the convergence process in Europe focuses on the euro area countries (for example European Commission, 2019, Franks et al., 2018 and Diaz del Hoyo et al., 2017).[22] The results are broadly in line with those presented in this Special issue, suggesting that the convergence process between countries joining the EU before 2004 has stagnated (or even receded) over the last decades, but that for the current group of EU countries, the trend is one of catching up, reflecting the behaviour of the new Member States.

The different growth experiences of the EU countries over the period analysed prove that the convergence process is not automatic, highlighting the need for an in-depth analysis of each economy's performance.

22. The conditional beta convergence analysis presented in this Special issue uses estimated regressions for a broad sample of countries. Analysis using panel data regressions has gained prominence in the empirical literature, exploring the time component of the data series. European Commission (2019) presents this kind of analysis for the EU28 countries and for the euro area (considering both the current 19 countries (EA19) and the 11 initial countries excluding Luxembourg and including Greece (EA11)). The estimated beta coefficient obtained is negative and significant in all cases, suggesting the existence of conditional convergence. However, the evidence for EA11, in particular over the 1999-2014 period, is weak.

Evidence regarding the Portuguese economy's convergence process

The analysis in this part focuses on the Portuguese economy and aims to outline some of the main features of Portugal's convergence process *vis-à-vis* the EU. It makes use of two different approaches to break down GDP *per capita* growth. The first is based on a growth accounting exercise and aims to assess the contribution made to the convergence process by the accumulation of the factors of production and production efficiency. The second considers the split into employment and labour productivity, exploring the sectoral dimension. Box 2 examines the regional dimension, assessing the extent to which the country's convergence process with the EU was accompanied by a decline in the disparities between its regions. The focus on developments over time justifies the choice of data in real terms in this part (see Box 1 for a discussion of the differences between data in volume and in PPS).[23]

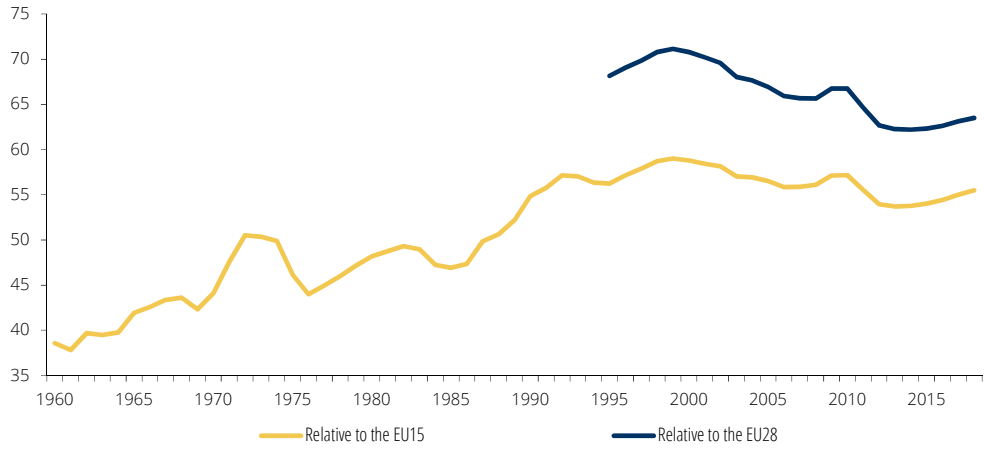
A long view of the Portuguese economy's convergence process

Between 1960 and the mid-1990s[24], Portugal's GDP *per capita* as a percentage of the EU15 trended upwards, resulting in a long period of real convergence (Chart 7). Over this period, the convergence pace was particularly high between 1960 and 1972 and between 1986 and 1992, two periods marked by the increase in the openness of the economy and by important structural and institutional transformations in Portugal.

