

Economic Bulletin

The Portuguese economy in 2018

May 2019



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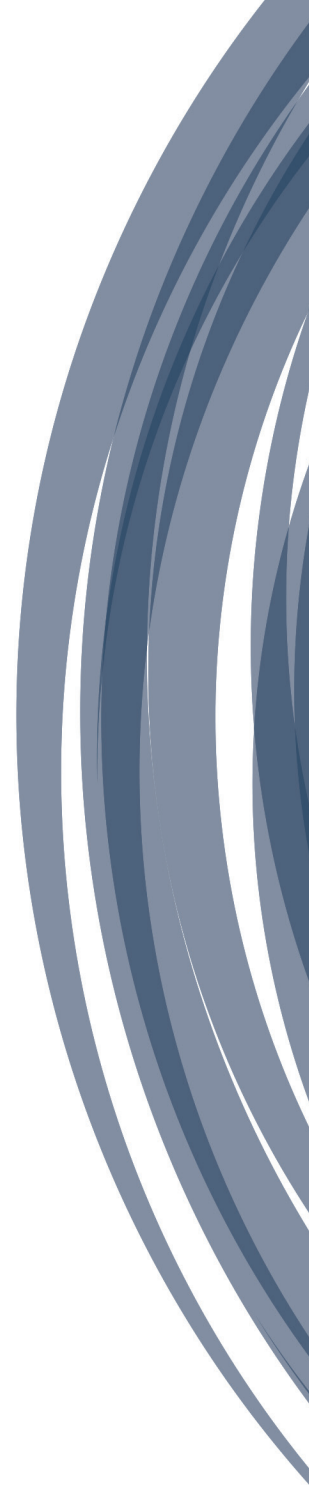
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I The Portuguese economy in 2018

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1 Overview

In 2018 the expansion of the Portuguese economy continued for the fifth year in a row. The macroeconomic adjustment process went on, most notably via the deleveraging of the various sectors of the economy and, thereby, the reduction in past imbalances. This adjustment has also resulted in a more open economy, but not in productivity gains (developments in this variable over the past decade are discussed in the Special issue). Indeed, the expansion of output in the current business cycle has chiefly mirrored employment growth. In line with the euro area, this expansion has also been more gradual than in previous cycles. It was only in 2018 that real income exceeded the level one decade before. In more recent years, economic growth has been slightly above the euro area average, making room for slight gains in convergence measured by real GDP per capita.

The European Central Bank's monetary policy remained highly accommodative and continued to provide a favourable environment for euro area economies, more specifically through the expanded asset purchase programme and forward guidance on interest rates. The cost differential of new bank loans to Portuguese firms vis-à-vis the euro area as a whole stabilised at roughly the same level as before the onset of the international financial crisis. The fiscal policy stance in Portugal has remained broadly neutral throughout the expansionary phase of the economy.

Economic activity slowed down in 2018, amid a general downturn in the euro area. Indeed, the global international environment deteriorated, namely due to concerns about increased protectionism, with adverse effects on trade flows. In the case of the Portuguese economy, the deceleration from the previous year was due to lower growth of exports and, to a lesser extent, corporate investment. By contrast, private consumption continued to grow sizeably, on the back of favourable labour market conditions. Imports showed a deceleration trend, but less markedly so than exports, which resulted in a reduction in the goods and services account surplus. This requires particular attention, given that the Portuguese economy's external indebtedness remains high. The increase in the economic growth potential is key to ensure that private consumption continues on an upward path as well as a strong build-up of capital stock, without jeopardising the necessary reduction in indebtedness. Against this background, one of the major challenges faced by the Portuguese economy is to steer productivity back to an upward trend.

Looking at developments in demand components, private consumption and disposable income continued to be closely aligned in 2018. Changes in disposable income have been mostly supported by the increase in employment and wages, as well as public transfers. Purchases of durable goods, albeit slowing down, have shown a considerable momentum, which should be assessed against the sharp decline in the purchases of such goods in the early stage of the adjustment of the Portuguese economy. The momentum gained by the purchase of durable goods benefits from favourable financing conditions for households, as shown by the growing share financed by consumer credit in the most recent period. Nevertheless, the household sector as a whole has managed to reduce indebtedness, as mirrored by the robust pace of repayment of financial liabilities associated with house purchase.

The household savings rate remained at historically low levels. Growth in savings has been limited by the pick-up of private consumption to a path compatible with a greater economic well-being of households, amid a moderate evolution of disposable income. Indeed, adverse

developments in productivity have not made it possible to sustain a stronger momentum in wages and income. The continued low level of savings, together with more buoyant household investment in housing, has led to a decrease in net borrowing for this institutional sector, which has edged closer to zero in 2018.

Following a strong expansion over the past few years, corporate gross fixed capital formation decelerated in 2018, still in the framework of a capital stock build-up after a substantial decrease in investment flows at the beginning of this decade. The deceleration in this variable, which features high volatility, should reflect the influence of cyclical factors, such as the deterioration in the external demand outlook and increased global uncertainty. In the medium to long-term, however, several structural factors continue to hold back corporate investment.

The investment rate of non-financial corporations (ratio of investment to the value added of the sector) has increased very gradually, after a minimum in 2013, but it is still below its 2008 level. The Statistics Portugal's Business Costs of Context Survey points, in particular, to adverse framework factors associated with the judicial system, licensing and the tax system. Furthermore, the corporate sector has faced the need to reduce indebtedness, which continued to edge downwards in 2018. In the future, the strong build-up of productive capital by Portuguese firms should match an increase in their value added, so that borrowing needs keep a balanced profile.

Residential investment maintained the momentum shown since 2016, and continued to be sustained by favourable financial conditions and demand by non-residents, while also benefiting from a buoyant tourism sector. New loans for house purchase have followed along this path, posting a sharp increase over the past few years, although with some stabilisation in the most recent period. Over the past two year, public investment returned to a growth track, although from historically low levels. The pick-up in public investment should be guided by selective criteria, taking into account its impact on the potential economic growth.

Exports decelerated in 2018, with a differentiated behaviour across markets. Intra-EU exports continued to grow strongly, despite a slowdown in external demand in those economies. In particular, there have been further market share gains, highly concentrated in car sales. By contrast, developments in sales to countries outside the EU were negative. Tourism exports continued to show considerable momentum, despite a slowdown, making it possible to lock in market share gains and to strengthen the sector's contribution to balanced external accounts. The surplus in the goods and services account decreased from the previous year, mainly reflecting a volume effect. Notwithstanding the slowdown in the past year, the upward trend of exports continued. Microeconomic evidence indicates an increase in the share of firms selling a sizeable proportion of their production to external markets, broadly based across sectors (see the Special issue). Such an evidence also shows a positive link between productivity and internationalisation of firms, through both sales abroad and imports of goods and services used in the production process.

In 2018 the labour market continued to evolve very favourably, with a growth in employment, albeit in deceleration, and a sharp decrease in the unemployment rate. The unemployment rate is currently below the euro area average and close to the levels in the middle of last decade. The more intensive use of the labour input has stemmed from the reduction in unemployment, particularly medium and long-term unemployment over the past two years, as well as the employment of individuals previously inactive but with some attachment to the labour market. In fact, the participation rate has increased since 2017, most notably among older age groups.

Furthermore, the Portuguese labour market has benefited from a positive migration balance in the more recent period. In light of the reduction in the labour underutilisation rate, the population decrease and ageing trend will tend to gain importance as a limiting factor to labour supply expansion and potential economic growth. This effect could be mitigated to the extent that the Portuguese economy is able to attract skilled workers.

Wages have accelerated in the most recent period, in line with the more intensive use of the labour input, but nevertheless showing a contained evolution, broadly in line with that in the euro area. Wage growth, combined with adverse developments in productivity, has steered unit labour costs along an upward path, which, in turn, has put some pressure on prices. However, this pressure has been partly mitigated by a reduction in margins. Overall, the paths followed by labour costs and operating surplus per unit of output in Portugal and the euro area have not diverged in the most recent period. At the same time, external inflationary pressures eased in 2018.

The fiscal deficit has decreased over the past few years, and reached a level close to balance in 2018. The fiscal policy stance was roughly neutral, a conclusion that remains valid considering the last five years as a whole. Amid a reduction in interest outlays, the Medium-Term Objective now looms closer. The public debt-to-GDP ratio has come down in the most recent period, but it is still among the highest in the euro area. In this context, additional fiscal consolidation efforts are particularly necessary, with a view to reducing public debt at a faster pace and coping with future pressures on the expenditure side associated with population ageing and the pick-up in public investment.

The combined current and capital account balance decreased in 2018, with the Portuguese economy keeping a net lending position, albeit one of a small magnitude. The correction in the negative international investment position, as a percentage of GDP, continued in 2018, mainly reflecting GDP growth. Whilst there has been some progress, the magnitude of external indebtedness remains one of the main underlying vulnerabilities of the Portuguese economy.

Labour productivity stalled during the pick-up in activity in Portugal, following gains during the recessionary period, associated with the disappearance of firms and less productive jobs. Although the current expansionary phase in advanced economies has been characterised by weak productivity growth (by contrast to previous business cycles), Portugal has diverged from the euro area over the past five years.

Stagnant productivity in Portugal in the current environment reflects a long-term low growth trend, which seems to have been exacerbated by the aforementioned adverse impact of the economic adjustment on the capital stock. At the same time, the negative migration balance persisting up to 2016, which affected particularly younger age groups, had an adverse impact on human capital. Positive developments, most notably reforms under the adjustment programme and large improvements in workers' education over the past decades, appeared unable to steer productivity onto an upward path. The microeconomic evidence presented in the Special issue confirms that productivity has remained stagnant in intra-sectoral terms, over the past few years. Gains have been mainly achieved by way of an increase in the weight of the most productive sectors of the economy. This seems to be particularly associated with constraints on growth of firms throughout their life cycle, which are common to all sectors. In turn, firms that joined the market in the last decade have swiftly converged towards the productivity levels of older firms.

Participation in the Economic and Monetary Union continues to pose major challenges to national economies. The common monetary policy sets out an environment of price stability and favourable monetary conditions, but it does not guarantee by itself the maintenance of macroeconomic balances and the real convergence of economies. Macroeconomic coordination at the European level has undergone important steps, precisely as a response to the limitations that became evident after the onset of economic crises in the beginning of this decade. A most notable one was the creation of the Banking Union.¹ Multilateral surveillance mechanisms have also been furthered in the fiscal and macroeconomic dimensions. In particular, the European Semester and the Macroeconomic Imbalance Procedure have taken on a leading part in the identification of macroeconomic imbalances and the issuance of recommendations by European institutions, with a view to correcting them. Nevertheless, in both aforementioned dimensions, the European institutional architecture assigns Member States the key role of implementing economic policies conducing to convergence among economies. As such, it is crucial that decision-makers and economic agents at the national level feel fully engaged in the Economic and Monetary Union and are aware of the ensuing benefits and constraints. This process also relies on strengthening the institutions that assess national policies for consistency with coordination needs at the European level, most notably the public finance and productivity councils. At the same time, deepening the Banking Union is an urgent imperative. Against this background, improving the economic well-being of the Portuguese population rests on an ambitious reform agenda, in a framework of stability and right incentives to economic agents.

1. On this topic, see Amador, Valle e Azevedo, and Braz (2019). "The deepening of the Economic and Monetary Union". Banco de Portugal *Occasional Paper No 1*.

2 International environment

Loss of momentum in global economic activity in 2018, with a sharp deceleration in world trade

World economic activity slowed in 2018, amid growing trade tensions between the United States and China, a deteriorating outlook for investment, higher policy uncertainty across several countries and tighter financial conditions (Chart I.2.1).

Activity lost momentum both in the advanced economies and in emerging market economies, but with differing performances across countries (Table I.2.1). The acceleration observed in the US economy, a highly buoyant Indian economy and a still robust, albeit slower, pace of growth in China were particularly significant. By contrast, Japan, the United Kingdom, the euro area and a number of emerging market economies, such as Turkey and Argentina decelerated. In the context of weakening economic activity, in particular in the investment and export components, world trade volumes slowed notably, which was broadly based across countries (Chart I.2.2).

Table I.2.1 • Gross Domestic Product | Real year-on-year rate of change, Percentage

	2014	2015	2016	2017	2018
World	3.6	3.4	3.4	3.8	3.6
Advanced economies	2.1	2.3	1.7	2.4	2.2
United States	2.5	2.9	1.6	2.2	2.9
Japan	0.3	1.3	0.6	1.9	0.8
Euro area	1.4	2.0	1.9	2.5	1.8
Germany	2.2	1.5	2.2	2.5	1.4
France	1.0	1.0	1.1	2.3	1.6
Italy	0.2	0.8	1.2	1.7	0.7
Spain	1.4	3.6	3.2	3.0	2.6
United Kingdom	2.9	2.3	1.8	1.8	1.4
Emerging market and developing economies	4.7	4.3	4.6	4.8	4.5
Emerging and developing Europe	3.9	4.8	3.3	6.0	3.6
Commonwealth of Independent States	1.0	-1.9	0.8	2.4	2.8
Russia	0.7	-2.5	0.3	1.6	2.3
Emerging and developing Asia	6.8	6.8	6.7	6.6	6.4
China	7.3	6.9	6.7	6.8	6.6
India	7.4	8.0	8.2	7.2	7.1
Latin America and the Caribbean	1.3	0.3	-0.6	1.2	1.0
Brazil	0.5	-3.5	-3.3	1.1	1.1
Middle East and North Africa	2.7	2.5	5.3	1.8	1.4
Sub-Saharan Africa	5.1	3.2	1.4	2.9	3.0

Sources: Eurostat and IMF.

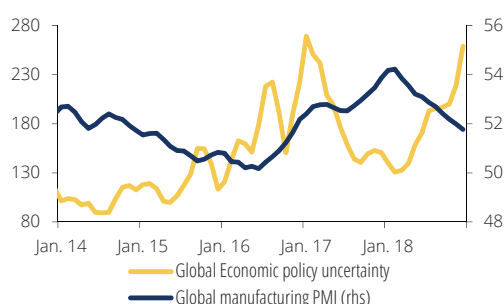
Volatile oil prices during the year affected developments in inflation

Oil prices fluctuated widely during the year. An upward trend was prevalent until October, when oil prices reached a five-year high of around USD 85 per barrel, against strong global demand and concerns about the impact of US sanctions on Iranian exports and disruptions in oil supply in Venezuela. This path then reversed abruptly, with prices dropping to around USD 50 per barrel

at the end of 2018 given excess supply concerns and a weaker global growth outlook at the end of the year.

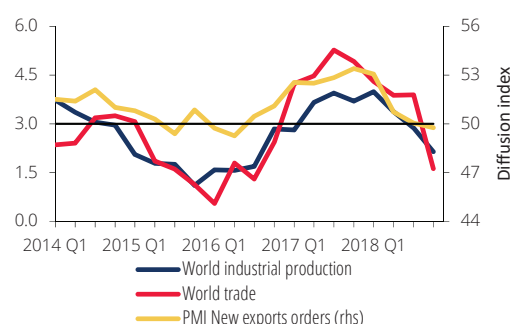
Developments in inflation in advanced economies reflected the behaviour of energy prices, increasing up to the third quarter and decreasing slightly at the end of the year. Excluding more volatile components, inflation increased following a prolonged period without any significant changes (Chart I.2.3). The labour market improvement in these economies – the unemployment rate in the OECD countries as a whole is at its lowest since 1980 – is gradually leading to higher wage growth (Chart I.2.4).

Chart I.2.1 • Global manufacturing Purchasing Managers' Index and global economic political uncertainty | Diffusion index



Sources: Markit and www.policyuncertainty.com. | Notes: The global Index is a GDP-weighted average (current prices) of national EPU indices for 20 countries (Australia, Brazil, Canada, Chile, China, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, The Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the United States). Each national index reflects the relative frequency of own-country newspaper articles that contain a trio of terms pertaining to the economy, policy and uncertainty. PMI - Purchasing Managers' Index is a monthly indicator that summarises purchasing managers' views on the conditions of industry, services, construction and retail. If below 50 indicates the deterioration of conditions. 3-month moving averages.

Chart I.2.2 • World indicators of activity and trade | Year-on-year growth rate, in percentage



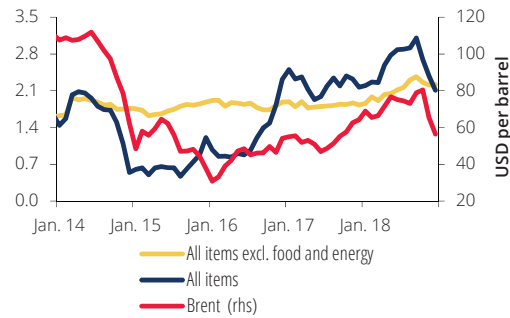
Sources: CPB Netherlands Bureau for Economic Analysis, Markit Economics and Banco de Portugal calculations. | Notes: World trade as the average of goods exports and imports. PMI- Purchasing Managers' Index is an indicator that summarises monthly purchasing managers' views on the conditions of industry, services, construction and retail. If below 50 indicates the deterioration of conditions. 3-month moving averages.

Economic activity continued to accelerate in the United States in 2018, but slowed in the United Kingdom

In 2018 the US economy expanded for the ninth year in a row. The ongoing pace of recovery is slower than in previous recoveries (Chart I.2.5, panel A). In the euro area the recovery has been even more sluggish (Chart I.2.5, panel B). Average annual GDP growth in the United States stood at 2.9%, supported by buoyant domestic demand, amid still favourable monetary and financial conditions, sustained improvements in the labour market, and the impact of the fiscal stimulus package introduced at the end of 2017. Annual growth of exports picked up from 3.0% to 4.0% and imports continued to grow strongly. As for developments in consumer prices, the year-on-year change in the private consumption deflator excluding the more volatile components increased gradually throughout 2018. Against this backdrop, the Federal Open Market Committee (FOMC) continued the normalisation of policy interest rates – raising the rates at its March, June, September and December meetings – and continued the balance sheet normalisation that had begun in October 2017.

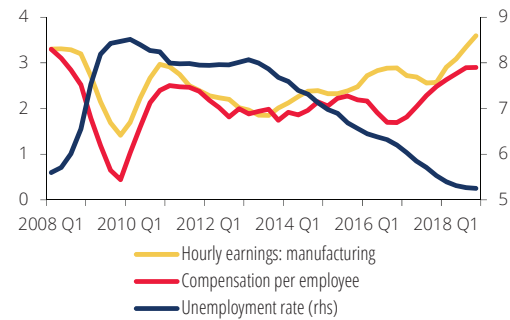
In the United Kingdom, Portugal's main trading partner outside the euro area, economic activity decelerated by 0.4 p.p. to 1.4% (annual rate of change). Private consumption continued to grow strongly, but GFCF decelerated sharply and the contribution from external demand declined considerably, due to the uncertainty surrounding Brexit (Box 1) and lower global demand growth. The year-on-year rate of change in the consumer price index declined over the course of the year, from 2.9% in December 2017 to 2.1% in December 2018, partly reflecting a gradual fading of the impact of the pound sterling's past depreciation and, in the last months of the year, a drop in international oil prices. In August, the Bank of England decided to raise the Bank Rate to 0.75% (+0.25 p.p.), expecting inflation to gradually converge towards the 2.0% objective.

Chart I.2.3 • OECD inflation and Brent in USD per barrels | Year-on-year growth rate, in percentage



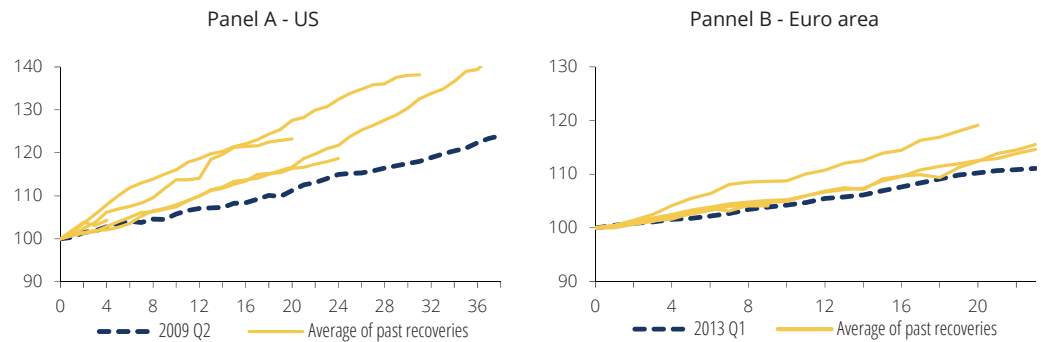
Sources: Refinitiv, OCDE and Bloomberg.

Chart I.2.4 • Labour markets in OECD | Year-on-year growth rate, in percentage



Sources: OECD, Refinitiv and Banco de Portugal calculations.

Chart I.2.5 • Economic recovery in US and the euro area | Quarter since the troughs



Sources: Eurostat, CEPR, NEBR, Refinitiv and Banco de Portugal calculations. | Notes: In the euro area troughs dated by the CEPR: 1975 Q1, 1982 Q3, 1993 Q3, 2009 Q2 and 2013 Q1. In the US troughs dated by the NBER: 1975 Q1, 1980 Q3, 1982 Q4, 1991 Q1, 2001 Q4 and 2009 Q2. The calculation of past recoveries includes only data for the period of time that lasts the expansion. Dashed lines referring to the current recovery stop in the 2018 Q4.

As regards economic developments in the emerging market economies that are particularly relevant for Portuguese trade flows, the Chinese economy decelerated in 2018² (from 6.8% to 6.6% in annual average terms), while Brazil continued to exhibit low growth (1.1% for the year as a whole), in the midst of high political uncertainty. In Angola, economic activity declined by 1.7% in 2018, compared

2. Over the year, several economic policy measures were introduced in China, inter alia, the central bank reduced the minimum reserve requirement ratio on three occasions and the Chinese government announced economic stimulus measures to offset the impact of trade disputes.

with -0.2% in the previous year, within the context of the adoption of the Macroeconomic Stabilisation Programme in January 2018.

∴ Euro area activity slowed down more than expected

In 2018 euro area GDP growth moderated from 2.5% to 1.8%. The deceleration in activity was broadly based across countries, mainly owing to developments in exports. In the year as a whole, exports decelerated from 5.5% to 3.1%, due to the global economic slowdown and increased uncertainty surrounding trade policies. The sharper-than-expected economic slowdown was the result of a combination of factors specific to certain countries and sectors, which, in a number of cases, had a more persistent impact than initially anticipated. In particular, there were production constraints owing to adverse weather conditions in the first half of the year, and bottlenecks in car production in Germany and production disruptions in France in the second half of the year.

In relation to domestic demand components, private consumption decelerated, but growth remained in line with its average over the past two decades. Consumer expenditure continued to be supported by favourable conditions in the labour and credit markets. Euro area GFCF continued to grow at a relatively robust pace, similarly to the previous year.

Focusing on the four largest euro area economies – accounting for around half of external demand for Portuguese goods and services – the weakening of activity was less pronounced in Spain than the other economies (2.6%, compared with 1.6% in France, 1.4% in Germany and 0.7% in Italy). With the exception of Spain, domestic demand slowed down in these economies in 2018, both in terms of private consumption and GFCF. Exports and imports of goods and services decelerated in these four economies.

∴ External demand for Portuguese goods and services decelerated

In 2018 the indicator of external demand for Portuguese goods and services slowed down from 4.6% to 3.4%. In intra-annual terms, the indicator of external demand decelerated both in the intra and extra-euro area components from the first to the second half of the year (Table I.2.2).

∴ Slight increase in euro area inflation. but underlying inflation remained at low levels

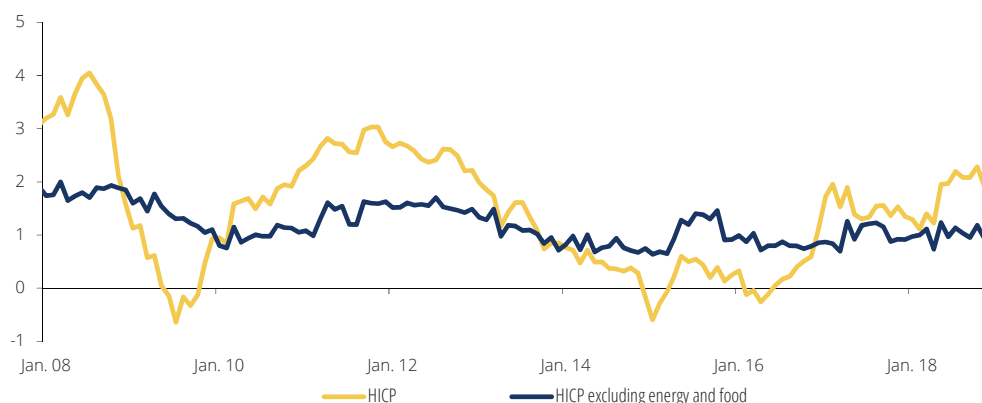
In the euro area, the annual rate of change in the HICP increased from 1.5% in 2017 to 1.8% in 2018 (Chart I.2.6). Inflation excluding energy and food remained constant, at around 1%, a low level compared with the period prior to the international financial crisis. Most items of underlying inflation recorded annual changes below pre-crisis levels. In the group of countries most affected by the sovereign debt crisis, inflation is considerably lower than in the pre-crisis period, while in those countries that maintained high credit ratings it did not change significantly over the entire period (Chart I.2.7).

Table I.2.2 • External demand of goods and services | Real year-on-year rate of change, Percentage

	Weights ^(b)	2014	2015	2016	2017	2018	2017		2018	
							S1	S2	S1	S2
External demand (ECB) ^(a)	100	4.9	4.0	2.8	4.6	3.4	4.2	4.9	3.8	2.9
Intra euro area external demand	62.7	5.1	6.1	3.2	5.0	2.9	4.8	5.2	3.4	2.4
Imports:										
Spain	25.5	6.6	5.4	2.9	5.6	3.5	4.9	6.2	5.0	2.0
Germany	12.0	3.6	5.2	4.0	5.3	3.4	5.0	5.6	3.3	3.6
France	12.5	4.9	5.7	3.1	4.1	0.9	4.3	4.0	0.8	0.9
Italy	3.4	3.0	6.7	3.8	5.8	1.8	5.8	5.9	2.3	1.4
Extra euro area external demand	37.3	4.5	0.6	2.0	3.8	4.2	3.2	4.4	4.5	3.9
Imports:										
United Kingdom	6.8	3.8	5.5	3.3	3.5	0.7	4.9	2.1	0.0	1.3
United States	4.9	5.1	5.5	1.9	4.6	4.5	4.4	4.7	4.5	4.5
Brazil	1.2	-2.3	-14.0	-10.3	5.5	11.1	2.8	8.2	7.5	14.5
China	1.6	5.1	-1.5	3.8	6.0	6.2	8.4	3.7	6.3	6.0
World trade of goods and services (IMF)		3.9	2.8	2.2	5.4	3.8	-	-	-	-
World imports of goods (CPB)		2.8	1.7	1.5	5.2	3.8	4.8	5.5	4.6	3.0

Sources: CPB, ECB, IMF, Refinitiv and Banco de Portugal calculations. | Notes: (a) External demand is computed as the weighted average imports of goods and services volume of Portugal's main trading partners. Each country/region is weighted by its share in Portuguese exports. b) Average share of nominal exports of goods and services in Portugal's total exports between 2014-16.

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



Source: Eurostat. | Note: In January 2019, a new methodology for computing the indices of package holidays for Germany was introduced and Eurostat changed the calculation of special aggregates (now compiled from the 5-digit level). The revised data start from January 2015 and January 2017, respectively. Due to these changes, services, core and total inflation rates for Germany and the euro area are distorted during 2015 and special aggregates y-o-y growth rates are distorted during 2017 for all individual countries and the euro area.

Chart I.2.7 • HICP excluding energy and food in euro area countries | Year-on-year growth rate, in percentage

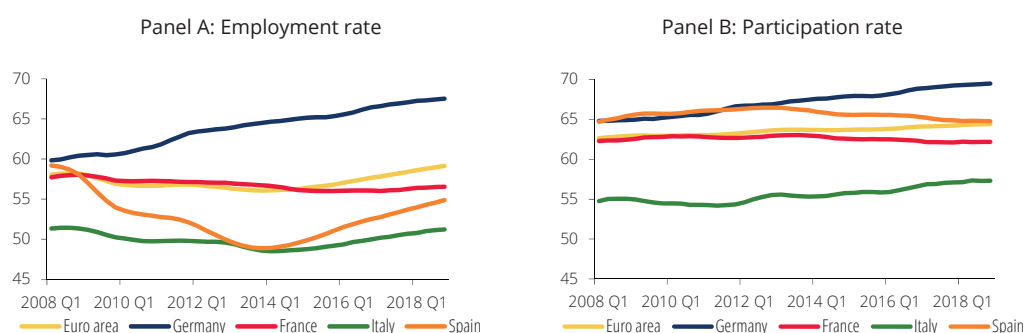


Sources: Eurostat and Banco de Portugal calculations. | Notes: Higher rated countries: Germany, France, Netherlands, Austria, Belgium and Finland. Countries most affected by the sovereign debt crisis: Italy, Spain, Ireland, Portugal, Greece and Cyprus. For comparison's sake among countries HICP data used do not include methodological changes introduced by the Eurostat in January 2019.

Expansion in euro area employment and acceleration in wage costs

Euro area labour market conditions continued to improve throughout 2018. The unemployment rate dropped to 7.9% at the end of the year, the lowest level of the past decade, but considerable differences remained across euro area countries. The recovery in employment continued (1.5% growth in 2018, compared with 1.6% in 2017) and was apparent in most countries (Chart I.2.8, panel A). The expansion of euro area employment has been supported by an increase in the participation rate, in particular in older age cohorts, which more than offset the negative impact of population ageing. The favourable impact of the participation rate was particularly visible in Germany and Italy (Chart I.2.8, panel B).

Chart I.2.8 • Employment and activity rates | Percentage

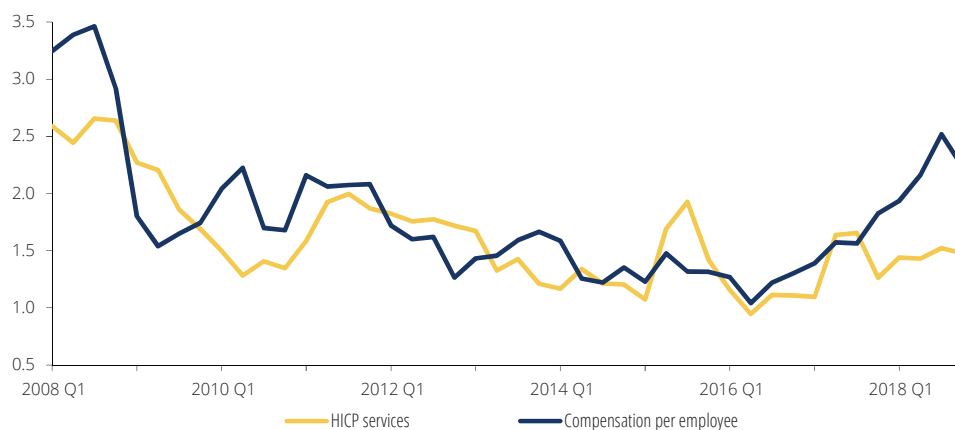


Sources: Eurostat and Banco de Portugal calculations. | Notes: Labour Force Survey data. Working-age population (WAP) - 15 to 74 years old. Employment rate - Employment/WAP. Participation rate - Labour force/WAP.