In contrast, the period from the mid-1990s to the present is largely characterised by a stagnation of the Portuguese economy's convergence process. This period is marked by the sovereign debt crisis in the euro area, which resulted in a particularly severe and prolonged recession in the Portuguese economy, against a background of a need to reduce accumulated imbalances. Nevertheless, Portugal's relative performance against the EU in the most recent decades indicates the persistence of structural fragilities in the Portuguese economy. Developments of more recent years indicate some recovery, however relative GDP *per capita* in 2018 still stood below the level of 1995.[25, 26]

23. Comparing the GDP *per capita* series for the Portuguese economy as a percentage of GDP *per capita* for the EU15 (and for the EU28) at constant prices in euro and at current prices measured in PPS, there is a difference in the series' levels (the level is higher in the PPS series, reflecting the adjustment for purchasing power), but their developments are relatively similar.
24. In this analysis it was decided to partition the period under review in 1995, as in the EU convergence assessment. Alternative partitions in the 1990s, when a change in the Portuguese economy's convergence process may be located, do not have an impact on the results of the analysis.
25. In the assessment of the Portuguese economy's convergence process, a comparison with the EU average was the selected option. An alternative could be to take the group of five EU countries with the highest income *per capita* levels as the reference (on average, over the 1960-2018 period, Austria, Denmark, Germany, Netherlands and Sweden). Developments of Portugal's GDP *per capita vis-à-vis* this group of countries is very similar to that shown in Chart 7.
26. The analysis of the Portuguese economy convergence considers the national accounts series based on the 2011 benchmark year. The main results still hold if Portugal's GDP based on the new 2016 benchmark year is used. In particular, in both cases, the level of Portuguese GDP *per capita* as a percentage of the EU15 average in 2018 is lower than in 1995.

Chart 7 • GDP *per capita* in Portugal, in real terms | As a percentage of EU GDP *per capita*



Source: AMECO.

Breakdown based on growth accounting

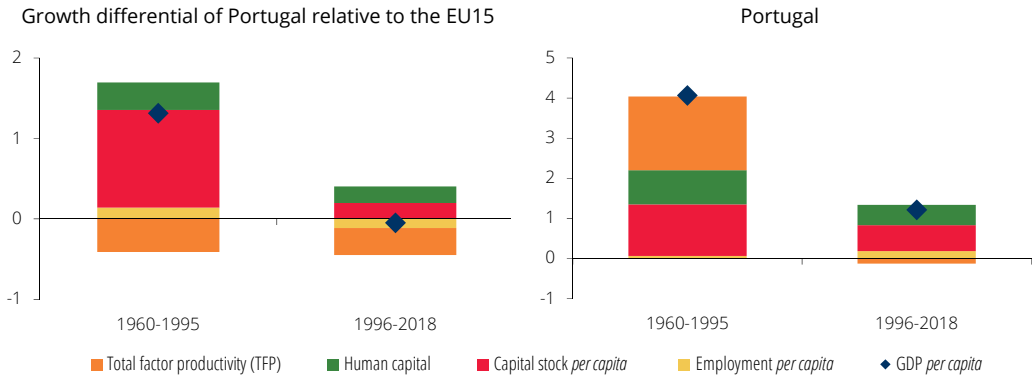
The growth accounting approach allows GDP *per capita* to be broken down into the factors of production (labour and capital stock) and total factor productivity (TFP).[27] Human capital, often interpreted as the quality of the labour factor, was considered alongside the quantity of the labour factor. In this exercise, TFP is calculated as a residual, and as such has a wide meaning. TFP growth may reflect the development or incorporation of new production technologies, institutional improvements or a more efficient allocation of resources. The analysis that follows compares the results of this exercise for Portugal with those obtained for the EU15 in the two large periods defined above. This analysis is essentially descriptive and is subject to the degree of uncertainty inherent to the measurement of the utilization and quality of the factors of production. Nevertheless, it provides a conceptual framework that allows the identification of the main contributions to growth of relative output *per capita*.