Compensation per employee remained on the accelerating path that began in mid-2016 (growing by 2.2% in 2018, compared to 1.6% in 2017). This acceleration was reflected with a slight lag in stronger growth in unit labour costs (ULCs) (1.9% in 2018, compared with 0.7% in 2017), which was broadly

based across countries and sectors. However, the pass-through of these developments in labour costs to consumer prices remains subdued, in particular for services prices which have a large labour cost content (Chart I.2.9).

Chart I.2.9 • HICP and compensation per employee in the euro area | Year-on-year growth rate, in percentage



Sources: Eurostat and ECB.

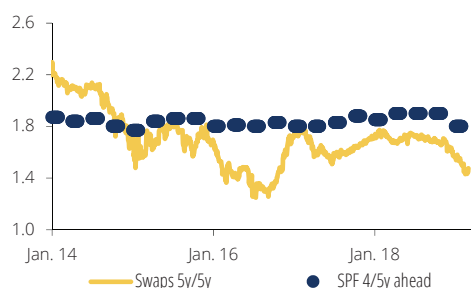
Market based measures of longer-term inflation – which had remained relatively stable since October 2017, around the time of the last announcement of an expansion of the asset purchase programme by the European Central Bank (ECB) – declined somewhat in the last few months of 2018. This appears to be related to the abrupt drop in international oil prices. According to the ECB's Survey of Professional Forecasters (SPF), inflation expectations for a horizon of four to five years were also revised downwards, to 1.8% at the end of the year (according to the survey published in January 2019), with the balance of risks around this estimate³ remaining on the downside (Chart I.2.10). In addition, on the basis of this survey, the probability of inflation remaining below 1.5% over the medium to long term increased (Chart I.2.11).

International financial markets were characterised by spikes in volatility and uncertainty

In 2018 international financial markets were characterised by various volatility spikes, associated with concerns about the Federal Reserve's withdrawal of monetary stimuli, the announcement and implementation of protectionist measures by the United States, and uncertainty about the policy stance in a number of euro area countries. In addition, high uncertainty continued to surround the process of withdrawal of the United Kingdom from the EU.

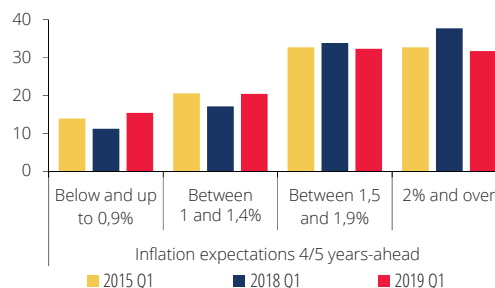
3. The balance of risks is measured by the asymmetry of the probability distribution around the point forecast of the SPF.

Chart I.2.10 • Medium and long-term inflation expectations | Percentage



Sources: ECB (Survey of Professional Forecasters), Refinitiv and Banco de Portugal calculations. | Note: Average inflation rates implied in swaps (5-year period) and survey-based instruments (2-year period) starting in 4/5 years.

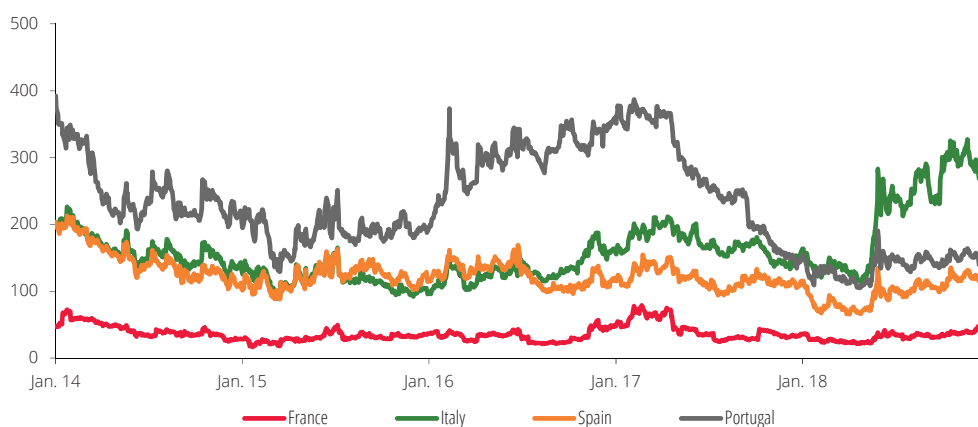
Chart I.2.11 • Survey based inflation expectations 4/5 years-ahead | Aggregate probability distribution, in percentage



Source: ECB (Survey of Professional Forecasters). | Note: Aggregate probability distribution based on survey individual responses.

In the sovereign bond markets, government bond yield rates rose both in the United States and the United Kingdom – particularly at shorter maturities –, owing to expectations of a rise in monetary policy interest rates in the near future. At longer maturities, the increases were limited by growing expectations of an economic deceleration in 2019. In the euro area, sovereign bond yield rates experienced periods of volatility, which led to a widening of the spreads vis-à-vis Germany (Chart I.2.12). In turn, stock market valuations saw a reversal at the end of the summer, as a result of lower optimism about corporate gains against the background of a downward revision to the economic growth outlook (Chart I.2.13).

Chart I.2.12 • 10-year sovereign bond interest rate spreads against Germany | Basis points

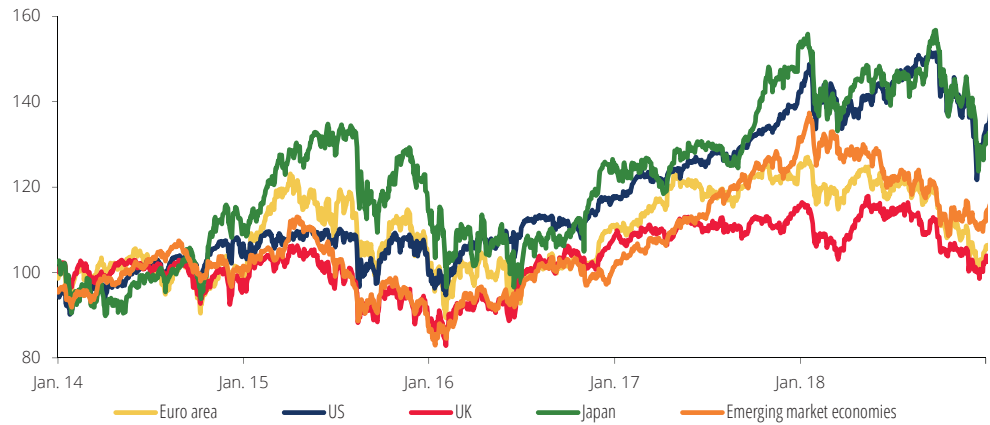


Sources: Refinitiv and Banco de Portugal calculations.

In the foreign exchange market, the US dollar appreciated in 2018, amid robust economic activity in the United States and higher policy interest rates. Safe haven currencies (e.g. Japanese yen, Swiss franc) also appreciated, within the context of the trade and geopolitical tensions above mentioned, while the pound sterling depreciated. The appreciation of the US dollar led to risk aversion sentiment

which resulted in a capital outflows from emerging markets and sharp depreciations in a number of currencies (Turkish lira, Singapore dollar and Hong Kong dollar). The Chinese currency also depreciated sharply from the middle of the year onwards, amid an intensification of trade tensions with the United States.

Chart I.2.13 • Stock markets | Index 2014 = 100

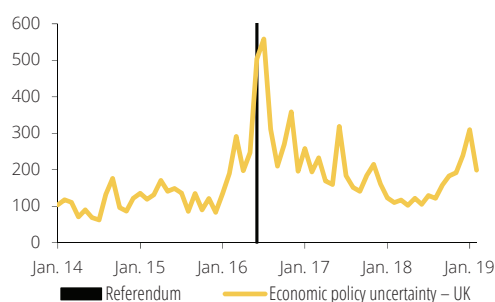


Sources: Refinitiv, Bloomberg and Banco de Portugal calculations. | Notes: Stock market indexes: Dow Jones Eurostoxx (Euro area), Standard and Poors (USA), Footsie (UK), Nikkei (Japan) and MSCI for emerging market economies.

Box 1 • Developments in the United Kingdom's departure from the European Union (Brexit) and its impact on the British economy so far⁴

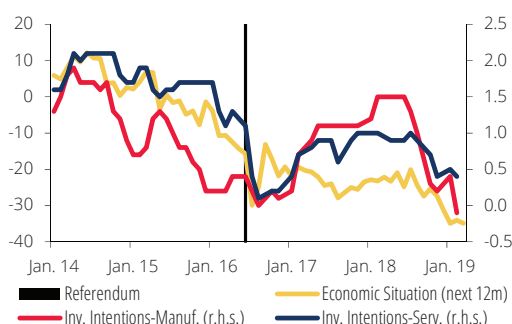
In the aftermath of the outcome of the referendum of 23 June 2016,⁵ the United Kingdom triggered Article 50 of the Lisbon Treaty on 29 March 2017 and notified the European Council of its intention to leave the European Union, setting the date of withdrawal to 29 March 2019. Since then, representatives from both parties have been involved in a long negotiation process, which resulted in a withdrawal agreement in November 2018, establishing the terms of a smooth exit and orderly transition, and a political declaration setting out the framework for the future relationship between the European Union and the United Kingdom (to be defined before the end of the transition period, at the end of 2020). However, this deal between the two negotiating teams was rejected by the British parliament in December 2018, turning the possibility of a withdrawal by the United Kingdom from the European Union without a deal into one of the main risks to the European economies. The looming Brexit deadline and the limited progress made in the British parliament towards reaching an agreement have contributed to an increase in political tensions, an environment of heightened uncertainty and deteriorating confidence among economic agents (Chart C1.1 and Chart C1.2). At the end of March 2019, the United Kingdom requested an extension of Article 50, with the deadline for withdrawal being initially postponed to 12 April 2019, followed by a new extension until 31 October 2019.

Chart C1.1 • Economic policy uncertainty index



Source: Measuring Economic Policy Uncertainty by Scott Baker, Nicholas Bloom and Steven J. Davis (available at www.PolicyUncertainty.com). | Note: The index reflects the frequency of terms related to economy, policies and uncertainty in 11 newspapers from the United Kingdom.

Chart C1.2 • Survey indicators of economic prospects and investment intentions | Balance



Sources: Bank of England and European Commission.

The outcome of the United Kingdom's withdrawal from the European Union remains uncertain, and might even be cancelled.⁶ Its economic impact over the medium to long term is difficult to quantify, as there is no historical precedent for the withdrawal of an economy such as the United Kingdom from a political and economic union such as the European Union. However, several

4. This box was based on data available up to mid-April 2019.

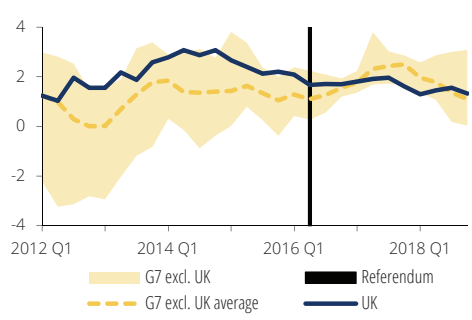
5. Box 2.1 – “The economic impact of the United Kingdom's withdrawal from the European Union (Brexit)”, *Economic Bulletin*, October 2016.

6. At the end of 2018, the European Court of Justice ruled that United Kingdom is free to unilaterally revoke the notification of its intention to withdraw from the European Union.

studies⁷ have presented a number of different scenarios to illustrate possible economic effects of different future economic relationships between the United Kingdom and the European Union. Practically all results suggest that leaving the European Union will have a negative impact on the British economy and, to a smaller extent, the euro area economies. These studies suggest that the less close the future economic relationship is and the more abrupt the transition is, the more severe the negative effects will be, with a sudden withdrawal without a deal being the worst-case scenario. The consequences for the euro area are expected to be primarily, but not exclusively, associated with changes in trading arrangements, given that the United Kingdom is one of its main trading partners (accounting for roughly 13% and 19% of exports of goods and services respectively). In the event of an abrupt transition, euro area countries (including Portugal) might be faced with an additional impact, in the form of a financial and confidence shock. Portugal is not expected to be one of the most affected euro area countries, although the United Kingdom is its most important trading partner outside the monetary union (accounting for around 7% and 15% of total exports of goods and services respectively).

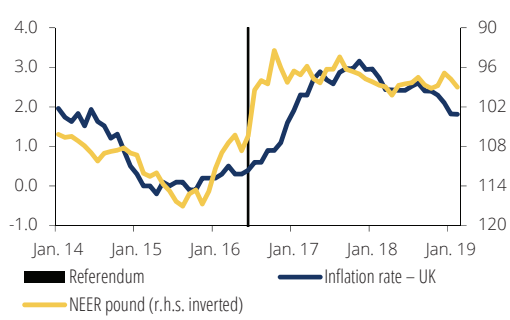
Regardless of the outcome of the negotiations and the economic relationship that might be established in the future, the process of withdrawal has already produced effects on the British economy as a result of the exchange rate depreciation that followed the referendum and, more recently, heightened uncertainty and decreased confidence among economic agents. Compared with other advanced economies, economic growth in the United Kingdom was more subdued in the aftermath of the referendum (Chart C1.3). The spike in inflation on account of the depreciation of the pound sterling following the referendum (Chart C1.4) had a negative effect on real income. However, owing to the decline in household savings (Chart C1.5), private consumption continued to exhibit resilient growth. At the same time, the exchange rate depreciation drove a temporary acceleration in exports, mitigating the slowdown in GDP in 2017. Within a context of favourable financial conditions and an economic global expansion, the pace of business investment growth in the United Kingdom has been slower than in other advanced economies (G7), particularly over the course of 2018, owing to uncertainty surrounding the process of withdrawal from the European Union (Chart C1.6).

Chart C1.3 • GDP Growth – Comparison with G7 | Year-on-year rate of change



Sources: OECD and Refinitiv. | Note: G7 countries excluding the United Kingdom include Germany, Canada, United States, France, Italy and Japan.

Chart C1.4 • Inflation and exchange rate | Year-on-year rate of change, 2010 = 100

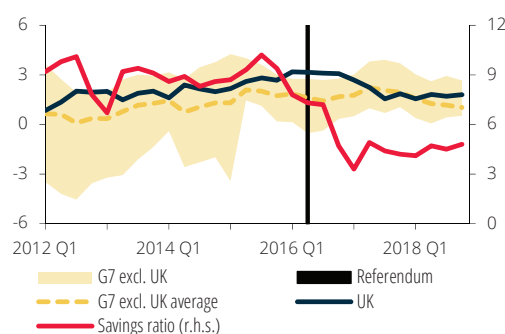


Sources: BIS and Bank of England. | Note: Nominal effective exchange rate covers a broad basket of currencies (from 61 economies).

7. IMF (2018), *Euro area policies – Selected Issues: Long-term impact of the Brexit on the EU*, NIESR (2018), *The Economic effects of the Government's proposed Brexit deal*, HM Government (2018), *EU Exit Long-term economic analysis*, CEP and The UK in a Changing Europe (2018), *The economic consequences of the Brexit deal*, and Bank of England (2018), *EU withdrawal scenarios and monetary and financial stability – a response to the House of Commons Treasury Committee*.