The convergence process towards the EU15 observed over the 1960-1995 period was largely the result of a higher accumulation of fixed capital in Portugal (Chart 8). It should be noted that the Portuguese economy started from a very low base compared to the other EU countries.[28] In this period, the contribution of TFP to Portugal's GDP *per capita* growth was positive and significant, however its performance was below that found in the EU15 (Chart 8). In turn, the stagnation of the convergence process in the following period (1996-2018) was linked to the sustained unfavourable relative performance of TFP, in a context in which the contribution made by the labour factor turned negative – in particular during the crisis period – and the positive contribution made by the capital stock fell sharply.

27. This exercise is based on a Cobb-Douglas production function: $\text{GDP} = TFP \cdot (hL)^{\alpha} K^{1-\alpha}$, in which TFP represents total factor productivity, L is the quantity of the labour factor, h is the human capital level and K is the capital stock, with α representing the elasticity of GDP in relation to the labour factor. To calculate TFP as a Solow residual, alpha was assumed to be constant and the same for all countries, at 0.63 (AMECO). For a detailed description, see Special issue "Demographic transition and growth in the Portuguese economy", *Economic Bulletin*, October 2015.

28. The capital stock levels per worker in Portugal remain low compared to the other EU countries. For more details see the Box "Capital stock in the Portuguese economy", *Economic Bulletin*, May 2018.

Chart 8 • Breakdown of GDP *per capita* developments based on growth accounting
| In percentage points (period average)



Sources: AMECO, Penn World Tables (Feenstra, Inklaar and Timmer, 2015) and Banco de Portugal calculations.

Two features are common to the two periods analysed. On one hand, human capital's sustained positive contribution to the convergence process of the Portuguese economy, reflecting the improvement of the qualification levels of Portugal's labour force, despite remaining below the European average.[29] On the other hand, the weak relative performance of TFP in Portugal, which is related to the fragilities of the institutional framework and market functioning. Factors behind the weak developments of TFP in Portugal include the inefficiency of the legal system, the small size of companies, the poor quality of corporate management, low investment in innovation, the prevalence of segmentation in the labour market and the existence of uncompetitive product markets with barriers to entry (*Annual Report of Banco de Portugal* 2014). There is evidence of a deceleration in productivity over the 1996-2018 period, both for the Portuguese economy and for most advanced economies.[30]

Performance of labour productivity *vis-à-vis* the EU at sectoral level

A natural question arising in the analysis of the Portuguese economy's convergence process is whether the trend at aggregate level hides significant variations between sectors or whether it is replicated across most sectors. To explore this further, GDP *per capita* growth is broken down into the contributions made by employment (*per capita*) and labour factor productivity. The breakdown by sector of activity is used to assess to what extent the relative performance of aggregate productivity can be explained by differences in productivity growth in each sector (the intra-sectoral component) or by changes in the allocation of resources between sectors (inter-sectoral component).[31]

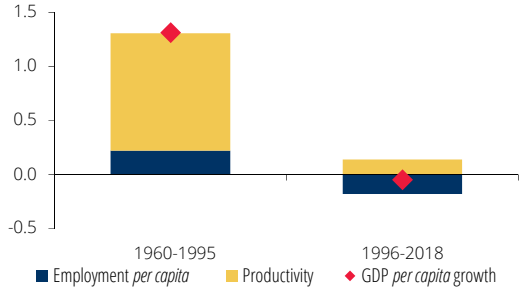
29. The gap to the levels of the other European countries is still significant, despite the positive trend of increasing education levels among workers in Portugal, especially among the younger age groups. For more information, see the Box "Evolution of labour force qualifications in Portugal", *Economic Bulletin*, May 2018.
30. Many explanations have been put forward for this worldwide deceleration in productivity, including the slowdown in innovation and technology diffusion, the increase in productive inefficiency, a worsening of input allocation, the possibility of measurement errors (above all in the digital economy), the progressive ageing of the labour force, the slower accumulation of human capital and the slower growth of international trade. For a set of references, see Special issue "Reallocation of resources and total factor productivity in Portugal", *Economic Bulletin*, October 2018.
31. Specifically, the calculation of the intra-sectoral component assumes that employment remains constant between periods, such that only the change in productivity is assessed. In turn, the calculation of the inter-sectoral component assumes that productivity does not change, isolating changes in employment. For a detailed description of the methodology used to calculate the sectoral contributions, see the Box "The evolution of GVA, employment and productivity in the ongoing recovery: sectoral contributions", *Economic Bulletin*, October 2017. This methodology is sensitive to the level of the data disaggregation. The analysis presented is based on the greater breakdown of sectoral data available from Eurostat for data comparable by country. The robustness of the results was tested against an analysis with more aggregated data. Furthermore, there are alternative breakdowns discussed in the literature which may lead to different results.