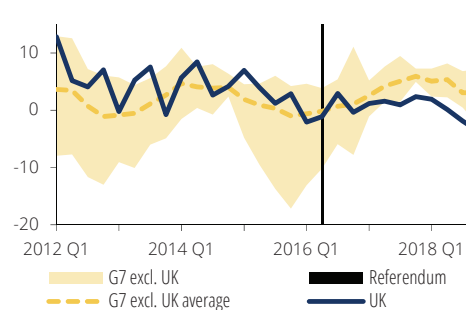
Regardless of the outcome of the negotiations and the economic relationship that might be established in the future, the process of withdrawal has already produced effects on the British economy as a result of the exchange rate depreciation that followed the referendum and, more recently, heightened uncertainty and decreased confidence among economic agents. Compared with other advanced economies, economic growth in the United Kingdom was more subdued in the aftermath of the referendum (Chart C1.3). The hike in inflation triggered by the depreciation of the pound sterling following the referendum (Chart C1.4) produced negative effects on real income. However, owing to the decline in household savings (Chart C1.5), private consumption continued to exhibit resilient growth. At the same time, the exchange rate depreciation drove a temporary acceleration in exports, mitigating the slowdown in GDP in 2017. Within a context of favourable financial conditions and an economic global expansion, the pace of business investment growth in the United Kingdom has been slower than in other advanced economies (G7), particularly over the course of 2018, owing to uncertainty surrounding the process of withdrawal from the European Union (Chart C1.6).

Chart C1.5 • Private consumption
– Comparison with G7 and UK Savings ratio
| Year-on-year rate of change and percentage of disposable income



Sources: Office for National Statistics and Refinitiv. | Note: G7 countries excluding the United Kingdom include Germany, Canada, United States, France, Italy and Japan.

Chart C1.6 • Business investment –
Comparison with G7 | Year-on-year rate of change



Source: Refinitiv. | Note: G7 countries excluding the United Kingdom include Germany, Canada, United States, France, Italy and Japan.

3 Monetary and financial conditions

3.1 Euro area

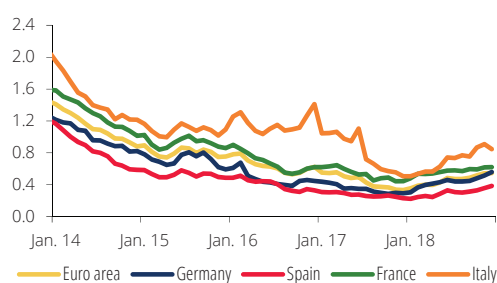
⋮ The ECB has ended net purchases under the APP at the end of 2018, but kept the commitment to maintain an accommodative monetary policy

In light of the progress made in the convergence towards a sustained inflation adjustment, the ECB slowed down the pace of monthly net purchases under the extended asset purchase programme (APP), from €60 billion in December 2017 to €30 billion starting January and to €15 billion starting September. At its December meeting, the ECB ended the period of APP net asset purchases, announcing that it would continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it 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.

⋮ Monetary and financial conditions remained favourable in the euro area

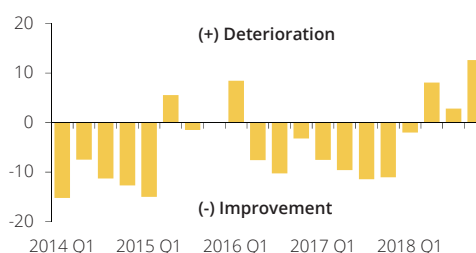
Throughout 2018, money market interest rates stayed at low levels and monetary conditions remained accommodative. However, banks' financing costs increased in the course of the year, particularly in Italy, mirroring higher bank bonds yield rates, which, nevertheless, remained at historically low levels (Chart I.3.1). This is confirmed by the *Bank Lending Survey*, in which banks reported a deterioration in market financing through bond issuance (Chart I.3.2).

Chart I.3.1 • Banks' financing costs | Percentage



Source: ECB. | Note: Banks' financing costs are the weighted cost of new business deposits (weighted by outstanding amounts) and bond yields (both high yield and investment grade debt).

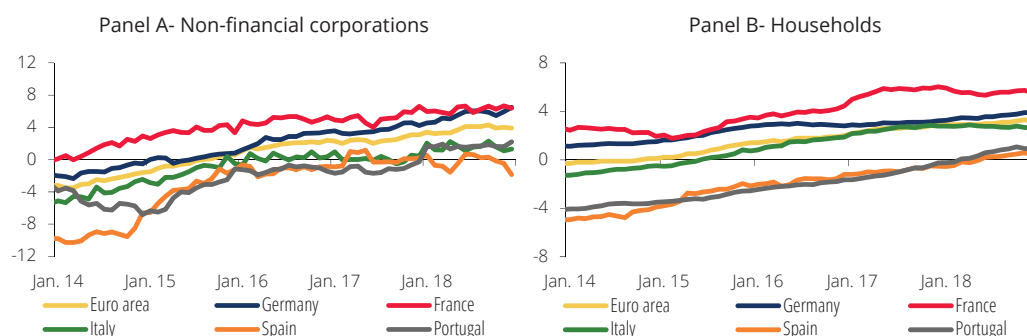
Chart I.3.2 • Changes in the market access to debt securities funding of resident banks | Diffusion index



Source: ECB. | Note: The diffusion index is computed based on the *Bank Lending Survey* and is the difference between the weighted sum of the percentage of banks responding "deterioration" and the weighted sum of the percentage of banks responding "improvement" in the funding conditions. The value zero means "remained unchanged". The weights are according to the intensity of the response: if "considerably" the weight is 1; if "somewhat" the weight is 0.5. The diffusion index varies between -100 and 100. The EA index is constructed by weighting each country index by the outstanding loans of the country.

In the course of 2018, the amount of bank loans to non-financial corporations and households continued to pick up, albeit gradually, and the annual rate of change reached 3.9% for non-financial corporations and 3.2% for households at the end of 2018 (3.1% and 2.9%, respectively, in 2017) (Chart I.3.3, panels A and B). According to the *Bank Lending Survey*, demand momentum remained robust. Low level of interest rates were the main reason pointed out for the increase in demand across segments (non-financial corporations and households for housing and consumption), as well as, in the case of non-financial corporations, fixed investment needs and, for households, the favourable housing market outlook and consumer confidence.

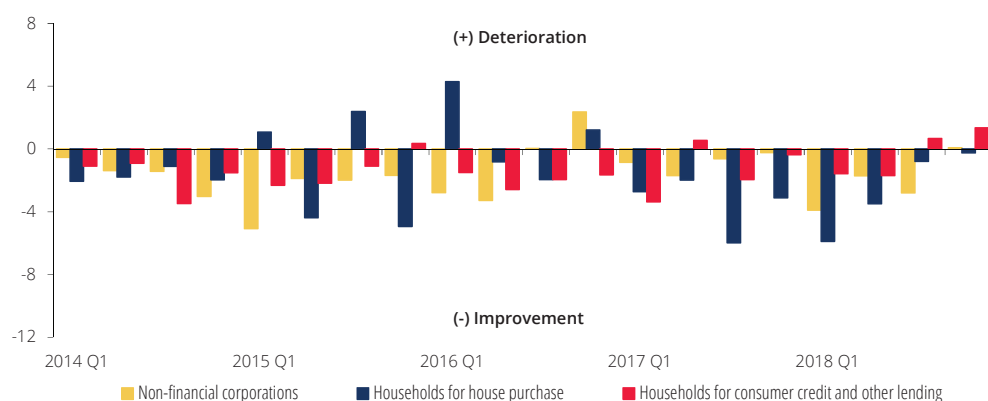
Chart I.3.3 • Loans in euro area countries | Annual rate of change, in percentage



Source: ECB. | Note: Annual growth rates of loans adjusted for sales and securitisation and other changes unrelated to financial transactions.

Developments in loans remained heterogeneous across euro area countries, with, most notably, an increased growth dispersion in loans to non-financial corporations. Banks indicated that credit standards had eased by the third quarter of 2018 for both non-financial corporations and households, in the case of housing loans. In credit to consumption loans, standards also eased in the first half of the year, as opposed to the second half (Chart I.3.4). As regards terms and conditions, margins on average loans to non-financial corporations and households continued to narrow, but to a lesser extent in the second half of the year.

Chart I.3.4 • Credit standards | Diffusion index



Source: ECB. | Note: The diffusion index is computed based on the *Bank Lending Survey* and is the difference between the weighted average of the share of the banks responding that credit standards have "tightened" and the share of banks reporting that they have "eased". The weights are according to the intensity of the response: if "considerably" the weight is 1; if "somewhat" the weight is 0.5. The diffusion index varies between -100 and 100. The EA index is constructed by weighting each country index by the outstanding loans of the country.

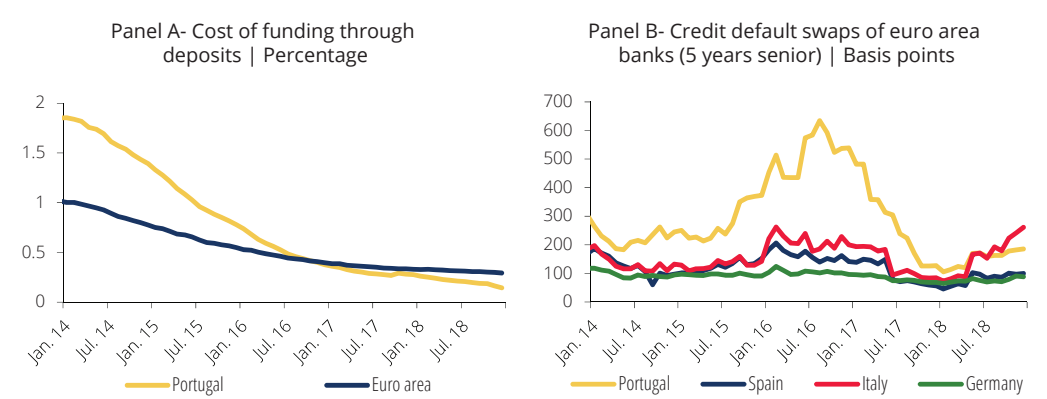
However, for riskier loans to non-financial corporations and in the consumer credit segment, banks have, in fact, stopped compressing margins. Pressures from the competition is a key factor when it comes to easing credit standards for loans to enterprises and households, while banks' risk tolerance has gradually decreased, becoming a tightening factor over the last quarter.

3.2 Portugal

The funding conditions of resident banks improved in 2018, although some signs of deterioration have emerged in wholesale debt markets in the course of the year

The funding conditions of Portuguese banks improved in 2018, chiefly as a result of lower cost of financing through deposits (Chart I.3.5, panel A). Furthermore, Portuguese banks have benefited from the monetary policy conducted by the ECB over the past few years, which made it possible for them to access long-term funds at particularly low rates. Conversely, and in line with other euro area countries, funding conditions through long-term debt securities deteriorated in the course of 2018. In particular, the spreads associated with credit default swaps of Portuguese banks widened, thereby ending the downward trend seen in 2016 and 2017 (Chart I.3.5, panel B). In line with developments in the cost of financing through deposits and credit default swaps, respondents to the *Bank Lending Survey* indicated improvements in retail funding and deteriorating conditions in market funding through bonds (Chart I.3.6). The deterioration in banks' market funding conditions is particularly relevant in the current environment, in which banks may need to borrow from the market to meet the new regulatory requirements.⁸

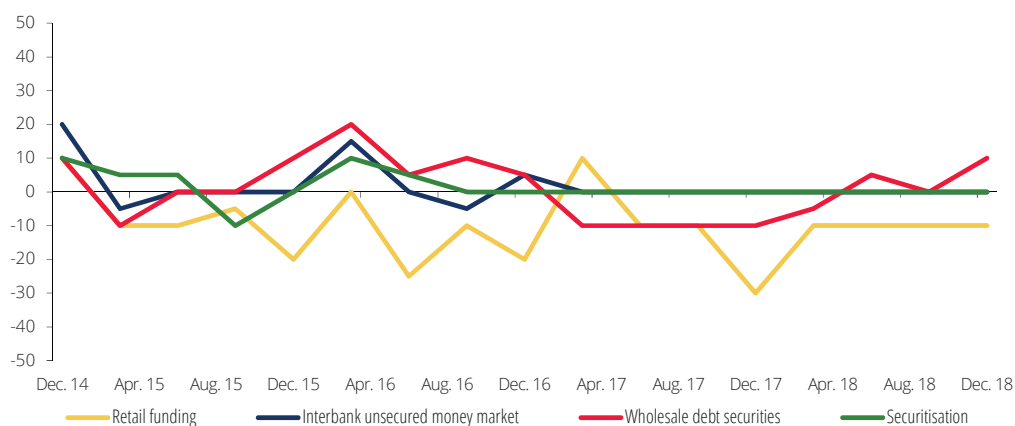
Chart I.3.5 • Funding conditions of resident banks



Source: ECB. | Notes: The cost of funding through deposits is computed as the weighted average of the interest rate associated with the various types of deposit (households and non-financial corporations) and their corresponding outstanding balances. The average interest rate associated with the outstanding amount of deposits is considered.

Source: Refinitiv. | Notes: The values presented correspond to an unweighted average of CDS spreads by country. The number of banks considered varies from country to country. Values at end of month.

8. See the Special issue, entitled “Amendment of the CRD IV-CRR: what is new?”, *Financial Stability Report*, December 2018.

Chart I.3.6 • Changes in the access to funding of resident banks | Diffusion index

Source: Banco de Portugal. | Notes: The diffusion index is computed based on the *Bank Lending Survey* and is the difference between the weighted sum of the percentage of "tightened" responses and the weighted sum of the percentage of "eased" responses. The weights are defined according to the intensity of the change in each of the directions: if "considerably" is 1 and if "somewhat" is 0.5. The diffusion index varies between -100 and 100. Values higher (lower) than zero translate into a deterioration (easing) of the financing conditions in the previous three months. The value zero corresponds to the "unchanged" situation. The "retail financing" diffusion index corresponds to a simple average of the diffusion indices of "short-term deposits (up to 1 year)" and "long-term deposits (over 1 year) and other retail "; the diffusion index of the "unsecured interbank money market" corresponds to a simple average of the "very short-term money market (up to 1 week)" and "short-term money market (more than 1 week)"; the spread index for "wholesale negotiated debt securities" corresponds to a simple average of the diffusion indices of "short-term debt securities (eg certificates of deposit or commercial paper)" and "average debt securities (including covered bonds)"; the "securitisation" diffusion index corresponds to a simple average of the "business loan securitisation" and "securitisation index for housing acquisition" indices.

The deteriorating conditions in banks' funding through debt securities are likely to be chiefly related to increased uncertainty about the policies adopted in a number of euro area countries, most notably Italy, rather than to developments in their economic and financial situation, which seems to have improved further in 2018.⁹ In December 2018 the ratio of credit overdue for households and non-financial corporations stood at 2.1% and 8.1% respectively (Chart I.3.7). The figures posted at the end of 2018 are in line with those seen in mid-2008, for households, and in the first quarter of 2012, for enterprises.

The improving quality in the corporate loan portfolio of resident banks in Portugal is also reflected in the expected loss in loans to non-financial corporations included in the portfolio, which has decreased by approximately 1.8 p.p. from the series peak at the end of 2013 (Chart I.3.8, panel A). The decrease in the expected loss seems to be mostly related to the current stage of the business cycle. However, looking at the corporate loan portfolio by risk quartile, i.e. excluding the effect of the business cycle phase on credit quality, it becomes clear that banks have sought to direct their loan portfolios towards lower-risk enterprises (Chart I.3.8, panel B).

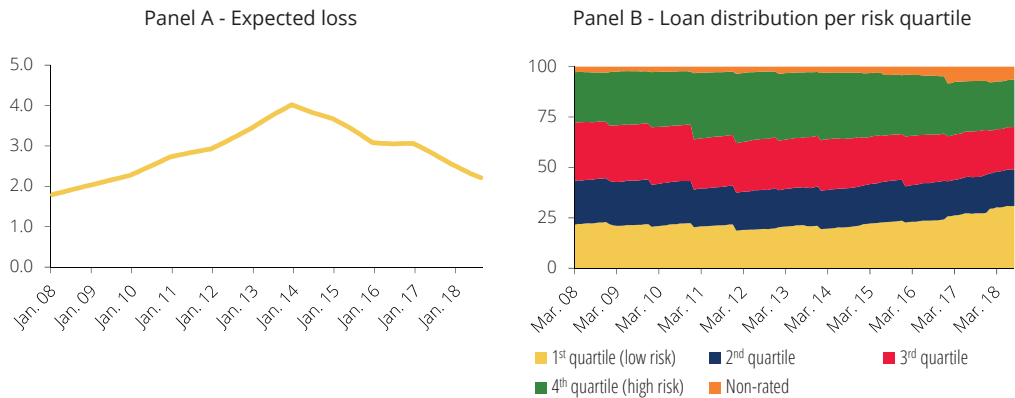
9. For more details, see *Financial Stability Report*, December 2018.

Chart I.3.7 • Ratio of overdue loans | Percentage



Source: Banco de Portugal. | Notes: The ratio of overdue loans is defined as total loans overdue for more than 30 days as a percentage of total loans (adjusted for securitisation operations). This ratio is obtained from the Monetary and Financial Statistics compiled by Banco de Portugal.

Chart I.3.8 • Expected loss and distribution of loans to non-financial corporations by risk quartile | Percentage



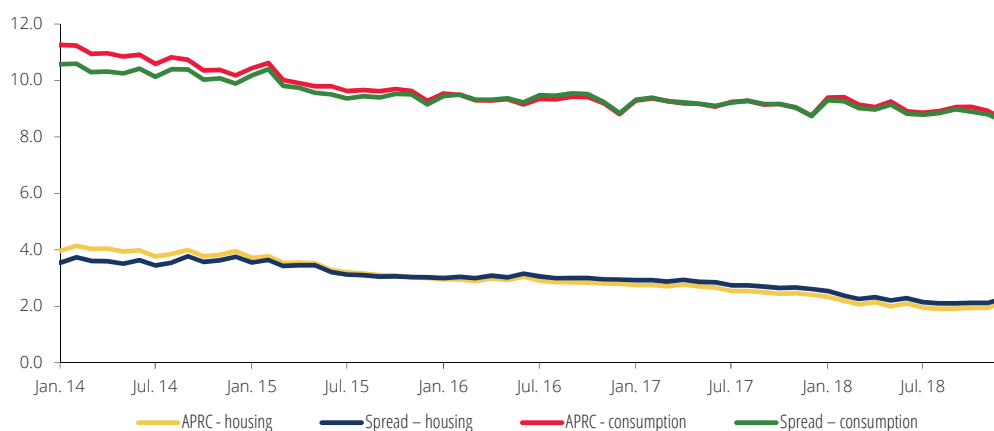
Source: Banco de Portugal. | Notes: The expected loss is computed as the sum of the product between the exposure of the banking system to each non-financial corporation, its probability of default and the loss given default associated to the loan. The probability of default of loans for which sufficient accounting information is not available is not computed (non-rated loans). Only regular loans were considered. The probability of default is estimated using the methodology presented in Antunes, Gonçalves and Prego (2016) "Revisiting Probabilities of Default of Companies", Banco de Portugal *Economic Studies*, vol. 2, paragraph 2, April 2016. A recovery rate of 40% is assumed for all loans. The credit risk quartiles are defined using the probability of default of the company at each moment in time. Last observation: August 2018.

⋮ Interest rates on new loans to households decreased

Interest rates on new bank loans to households decreased in 2018 (Chart I.3.9). In August and December 2018 respectively, the annual percentage rate of charge (APRC) on loans for house purchase and consumer credit reached a trough in the series that started in 2003 (1.9% and 8.6%). The drop in the interest rate was more marked in loans for house purchase than in consumer credit and was mostly due to a reduction in spreads applied by banks, given that interbank interest rates used as benchmark remained stable. In the case of loans for house purchase, the average spread in 2018 was 2.2% (2.8% in 2017), close to that seen in 2010. In the case of consumer credit, the average spread in 2018 stood at 9.0% (9.2% in 2017), in line with its historical average. The narrowing spreads on loans

for house purchase are in line with what banks reported to the *Bank Lending Survey*, i.e. a reduction in the spread on both medium-risk and high-risk loans. This reduction seems to be chiefly related to competitive pressures.

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



Sources: Refinitiv and Banco de Portugal. | Notes: The APRC (Annual Percentage Rate of Charge) is the total cost of the loan, i.e. the overall costs, including interests and other costs paid to acquire the loan. The APRC is weighted by loan amounts. The spread is a weighted average of the difference between the APRC and the interest rate used as a benchmark for each interest rate fixation period. The benchmark interest rates are the 6-month Euribor (fixation period below 1 year), 1-year Euribor (fixation period between 1 and 5 years) and the 5-year swap rate (fixation period above 5 years).

..... New bank loans to households stabilised in the second half of 2018, after several years of growth

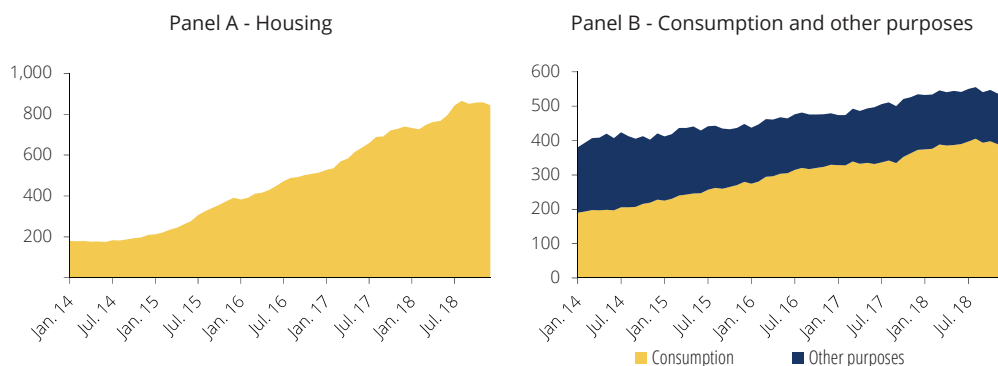
The amount of new bank loans to households for house purchase stabilised in the second half of 2018, following robust growth in the first half (Chart I.3.10, panel A). This stabilisation took place on the back of several years of continuous growth. The amount recorded in the second half of 2018 was relatively close to its historical average since 2003 and significantly below that seen prior to the international financial crisis. The amount of new consumer credit and other lending to households remained stable throughout 2018 (Chart I.3.10, panel B). This was true for consumer credit as well as for lending for other purposes. In contrast to loans for house purchase, new consumer credit is slightly above that seen prior to the financial crisis. Conversely, new loans to households for other purposes stabilised around historically very low levels.

According to the *Bank Lending Survey*, demand for loans to households rose markedly in 2018 (Chart I.3.11). From the second half of the year onwards, the increase in demand was accompanied by a tightening in credit standards, which, according to respondents, is associated with regulatory and/or supervisory action.¹⁰ Tighter credit standards are likely to have resulted in more stringent overall terms and conditions, narrower loan-to-value (LTV) ratios and shorter maturities. In the case of loans for house purchase, the increase in demand was due to housing market prospects, including expected price developments, improved consumer confidence and the general level of interest rates.

10. In this regard, Banco de Portugal decided to implement a macroprudential measure as of 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.

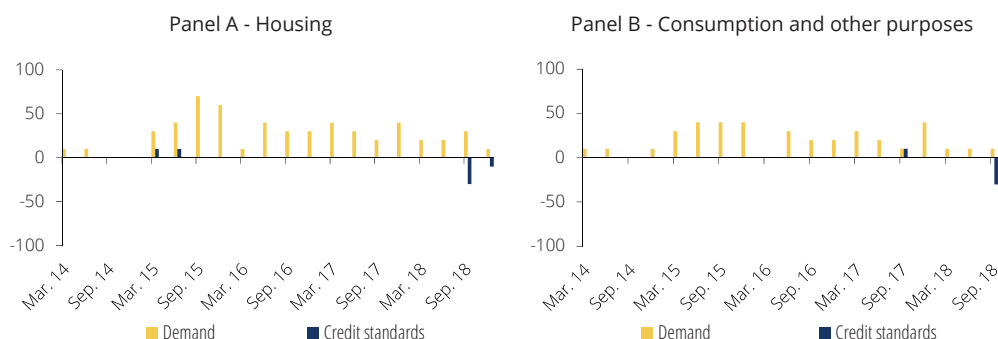
In the past two surveys, respondents have reported that they expected demand to decrease over the coming months. In the consumer credit segment, banks reported that the increase in demand was likely to be due to improvements in consumer confidence and interest rates, as well as higher spending on consumer durable goods.

Chart I.3.10 • New loans granted by resident banks to households | EUR million, 6-month moving average



Source: Banco de Portugal.

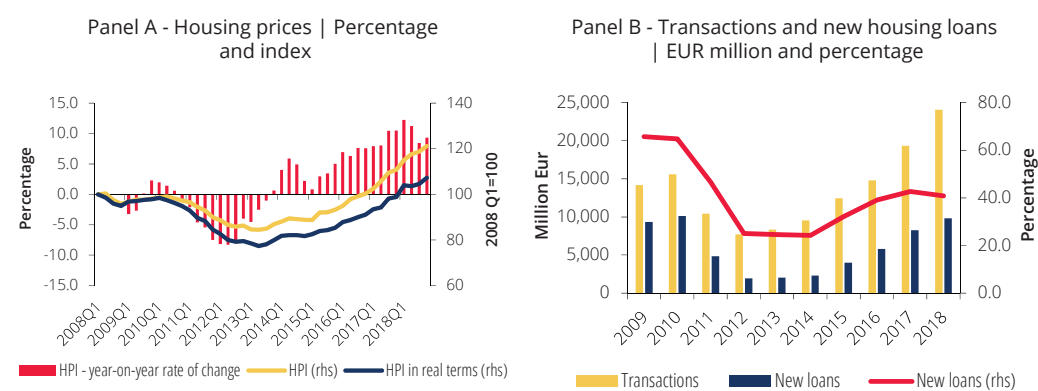
Chart I.3.11 • Demand and supply of loans granted by resident banks to households | Diffusion index



Source: Banco de Portugal. | Notes: The diffusion index is computed based on the *Bank Lending Survey*. In the case of demand, the diffusion index is the difference between the weighted sum of the percentage of "increase" responses and the weighted sum of the percentage of "decrease" responses. In the case of supply (credit standards), the diffusion index 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" is 1 and if "somewhat" is 0.5. The diffusion index varies from -100 to 100. Values higher (lower) than zero translate an increase (decrease) in demand and an easing (tightening) of credit standards. The value zero corresponds to the "unchanged" situation.

Up to the first half of 2018, new loans for house purchase grew on the back of strong momentum in the real estate market. This momentum was reflected in price developments, with a year-on-year rate of change of 8.5% in real terms, in December 2018 (Chart I.3.12, panel A), and in the volume of transactions, which grew by 24% (Chart I.3.12, panel B). However, the price increase was less pronounced in the second half of the year, with the year-on-year rate of change moving down from 11.2% to 9.3% between the second and the fourth quarters of 2018. The ratio of new loans for house purchase to the total amount of transactions of housing units in Portugal decreased by 2 p.p. from 2017, to stand at 41% at the end of 2018. This ratio is currently well below its level prior to 2011.

Chart I.3.12 • Prices and transactions in the housing market

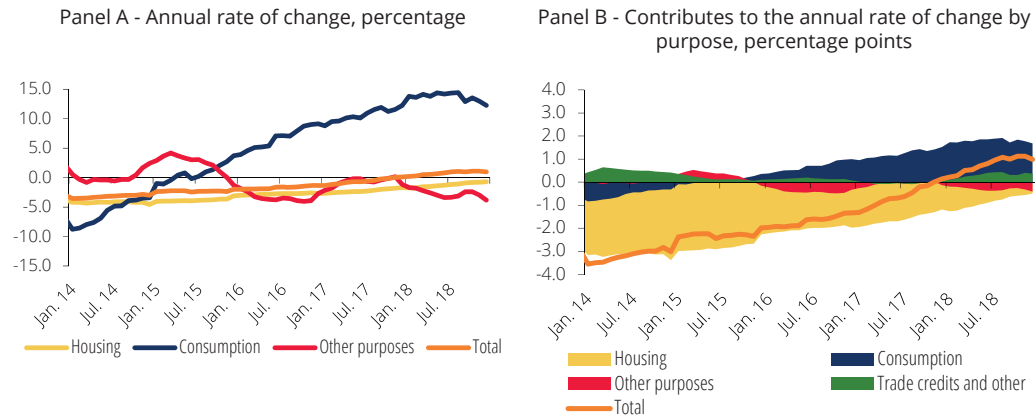


Household debt as a percentage of disposable income continued to decrease, albeit at a slower pace

The annual rate of change in total credit to households stabilised at around 1.0% at the end of 2018 (Chart I.3.13, panel A). Consumer credit made the largest contribution to total credit growth, posting an annual rate of change of 12.3% in December 2018 (Chart I.3.13, panel B). Conversely, the rate of change in loans to households for house purchase was -0.7%. as a result of a high volume of repayments, similarly to 2017 (see Box 2 in the *Economic Bulletin*, May 2018). However, while the annual rate of change in loans for house purchase is still moving upwards, the rate of change in consumer credit has declined somewhat. This seems to be mainly due to the fact that new consumer credit has been stable since late 2017, while new loans to households for house purchase only started to stabilise in the second half of 2018.

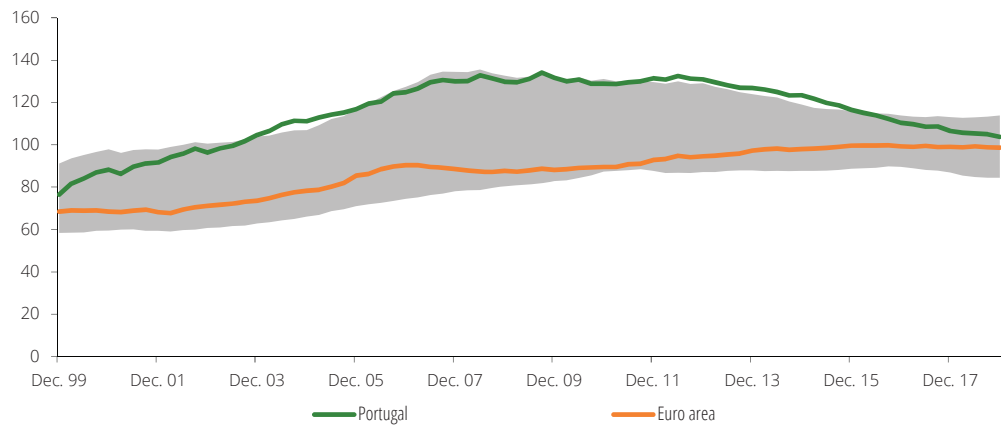
Although the annual rate of change in total credit returned to positive territory for the first time since the first quarter of 2011, household debt as a percentage of disposable income continued to decrease, moving closer to the euro area average (Chart I.3.14). However, this indicator has declined in a gradually less marked manner.

Chart I.3.13 • Total credit to households



Source: Banco de Portugal. | Notes: Annual rates of change are based on the relation between end-of-month outstanding amounts (adjusted for securitisation operations) and monthly transactions. Monthly transactions correspond to the difference in the end-of-month outstanding amounts adjusted for reclassifications, write-offs/write-downs, exchange rate and price revaluations, and any other variations that do not correspond to financial transactions.