Portugal's convergence towards the EU15 in the first sub-period (1960-1995) benefited from a significant contribution of labour productivity (measured by the ratio between GDP and employment) (Chart 9). However, this contribution fell substantially over the 1996-2018 period. The relative stagnation of the convergence process (as shown by the near-zero differential growth of GDP *per capita*) in this second period reflected low and offsetting contributions from employment and productivity.

Based on the sectoral data for GVA per employee, only available for the 1995-2018 period, the slight aggregate productivity gains *vis-à-vis* the EU15 arise essentially from the inter-sectoral contribution (Chart 10).[32] This result suggests that employment flows to more productive sectors were more significant in Portugal than on average in the EU. Despite the virtual stabilisation of total employment in Portugal between 1996 and 2018, employment increased in services and declined in manufacturing, construction and agriculture. Productivity in services and in manufacturing stands above the economy average, but is below average in construction and agriculture.

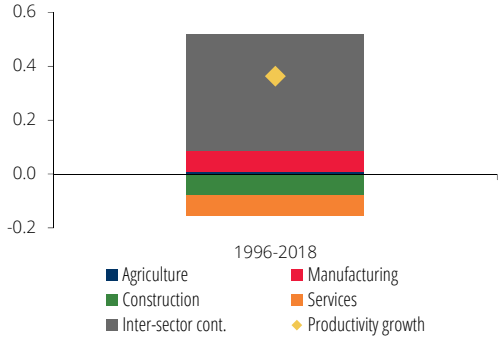
Over the 1996-2018 period, the intra-sectoral contribution to the convergence of aggregate productivity was approximately nil, reflecting low gains *vis-à-vis* the EU in manufacturing and reductions in services and construction (Chart 10).

Chart 9 • Breakdown of GDP *per capita* growth in Portugal *vis-à-vis* the EU15, into the contributions of productivity and employment | In percentage points (period average)



Sources: AMECO and Banco de Portugal calculations. | Note: GDP *per capita* = GDP/Employment x Employment/Population.

Chart 10 • Breakdown of productivity growth in Portugal *vis-à-vis* the EU15 | In percentage points (period average)



Sources: Eurostat and Banco de Portugal calculations. | Note: "Real estate activities" and "Public administration, defence, education, human health and social work activities" were excluded from the analysis.

The results of the analysis by activity sector should be viewed with a degree of caution as they are sensitive to the methodology chosen to break down productivity growth and to the level of the data disaggregation. Furthermore, the data available do not capture all the resource reallocation channels. For example, the improvement in the allocation of labour across sectors may be compatible with a deterioration in this allocation within each sector.[33]

32. The sectors "Real estate activities and rentals" and "General government, education and health" were excluded from the GVA per employee analysis, as the way GVA is calculated in these sectors implies that their productivity does not have economic meaning (in the first case, GVA is distorted by imputed rents; in the second case, the GVA calculation for non-market services is based on employment developments).

33. Dias, Marques and Richmond (2014), using firm-level data, found evidence of a marked deterioration of resource allocation in Portuguese firms, within-sector (within-industry misallocation), during the period 1996-2011, which was particularly expressive in the services sector.

Final considerations

This Special issue analyses the real convergence process in the EU and the relative performance of Portugal's GDP *per capita* over a long period (1960-2018), identifying the patterns and characteristics of these processes. Lasting asymmetries between economies in terms of income *per capita* have economic, social and political costs. Real convergence leads to an increase in the living standards in the catching-up economies. The general public's support of the European integration project is also bolstered in this process.

The evidence presented in this Special issue indicates mixed conclusions in regard to developments in the convergence process in the EU over the last 25 years. After three and a half decades of progress, the convergence of the 15 initial countries (the EU15) stagnated between 1995 and 2018. This result is influenced by the differentiated impact of the crises observed over this period. Nevertheless it may also reflect the difficulty of Member States with lower income *per capita* – including Portugal – to maintain productivity gains compared to the EU. In turn, considering the current group of Member States (the EU28), the convergence process is significant, reflecting mainly the catching-up of the new Member States. The results presented indicate the relevance of human capital and the quality of institutions for understanding the different growth experiences.

It is acknowledged that European institutions have a role in promoting real convergence in the EU by maintaining surveillance mechanisms, coordinating economic policy and creating instruments for transferring income from richer to poorer countries. European funds have played this role, counteracting possible polarisation effects and promoting growth conditions. In this context, it is also worth noting the Macroeconomic Imbalance Procedure and the Country-Specific Recommendations, within the framework of the European Semester process. More recently, proposals are under way for implementing a financial support instrument for reforms and convergence in euro area countries ("Budgetary Instrument for Convergence and Competitiveness"). Nevertheless, responsibility for promoting sustained economic growth continues to be largely a task for national economic agents and authorities.

The analysis of income *per capita* in Portugal compared to the EU average shows that the process of real convergence of the Portuguese economy has halted in the last 25 years. This result largely reflects the persistence of a weak relative performance of total factor productivity, in a period in which significant relative contributions linked to the accumulation of factors are not expected. The negative contribution made by relative TFP over the period under review indicates persistent fragilities in the institutional framework and in the functioning of markets in the Portuguese economy. Developments relative to the EU of capital per employee and the skill levels of the labour force have been positive but the levels of these variables remain below those observed in the EU. Additionally, over the last 25 years, there have been no gains in productivity growth per worker in relative terms – despite a positive contribution from the reallocation of employment to more productive sectors in Portugal – reflecting a trend common to all activity sectors.[34]

34. For a detailed analysis of structural issues impacting Portuguese economic growth, see "Portuguese economic growth: A view on structural features, blockages and reforms", Economics and Research Department, Banco de Portugal.

The recovery of the Portuguese economy's convergence process is a complex challenge involving multiple policy dimensions. This task becomes more demanding in view of the challenges posed by demographic developments – namely the more adverse population ageing trends in Portugal compared to the EU average[35] – and rapid technological transformation to achieving greater potential growth and the restructuring of the economy. The mechanisms underlying growth are not fully established in the economic literature and act differently in different countries, depending on the international and domestic circumstances. However, in the case of the Portuguese economy, investment in human capital, promotion of conditions for sustained investment growth and improvement in the institutional framework and in markets' functioning, typically arise as policy priorities. Furthermore, developments recorded in these areas must be measured and monitored, taking as reference the countries performing better in these aspects.

35. For more details, see the Box "Demographics in Portugal: recent developments and projections", *Economic Bulletin*, October 2018.

Box 1 • Description of data and sources

The real convergence process in the EU requires the use of indicators for the welfare of the population that are comparable across countries, with the most common option being GDP *per capita* – as adopted also in this Special issue. The analysis is comparative and covers a long time horizon, warranting a degree of care in the units in which this indicator is measured. This box presents the methodological options regarding the indicator selected and the set of data used in this Special issue. Table C1.1 summaries the variables and sources used. AMECO database, provided by the European Commission (EC), was the main source.

The literature tends to use GDP *per capita* in purchasing power parities (PPP) to analyse the real convergence process, which ensures comparability between the various economies.[36] Conversion by this method, as opposed to market exchange rates, is preferred chiefly because it adjusts the indicator for the differences in purchasing power between countries. This is an important topic because price levels are generally higher in countries with higher income. Ignoring this when converting the aggregates will tend to overestimate GDP for the higher-income economies and underestimate it for the lower-income countries. The EU's variables converted under PPP are expressed in an artificial currency called the Purchasing Power Standard (PPS), which corresponds to euro assessed at the average price level in the EU.[37] This unit is typically used by European institutions, with PPP interpreted as the exchange rate between PPS and the euro.