Chart I.3.14 • Households' debt | Percentage of disposable income



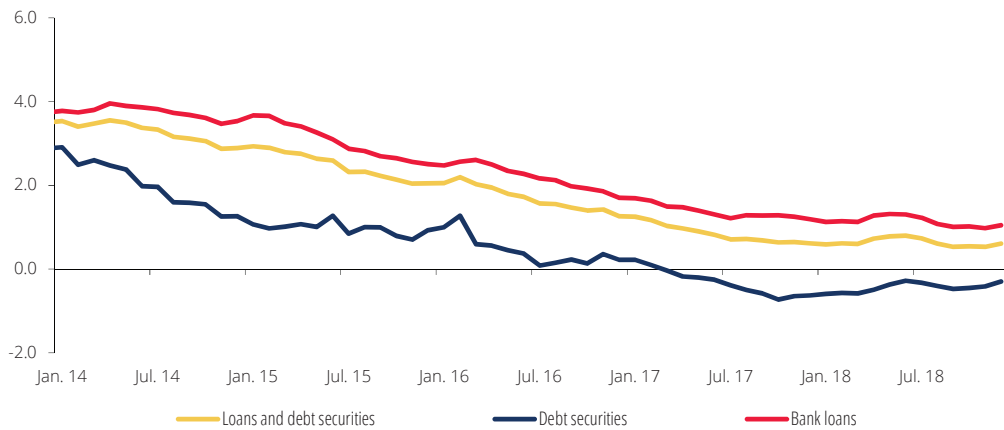
Sources: Eurostat and Banco de Portugal calculations. | Notes: The debt aggregate considered comprises loans, debt securities and trade credits (non-consolidated amounts). The amount of disposable income corresponds to the value of the year ended in the respective quarter. Euro area figures correspond to the median of those observed for the 12 countries belonging to the euro area in January 2002, excluding the Luxembourg. The shaded area represents the interquartile range.

Another way to assess developments in households' financial situation is by gauging their capacity to service debt. The aggregate value of instalments of loans granted to households, which includes interest payment and repayments of principal, increased somewhat more markedly than debt. Consequently, and by contrast to the ratio of debt to disposable income, the ratio of the aggregate value of instalments to repay debt to disposable income stabilised. The increase in the overall value of instalments was chiefly due to instalments on consumer credit. Such instalments, which are associated with shorter maturities, are more affected by increases in the stock of debt than instalments on loans for house purchase. Behind the increase in instalments on consumer credit was both the number of instalments and the average amount of instalments. The aggregate value of instalments on loans for house purchase was relatively stable. Nevertheless, in line with that seen since 2011, the number of instalments has decreased, being offset by higher average instalments in 2018.

∴ The cost of financing firms stabilised

The cost of financing non-financial corporations through debt instruments, in real terms, remained stable at historically low levels throughout 2018 (Chart I.3.15). This stabilisation followed several years of decline. Although in aggregate terms the real cost of financing firms remained relatively stable, the cost of financing through debt securities rose somewhat in 2018, by contrast to the slight reduction in the real cost of financing through loans.

Chart I.3.15 • Cost of funding of non-financial corporations (loans and debt securities), in real terms | Percentage

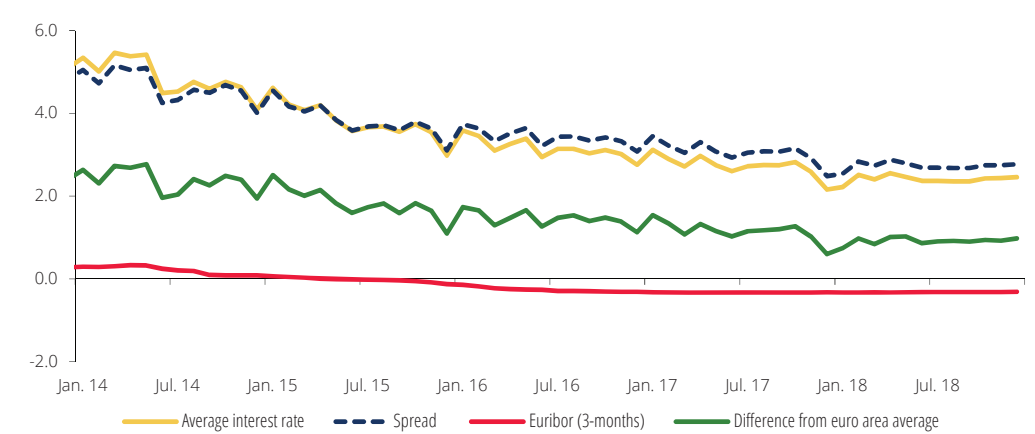


Sources: Banco de Portugal, Barclays, Consensus Economics and Refinitiv. | Notes: The cost of funding with bank loans, short-term debt securities and long-term debt securities is measured, respectively, by the interest rates on new loans granted by resident banks, interest rates on commercial paper and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

∴ Interest rates on new loans to firms stabilised after several years of decline

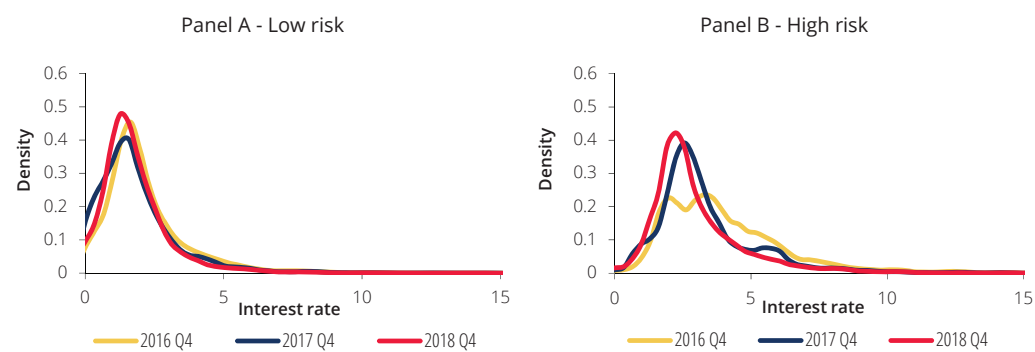
Nominal interest rates on new bank loans to non-financial corporations were relatively stable at around 2.4%, interrupting the downward trend that started in late 2011 (Chart I.3.16). Despite a stabilisation in the average interest rate on new loans, respondents to the *Bank Lending Survey* reported that the spread on medium-risk firms had narrowed. This is likely to have been reflected in lower interest rate dispersion according to risk (Chart I.3.17). Nevertheless, the difference between average interest rates in each risk quartile remained stable in 2018, with loans in the first quartile posting a considerably lower interest rate than those in other quartiles (see Box 2).

Chart I.3.16 • Interest rates on new loans granted by resident banks to non-financial corporations | Percentage and percentage points



Sources: ECB, Bloomberg and Banco de Portugal. | Notes: Average interest rates are based on new loans by initial fixation period, weighted by new loan amounts in each period. The spread was calculated using a 3-month Euribor rate.

Chart I.3.17 • Distribution of interest rates on new loans granted by resident financial institutions to private non-financial corporations by credit risk profile | Density



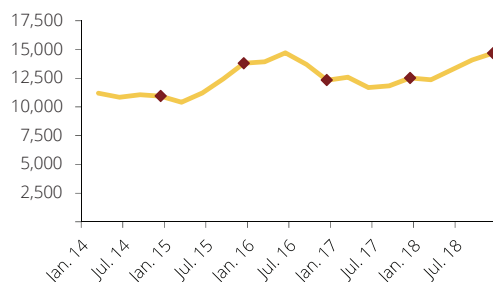
Source: Banco de Portugal. | Notes: Interest rates are weighted by loan amounts. The sample includes for-profit private non-financial corporations. Low (high) risk corporations lie in the first (last) quartile of the credit risk distribution. Credit risk is measured by the Z-score estimated according to Antunes, Gonçalves and Prego, "Firm default probabilities revisited", Banco de Portugal *Economic Studies*, Vol. 2, No 2, April 2016.

⋮ New bank credit to enterprises grew

New bank credit (loans and securities) to firms with contractual maturity of over one year increased significantly in 2018 (Chart I.3.18), after a stabilisation in 2017. Likewise, the annual rate of change in bank credit increased markedly, going from -0.7% in December 2017 to 2.4% in December 2018 (Chart I.3.19).

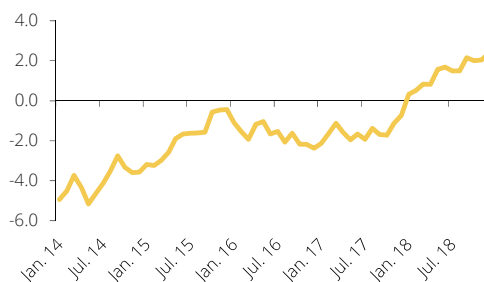
According to the *Bank Lending Survey*, enterprises seem to have stepped up their demand for loans, most notably long-term loans (Chart I.3.20). In this case, greater demand seems to be particularly linked to an increase in borrowing needs to fund investment (Chart I.3.21). On the supply side, respondents did not report any changes to credit standards.

Chart I.3.18 • New credit granted by resident banks to non-financial corporations with contractual maturity above 1 year
| EUR million (accumulated 12 months)



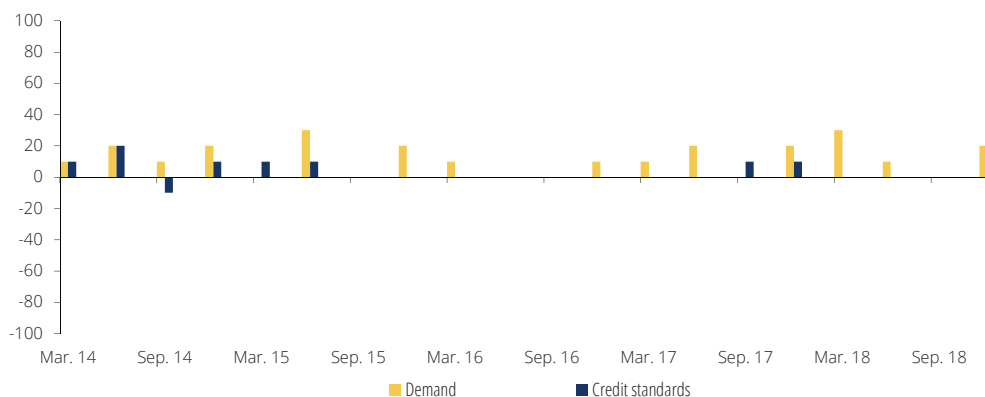
Source: Banco de Portugal. | Notes: Bank credit is defined as the aggregate of bank loans and securities held by resident banks. Only new credits with a contractual term greater than or equal to 365 days are presented in order to mitigate the effect of frequent refinancing of short maturity credits. The exclusion of loans with longer contractual terms (between 1 and 5 years) would not qualitatively change the profile of the series presented. Debt securities are considered new whenever a particular security becomes part of the bank's balance sheet. The diamonds indicate the month of December of each year.

Chart I.3.19 • Bank credit to non-financial corporations | Annual rate of change. percentage



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

Chart I.3.20 • Demand and supply of loans granted by resident banks to non-financial corporations | Diffusion index



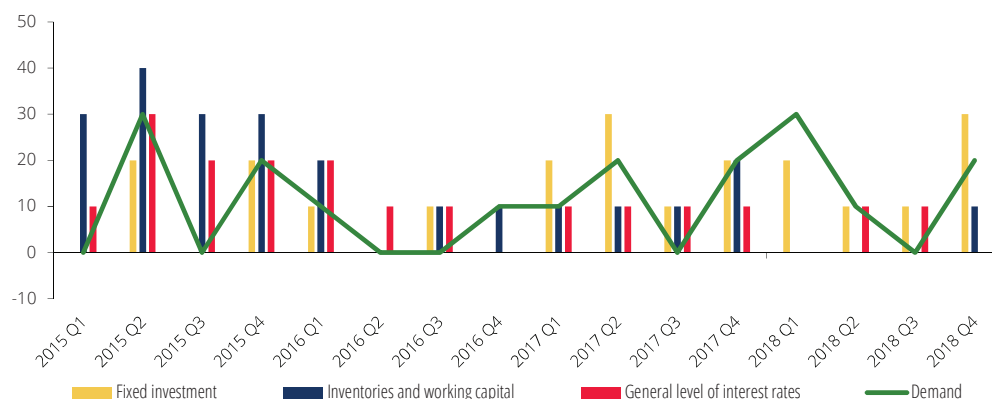
Source: Banco de Portugal. | Notes: The diffusion index is computed based on the *Bank Lending Survey*. In the case of demand, the diffusion index is the difference between the weighted sum of the percentage of "increase" responses and the weighted sum of the percentage of "decrease" responses. In the case of supply (credit standards), the diffusion index 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" is 1 and if "somewhat" is 0.5. The diffusion index varies from -100 to 100. Values higher (lower) than zero translate an increase (decrease) in demand and an easing (tightening) of credit standards. The value zero corresponds to the "unchanged" situation.

∴ New bank credit grew across most sectors

New bank credit grew across most of the main sectors of activity, excluding electricity, gas and water, for which it declined markedly (Chart I.3.22). The increase in new bank credit was very sharp in the case of the construction and real estate activities and the trade, accommodation and food services sectors. Furthermore,

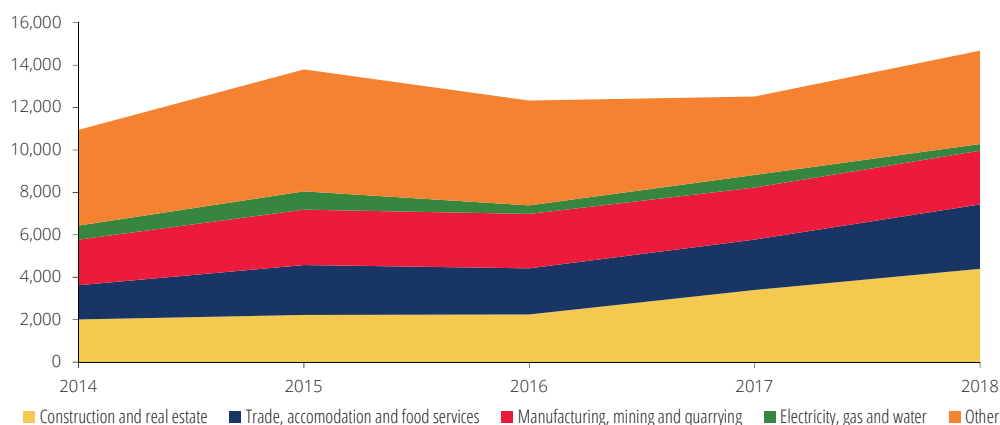
new bank credit to head offices grew considerably.¹¹ New credit to manufacturing and mining grew slightly.

Chart I.3.21 • Evolution and determinants of demand for loans by non-financial corporations | Diffusion index



Source: Banco de Portugal. | Notes: The diffusion index is calculated on the basis of the Bank Lending Survey and is the difference between the weighted sum of the percentage of "increase" responses and the weighted sum of the percentage of "reduction" responses. The weights are defined according to the intensity of the change in each of the directions: if "considerable" is 1 and if "slight" is 0.5. The diffusion index ranges from -100 to 100. Higher values (lower) than zero translate an increase (decrease) in demand or a positive (negative) contribution to demand variation. The value zero corresponds to the "unchanged" situation.

Chart I.3.22 • New credit granted by resident banks to non-financial corporations with contractual maturity above 1 year by sector of activity | EUR million (accumulated 12 months)

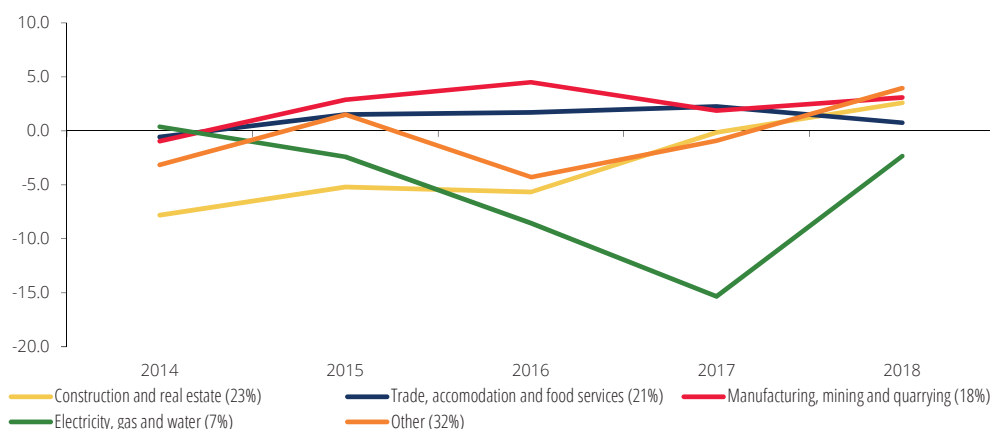


Source: Banco de Portugal. | Notes: Bank credit is defined as the aggregate of bank loans and securities held by resident banks. Only new credits with a contractual term greater than or equal to 365 days are presented in order to mitigate the effect of frequent refinancing of short maturity credits. Debt securities are considered new whenever a particular security becomes part of the bank's balance sheet.

11. Head offices are firms whose main activity is to supervise and manage units of an economic group for which most gross value added is generated by the non-financial sector. Their activities include strategic and organisational planning, as well as the provision of administrative services to firms within the group. The head office sector does not include holding companies whose main activity is to hold shares and other equity in firms within an economic group, which are classified as financial auxiliaries and included in the financial sector.

In line with developments in new bank credit, most sectors of activity posted a positive annual rate of change in bank credit (Chart I.3.23). This excludes the electricity, gas and water sector, which, similarly to that seen over the past few years, has once again recorded a negative rate of change. However, this reduction stood well below that seen in 2017. Conversely, in the construction and real estate activities sector, the annual rate of change returned to positive territory for the first time since the first quarter of 2010.

Chart I.3.23 • Bank credit by sector of activity | Annual rate of change, percentage



Source: Banco de Portugal. | Notes: Bank credit is defined as the aggregate of bank loans and securities held by resident banks. Annual rates of change are based on the relation between end-of-month outstanding amounts (adjusted for securitisation operations) and monthly transactions. Monthly transactions correspond to the difference in the end-of-month outstanding amounts adjusted for reclassifications, write-offs/write-downs, exchange rate and price revaluations, and any other variations that do not correspond to financial transactions. Whenever relevant, figures are additionally adjusted for sales of credit portfolios. Values in parenthesis correspond to each sector weight on the stock of bank credit.

∴ New bank credit increased, particularly for lower-risk firms

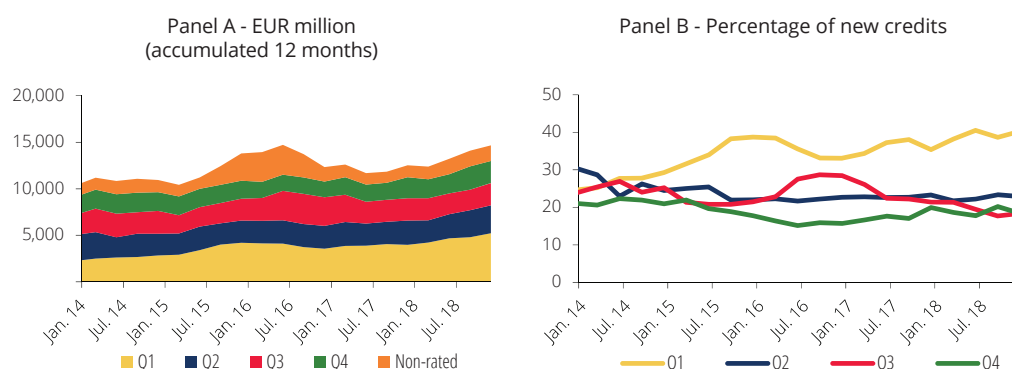
New bank credit to firms continued to show mixed developments, according to risk profile (Chart I.3.24, panel A). Therefore, while new lower-risk bank credit rose very sharply, most notably in the first risk quartile, new higher-risk credit grew only moderately. Consequently, and in line with that seen over the past few years, the weight of new lower-risk credit in total new credit granted by the banking system increased (Chart I.3.24, panel B).

∴ The stock of total credit to non-financial corporations declined slightly

Developments in the stock of credit granted by a sector is determined by developments in net transactions, i.e. the difference between new loans and repayments, as well as by specific events, such as write-offs and the sale of loans. The year-on-year rate of change in the stock of total credit to non-financial corporations, which covers bank credit, financing through loans and securities held by other resident financial institutions, loans, securities and trade credits from other residents and non-residents, stood at -0.9% in December 2018 (0.7% at the end of 2017) (Chart I.3.25). This decrease in the stock of total credit to non-financial corporations takes place against a background where resident banks experienced large write-offs. In line with 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 residents declined. In 2018, however, both the positive contribution of the

non-resident sector and the negative contribution of the resident financial sector declined. The year-on-year rate of change in total credit granted by the non-resident sector and the resident financial sector stood at 2.4% and -1.6% respectively.¹² The stock of credit in the portfolio of resident financial institutions decreased against a background where the annual rate of change in bank credit returned to positive territory for the first time since the first half of 2011 (Chart I.3.19). While the year-on-year rate of change is determined by the change in stocks of credit, the aim of the annual rate of change is to measure the change in stocks due to net transactions, adjusted for a set of effects, such as the sale of credit portfolios and write-offs. These effects were particularly relevant in 2018, which explains the substantial 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 2018 for the first time since 2011.

Chart I.3.24 • New credit granted by resident banks to non-financial corporations with contractual maturity above 1 year by risk quartile



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 365 days 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.

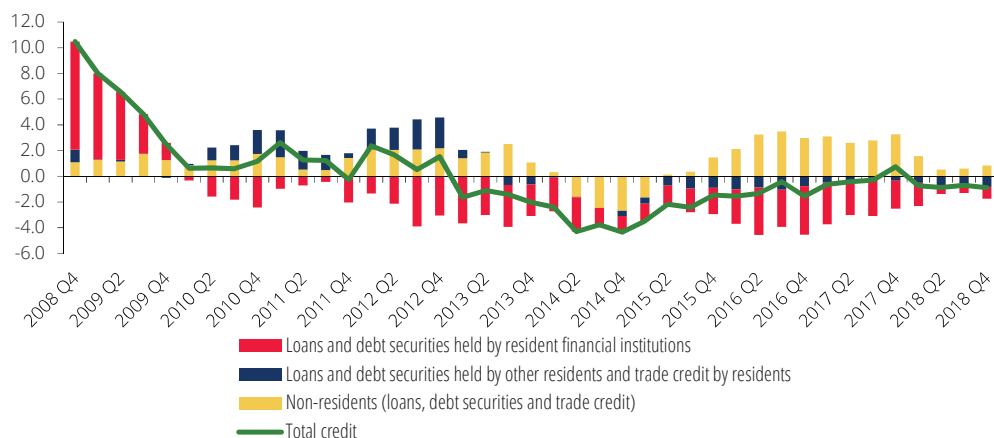
Corporate indebtedness decreased further

As has been the case since 2012, the ratio of debt to assets (leverage ratio) of Portuguese firms continued to edge downwards, to stand at around 60% at the end of 2018 (Chart I.3.26, panel A). This decrease occurred on the back of a broadly-based narrowing of the leverage ratio of euro area firms. Nevertheless, the leverage ratio of Portuguese firms has converged to the euro area average since 2015. However, this convergence has been fairly gradual, and Portuguese firms have continued to be substantially more leveraged than the median.¹³ The very gradual deleveraging of firms, measured by the leverage ratio, contrasts with developments in the debt-to-GDP ratio, which has narrowed very markedly, to stand very close to the euro area median at the end of 2018 (Chart I.3.26, panel B). However, this ratio has decreased chiefly as a result of an increase in GDP.

12. The banking sector accounts for 78% of the stock of credit (loans and securities) granted by the resident financial sector. The year-on-year rate of change in bank credit was -2.9% in December 2018.

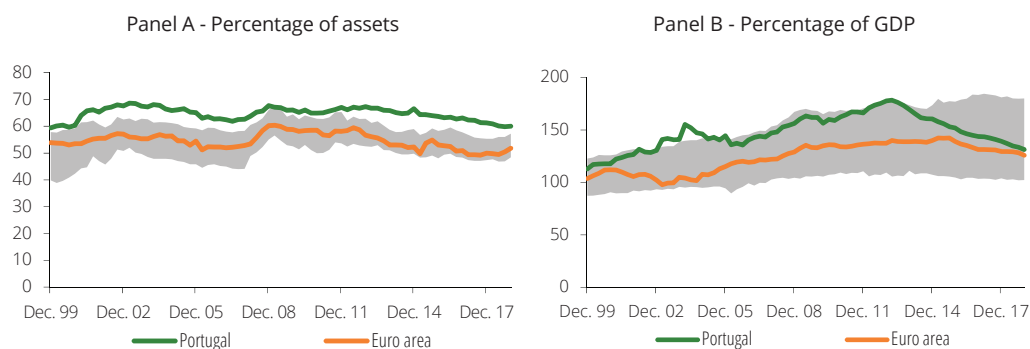
13. For a breakdown of the drivers of developments in the leverage ratio of Portuguese firms from 2011 to 2016, see Box 2 of the Special issue in the May 2018 issue of the *Economic Bulletin*. For a comparison of the deleveraging process in Portugal, Spain and Italy, see Box 6 of the October 2018 issue of the *Economic Bulletin*.

Chart I.3.25 • Total credit to non-financial corporations by funding sector | Year-on-year rate of change and contributes, in 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. No adjustments are done regarding sales, reclassifications, write-offs and exchange rate and price revaluations.

Chart I.3.26 • Non-financial corporations' debt



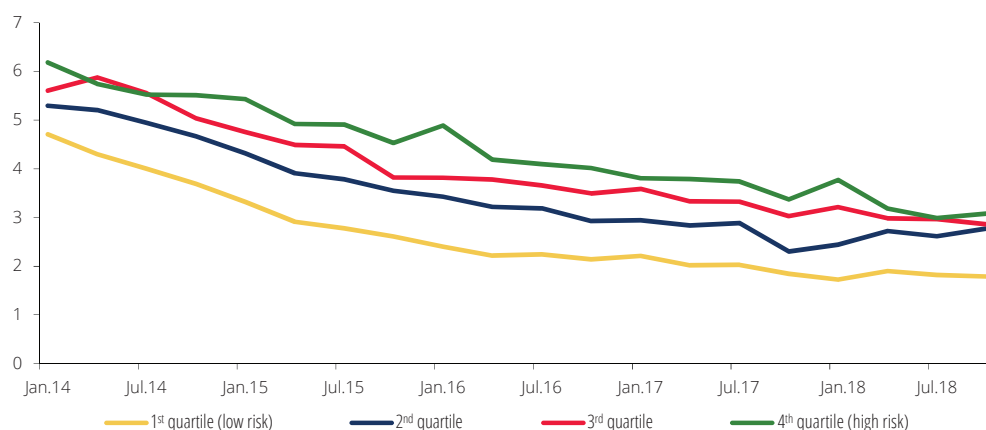
Sources: ECB and Eurostat. | Notes: The debt aggregate considered is composed by loans, debt securities, insurance technical reserves, trade credits and other debits and credits (non-consolidated). Euro area figures correspond to the median of those observed for the 12 countries belonging to the euro area in January 2002, excluding the Luxembourg. The shaded area represents the interquartile range.

Box 2 • Interest rates on new loans to enterprises, by risk profile

Interest rates on new loans granted by resident financial institutions to non-financial corporations stabilised in 2018, after a downward trend in previous years. The aim of this box is to look at the link between risk profile and maturity as regards developments in interest rates on new loans.

Turning to developments in average interest rates on new loans, Chart C2.1 shows a downward trend, followed by stabilisation, for both low-risk and high-risk firms.¹⁴ Interest rates have also differed according to the firm's profile risk, although this distinction did not vary significantly during the period under review.

Chart C2.1 • Average interest rates on new loans to NFC by credit risk profile | Percentage



Source: Banco de Portugal. | Note: Average interest rates weighted by loan amounts.

The number of new loans is similar across risk quartiles (which provides a more solid comparison of rates) and, to a large extent, constant over time (although with some changes to its composition; see Table C2.1).

It is also important to understand how sensitive results are to the distinction between loans with different maturities, particularly between those with shorter maturities (up to 365 days) and those with longer maturities (365 days or more). Chart C2.2 shows that developments in interest rates on loans with a maturity of up to 365 days, by risk profile, are similar to aggregate developments (Chart C2.1). In turn, developments in the interest rate on loans with a maturity of 365 days or more do not mirror such a clear distinction by risk profile. Low-risk firms (first quartile) took loans with a typically lower interest rate than other firms. However, average interest rates for firms in the second, third and fourth quartiles (with greater risk) do not clearly differ amongst themselves and, in fact, overlap at several points in time. These results can be explained, inter alia, by the fact that financial institutions have access to more detailed information on the borrowing firm and the purpose of the loan when granting credit with longer maturities.¹⁵

14. Credit risk assessment based on the Z-score, estimated in accordance with the methodology presented in the article by Antunes, Gonçalves and Prego (2016), "Firm default probabilities revisited", Banco de Portugal *Economic Studies*, vol. 2, No 2, April 2016. Quartiles are set at any point in time for the population of enterprises that have taken at least one loan with a resident credit institution on the basis of the Central Credit Register (CCR).

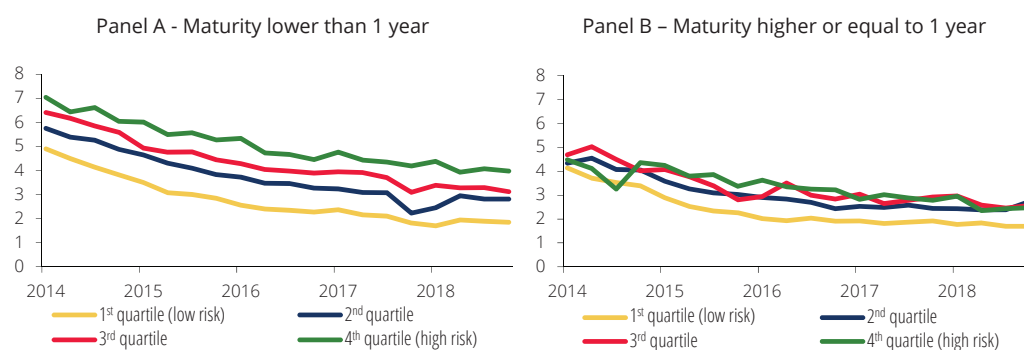
15. The presence of collateral does not seem to be linked to greater/lower differentiation among interest rates by the firm's risk profile.

Table C2.1 • Number of new loans to NFCs granted by resident financial institutions | Thousands

	2014	2015	2016	2017	2018
Number of loans granted					
1 st Q (low risk)	133.2	152.5	135.3	144.6	156.6
2 nd Q	127.5	132.4	106.2	99.7	94.0
3 rd Q	117.4	124.1	115.8	101.3	103.3
4 th Q (high risk)	83.6	86.1	94.6	80.5	72.3
No rating	15.1	22.0	24.4	21.7	25.4
Number of loans granted with maturity higher than or equal to 1 year					
1 st Q (low risk)	4.0	6.4	10.9	13.0	12.3
2 nd Q	3.4	4.7	6.5	7.7	10.0
3 rd Q	3.3	3.6	5.8	7.9	9.0
4 th Q (high risk)	3.0	2.9	4.1	4.9	5.3
No rating	0.8	3.2	5.6	3.7	3.3

Source: Banco de Portugal.

Chart C2.2 • Average interest rates on new loans to NFC by credit risk profile for loans with maturities lower and higher than 1 year | Percentage



Source: Banco de Portugal. | Note: Average interest rates weighted by loan amounts.