Notwithstanding its advantage for comparing different economies, measuring GDP *per capita* at current prices in PPS between different time periods has the disadvantage of partly reflecting price fluctuations.[38] This disadvantage is mitigated by using relative GDP *per capita* or GDP *per capita* as a percentage of the EU level.

Given this assessment, the analysis of the real convergence in the EU looks at the GDP *per capita* series measured in PPS. Nevertheless, the robustness of the results was confirmed when volume data is used. In the analysis of the Portuguese economy, variables in real terms were used, thereby ensuring comparability over time and consistency of the data used in the breakdowns.

36. The purchasing power parity (PPP) between two countries is the rate at which the currency of country A may be converted into that of country B such that the cost of a set of goods and services is the same in both countries. This calculation requires research into the average national prices of a large and representative basket of goods and services in the participating economies. The PPPs are then calculated as averages of the relative prices of those various goods and services, using a weighting based on the domestic expenditure of each country. Thus the PPPs convert the different countries' expenditure aggregates into a common currency and a uniform price level, ensuring comparability.
37. One PPS can buy the same quantity of goods and services in each EU country. However, the differences in price levels mean that different amounts of national currency are needed, depending on the country.
38. An alternative would be to consider GDP *per capita* at constant prices assessed using PPPs from a reference year. However, implicit in the construction of this indicator is the assumption that the price structures remain constant over time. This is unrealistic, especially for long time periods.

Table C1.1 • List of the variables and sources used in this Special issue

Variable	Description	Source
Real convergence in the EU		
GDP *per capita*	Gross domestic product, *per capita*, at current prices in PPS	AMECO EC
Human Capital	Human capital index based on the average years of schooling (Barro and Lee, 2013) and a rate of return to education	PWT 9.1
Institutional quality	Average of the following Worldwide Governance Indicators: rule of law, regulatory quality, government effectiveness and control of corruption.	World Bank
Relative performance of the Portuguese economy		
GDP per capita	Gross domestic product, *per capita*, at 2010 constant prices	AMECO EC
Employment	Employment, number of persons (National Accounts concept) (a)	AMECO EC
Capital stock	Net capital stock at 2010 constant prices	AMECO EC
GVA	Gross value added, chain linked volumes (2010)	Eurostat
Employment	Employment, number of persons (National Accounts concept)	Eurostat

Notes: PWT 9.1 refers to version 9.1 of the Penn World Tables (Feenstra, Inklaar and Timmer, 2015). (a) Labour Survey data (source: AMECO, European Commission) were used to resolve missing observations.

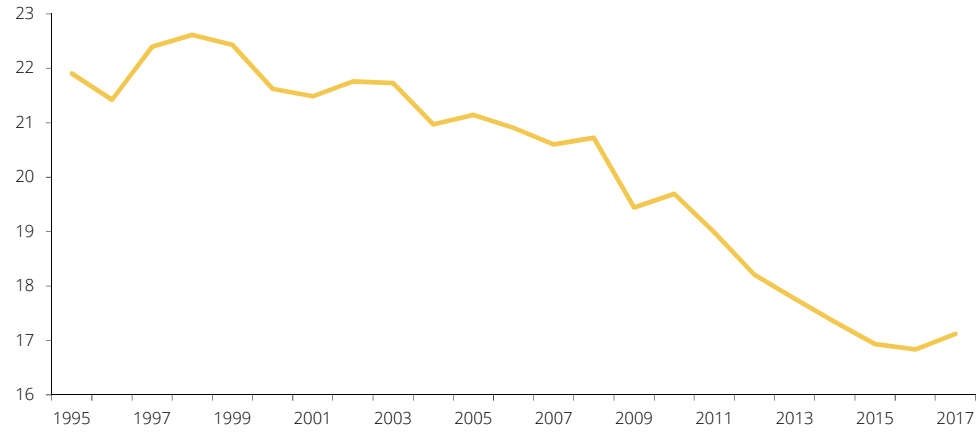
Box 2 • Regional convergence in Portugal

A country's convergence towards the EU may be achieved irrespective of the increase or decrease of domestic disparities. Between 1995 and 2018, the Portuguese economy's convergence process towards the EU seems to have stagnated. This box analyses whether regional convergence took place in Portugal over this period[39], taking GDP *per capita* data under disaggregation 3 of the Nomenclature of Territorial Units for Statistics (NUTS 3).[40] Real convergence in Portugal is assessed using two measures typically appearing in the empirical literature: sigma convergence and absolute beta convergence.[41]

The dispersion between the income *per capita* levels of the Portuguese regions declines over the period under review, indicating sigma convergence (Chart C2.1). Note that evidence of sigma convergence does not only reflect the convergence of the lower-income regions towards the national average. Indeed, GDP *per capita* for Área Metropolitana de Lisboa as a percentage of Portugal's GDP *per capita* declined over the period under review, in particular since 2009 (from 142% to 132% in 2017).

39. The information released by Statistics Portugal is only available up to 2017, with the data for that year still provisional. For further details about Portugal's regional accounts, see INE (2018).
40. This analysis uses GDP *per capita* in real terms, as the indicator measured in PPS does not take into consideration the internal purchasing power differences (conversion is uniform across all the regions).
41. See the section on real convergence measures in this Special issue for a description of these measures.

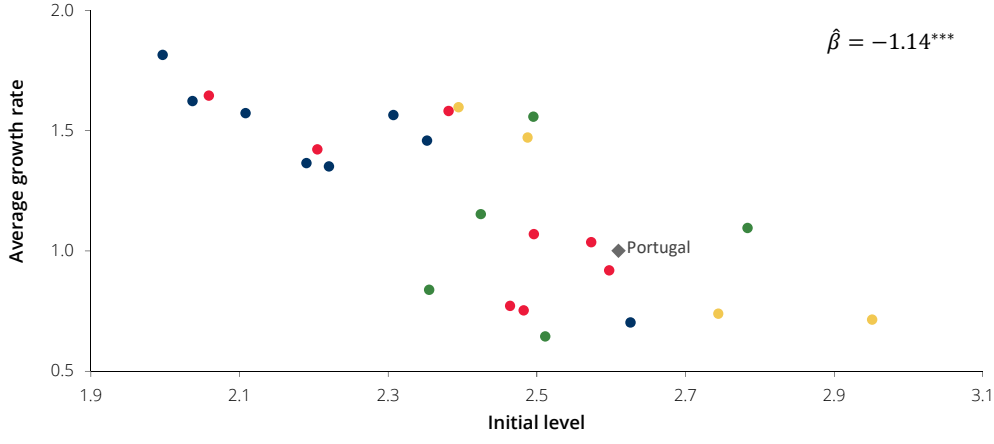
Chart C2.1 • Sigma convergence in Portugal at NUTS 3 level | Mean absolute deviation



Sources: Statistics Portugal and Banco de Portugal calculations. | Note: Mean absolute deviation is calculated as the average of the absolute differences between GDP *per capita* for each region and the country's GDP *per capita*.

Analysis of beta convergence allows an assessment of the relative developments of each region over a given period. Between 1995 and 2017 the Portuguese regions with a lower income *per capita* level grew faster on average than the more prosperous regions, thus implying absolute beta convergence (Chart C2.2). This behaviour is particularly evident for most of the Norte regions (shown in blue in Chart C2.2). The speed of convergence is 1.1% per year, implying that it would take around 60 years to halve the initial difference between the regions' income *per capita*.

Chart C2.2 • Beta convergence in Portugal at NUTS 3 level over the 1995-2017 period | GDP *per capita* in real terms



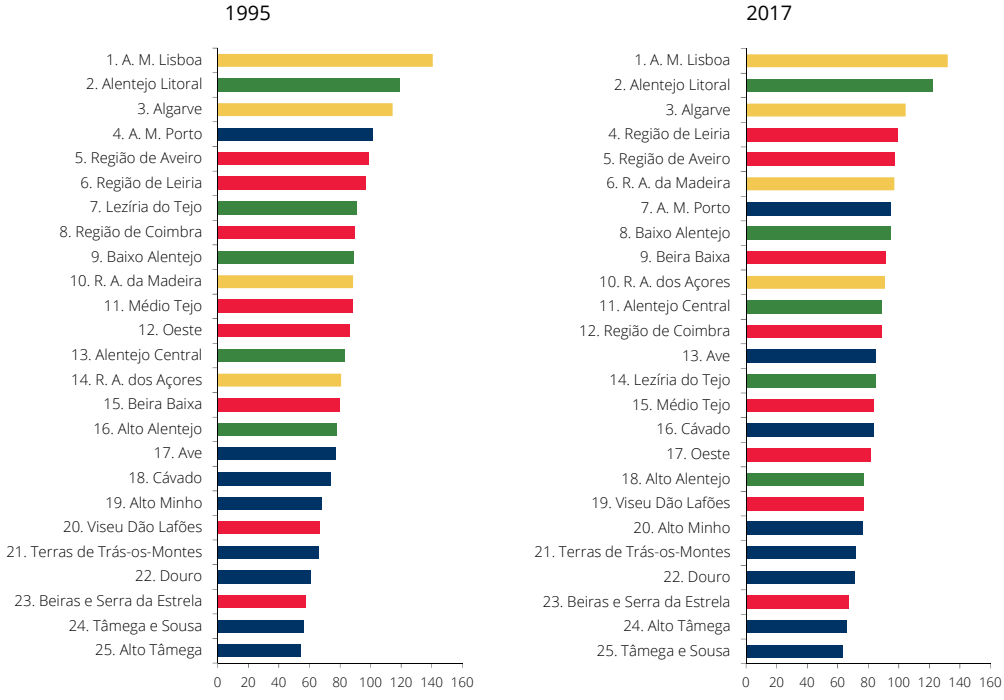
Sources: Statistics Portugal and Banco de Portugal calculations. | Notes: Regions shown in blue belong to NUTS 2 Norte, in red to NUTS 2 Centro and in green to NUTS 2 Alentejo. The other regions (Algarve, Área Metropolitana de Lisboa, Região Autónoma da Madeira and Região Autónoma dos Açores) are shown in yellow and are both NUTS 2 and 3.

The relative performance between regions in the period under review is reflected in position changes in the GDP *per capita* ranking (Chart C2.3). Those rising in the ranking include Beira Baixa, Região Autónoma da Madeira, Região Autónoma dos Açores and Ave. Among those falling in the

ranking are the regions of Lezíria do Tejo, Médio Tejo, Oeste, Coimbra and Área Metropolitana do Porto. The three top regions remained the same from 1995-2017, despite the decrease in relative GDP *per capita* in the capital city region. The relative position of Alentejo Litoral (2nd place) relates to the presence of large energy sector firms in this region.

The analysis in this box suggests that a real convergence process took place between the 25 Portuguese regions over the 1995 to 2017 period. This is a positive result as it reflects an improvement in living standards for the lower-income regions. This reduction in regional asymmetries in income *per capita* contributes to a greater level of socio-economic cohesion in the country, which constitutes a growth factor in itself.

Chart C2.3 • Comparison of GDP *per capita* in the NUTS 3 Portuguese regions in 1995 and 2017 | As a percentage of Portugal GDP *per capita*



Source: Statistics Portugal. | Notes: Regions shown in blue belong to NUTS 2 Norte, in red to NUTS 2 Centro and in green to NUTS 2 Alentejo. The other regions are shown in yellow and are both NUTS 2 and 3.

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