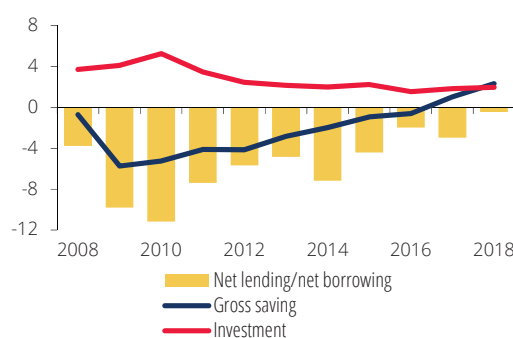
As such, interest rates only differ by risk profile for loans with short maturities, and less clearly so for loans with long maturities.

4 Public finances

Reduction of the general government deficit in a context of broadly neutral fiscal policy stance

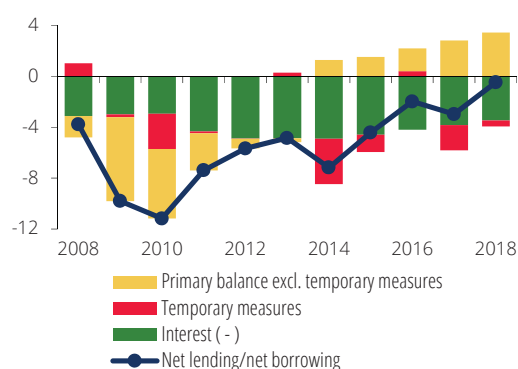
In 2018, the general government sector recorded a deficit of 0.5% of GDP, corresponding to a historically low level (Charts I.4.1 and I.4.2). The deficit was lower than official estimates published by the Ministry of Finance (1.0% of GDP in the State Budget for 2018, revised to 0.7% in the Stability Programme for 2018-22 and unchanged in the State Budget for 2019), as well as the latest estimate published by the European Commission last autumn (0.7% of GDP).

Chart I.4.1 • Net lending/net borrowing of general government
| In percentage of GDP



Source: Statistics Portugal.

Chart I.4.2 • General government primary balance and interest expenditure
| In percentage of GDP



Sources: Statistics Portugal (Banco de Portugal calculations). | Note: Temporary measures are identified as per the ESCB guidelines.

Compared with the previous year, the fiscal balance in 2018 registered an improvement of 2.5 p.p. of GDP (Table I.4.1). This reflected the fact that the adverse impact of temporary measures¹⁶ was considerably milder than in 2017. Indeed, in 2017, the capital injection into Caixa Geral de Depósitos affected the general government balance by 2% of GDP.¹⁷ In 2018, temporary measures contributed 0.5% of GDP to reduce the balance, of which 0.4% refer to the capital injection from the Resolution Fund into Novo Banco, following the activation of the contingent capital mechanism.¹⁸

Excluding the contribution of temporary measures, the general government deficit fell by 1.0 p.p. of GDP, of which 0.5 p.p. reflected the deficit-decreasing contribution of economic activity (assessed

16. The classification of temporary measures follows ESCB rules.

17. In addition to the capital injection into Caixa Geral de Depósitos, the partial recovery of a guarantee previously granted by the State to Banco Privado Português (0.04% of GDP) is also considered a temporary measure with an impact on the fiscal balance of 2017.

18. In addition to the capital injection into Novo Banco, the total effect of temporary measures on the 2018 general government accounts also includes the following operations: increases in expenditure associated with compensation payments and reconstruction operations as a result of the 2017 wildfires, as well as a reinforcement of prevention measures (0.1% of GDP); expenditure associated with a compensation payment as a result of the Supreme Court of Justice's ruling on the concession of a plot of land, including late payment interest (0.05% of GDP); receipt of an additional amount referring to the partial recovery of the guarantee granted by the State to Banco Privado Português (-0.08% of GDP).

using the methodology adopted by the European System of Central Banks – ESCB¹⁹). Thus, in 2018, the structural balance (cyclically adjusted and corrected for the total impact of temporary measures) increased by 0.5 p.p. of potential GDP²⁰ (Table I.4.1; Chart I.4.3). Part of this result was due to a fall in the debt servicing burden (0.3 p.p. of potential GDP), meaning that in 2018 the structural primary balance as a ratio to potential GDP registered an increase by 0.2 p.p., pointing to broadly neutral fiscal policy stance, similar to that observed, on average, in recent years.

Table I.4.1 • Main fiscal indicators | In percentage of GDP

	2014	2015	2016	2017	2018	2018-17 Change
Overall balance	-7.2	-4.4	-2.0	-3.0	-0.5	2.5
Interest expenditure	4.9	4.6	4.2	3.8	3.5	-0.4
Primary balance	-2.3	0.2	2.2	0.9	3.0	2.1
Structural indicators (in percentage of potential GDP)						
Structural balance ^(a)	-1.4	-1.6	-1.5	-0.9	-0.4	0.5
Structural primary balance	3.3	2.9	2.6	2.9	3.1	0.2
Structural Revenue	44.6	43.8	42.4	42.7	43.5	0.8
Structural primary expenditure	41.3	40.9	39.8	39.8	40.4	0.6
Public debt	130.6	128.8	129.2	124.8	121.5	-3.3
Change in public debt (in pp)	1.6	-1.8	0.5	-4.5	-3.3	
(-) Primary balance	2.3	-0.2	-2.2	-0.9	-3.0	
Differential between the effects of interest and of GDP growth	2.8	-0.3	-0.4	-1.6	-0.9	
Deficit-debt adjustments	-3.5	-1.4	3.1	-2.0	0.6	
<i>Memo:</i>						
Temporary measures ^(a)	-3.6	-1.4	0.4	-2.0	-0.5	1.5

Sources: Statistics Portugal (Banco de Portugal calculations). | Notes: (a) Structural figures are adjusted for the cycle and the effects of temporary measures. The cyclical component and temporary measures are gauged by Banco de Portugal in line with the methodology and definitions adopted in the ESCB. For further details, see Braz et al. (2019).

The evolution of the structural primary balance in 2018 is underpinned by an increase in total structural revenue as a ratio of potential GDP, albeit to a level that remains below than that recorded at the end of the Economic and Financial Assistance Programme (Chart I.4.4). The structural primary expenditure ratio also increased in 2018, although to a lesser extent, and remains close to the lowest level recorded since the beginning of the Monetary Union.

⋮ Increase in structural revenue arising from developments in ⋮ revenue from taxes and social contributions

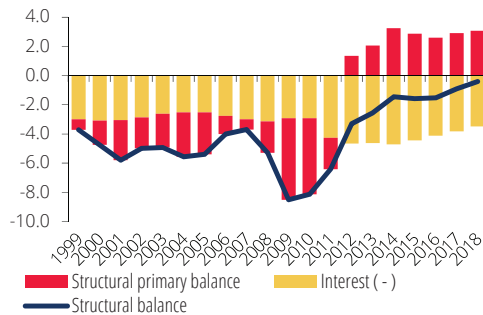
In actual terms, total general government revenue grew by 5.5% in 2018, partially reflecting the positive developments in economic activity. In structural terms, the share of total revenue in potential GDP increased by 0.8 p.p.²¹ This exclusively reflected the growth in the collection of all main taxes and social contributions (Chart I.4.5). Box 3 describes the structural evolution of revenue from taxes and social contributions in 2018.

19. The structural figures (adjusted for the cycle and temporary measures) are calculated using the new methodology for the cyclical adjustment of fiscal balances adopted in 2019 in the context of the ESCB. For more information on this methodology and its application to the Portuguese case, see Braz et al. (2019), "The new ESCB methodology for the calculation of cyclically adjusted budget balances: an application to the Portuguese case", Banco de Portugal *Economic Studies*, Volume V – No 2, April 2019.

20. Note that, under the preventive arm of the Stability and Growth Pact, in 2018 there should be an improvement in the structural balance of at least 0.6% of potential GDP, measured in accordance with the methodologies adopted by the European Commission.

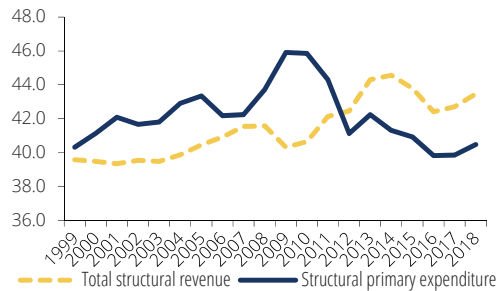
21. The calculation of potential GDP is surrounded by high uncertainty. The structural analysis of budgetary developments undertaken in this chapter is based on an estimate of potential GDP calculated in line with the guidelines adopted by the ESCB. The calculation method, described in Braz et al. (2019), is based on a Cobb-Douglas production function and is compatible with one of the output gap measures presented in Chart I.5.5 in Chapter 5 – Supply (CD PF). In 2018, potential GDP calculated as per this methodology is estimated to have grown by 2.7% in nominal terms.

Chart I.4.3 • General government structural balance | Percentage of potencial GDP



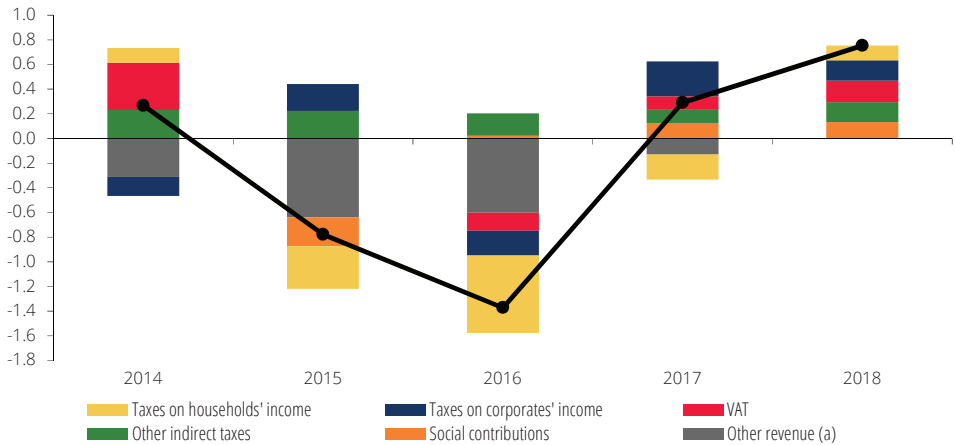
Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.4.4 • Structural revenue and structural primary expenditure | Percentage of potencial GDP



Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.4.5 • Contributions for the change in structural revenue | Percentage points of potencial GDP



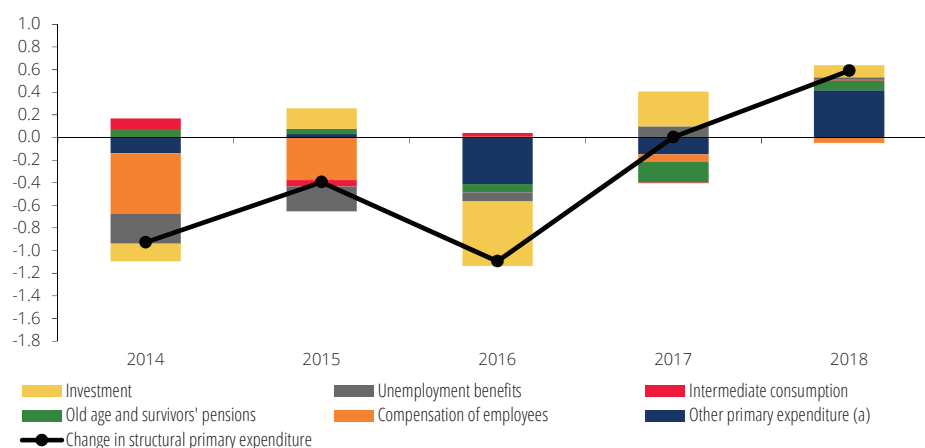
Sources: Statistics Portugal (Banco de Portugal calculations). | Notes: (a) Other revenue encompasses "other current revenue", including sales of goods and services, and "capital revenue".

In terms of non-tax revenue adjusted for temporary measures, its ratio in potential GDP remained unchanged, reflecting the stabilisation of its current and capital components. In the case of other current revenue, the contribution made by the growth of dividends distributed by Banco de Portugal and the increase in sales of goods and services are almost fully offset by the reduction in revenue from interest and rents, as well as other unspecified receipts. In terms of capital revenue, its developments in 2017 and 2018 are affected by the amounts associated with the partial recovery of the guarantee granted by the State to Banco Privado Português. Excluding this operation, which is classified as a temporary measure according to the ESCB definition, the share of capital revenue in potential GDP is unchanged, as the growth in capital transfers from the European Union to the general government reflected in expenditure in the year was offset by a fall in other unspecified revenue.

..... Increase in structural primary expenditure, both as regards current and capital spending

In 2018, the increase in primary expenditure (0.3%) was greatly affected by the impact of temporary measures, with an emphasis on capital injections into CGD in 2017 and Novo Banco in 2018. Excluding this impact and the effects of the economic cycle,²² structural primary expenditure increased by 0.6 p.p. of potential GDP (Chart I.4.6). This behaviour was common to both current and capital expenditure components.

Chart I.4.6 • Contributions for the change in structural primary expenditure | Percentage points of potential GDP



Sources: Statistics Portugal (Banco de Portugal calculations). | Notes: (a) Other primary expenditure includes social payments excluding old-age and survivors' pensions and unemployment benefits, social contributions paid by the general government, subsidies, and other current and capital expenditure.

Outlays referring to old age and survivors' pensions grew by 3.3% in 2018, corresponding to a change by approximately 0.1% of potential GDP. The total number of pensioners nearly stabilised, both in terms of the general social security system and CGA, the Civil Service pension scheme. Thus, expenditure growth resulted from a rise in the average pension, driven by the functioning of the pension indexation formula and the extraordinary increases in August 2017 and August 2018, applicable to the lowest pensions. On the other hand, expenditure on unemployment benefits fell by 6.0% in 2018, in line with the significant drop in the unemployment rate (Chapter 5 – Supply). In structural terms, this aggregate's share in potential GDP remained constant, reflecting two offsetting effects. On the one hand, the decline registered in the total number of unemployed in the economy was sharper than expected given past cyclical behaviour, causing a negative composition effect.²³ On the other hand, there was a slight increase in the average subsidy.

In 2018, expenditure on compensation of employees and intermediate consumption remained relatively constant as a ratio of potential GDP. Developments in compensation of employees are underpinned by a 3% growth in wages and salaries, reflecting an increase of approximately 1% in the

22. On the expenditure side, the only item affected by the economic cycle is that referring to spending on unemployment benefits.

23. Note that the methodology of cyclical adjustment adopted in the ESCB context assumes that the macroeconomic variable associated with expenditure on unemployment benefits is the total number of unemployed in the economy. In 2018, this aggregate fell more sharply than the number of unemployed entitled to benefits. Therefore, should subsidised unemployment have been used for the purposes of cyclical adjustment, the composition effect would have remained negative but to a lesser degree.

number of civil servants and the effects of the unfreezing of career progressions and promotions in general government. As for intermediate consumption, the increase of 3.5% represents a slight acceleration compared to 2017. This evolution is, however, greatly influenced by a considerable reduction in expenditure on public-private partnerships in the road sector and the costs associated with financial intermediation services indirectly measured (FISIM). Intermediate consumption net of these two factors grew by 7.0% in 2018 (compared with an increase of 1.4% in the previous year). The remaining components of current primary expenditure (subsidies, social benefits in kind and other current expenditure) increased their overall share in potential GDP by 0.2 p.p.

Capital expenditure fell by 24.9% in actual terms, a development that was greatly affected by the aforementioned temporary measures, both in 2017 and 2018. The growth rate of capital expenditure adjusted for the respective impact was 20.5%. This increase corresponds approximately to a rise by 0.4 p.p. in potential GDP, of which 0.1 p.p. is explained by public investment and 0.3 p.p. reflects the behaviour of capital transfers paid by the general government. The growth of capital transfers corrected for the impact of temporary measures reflects a number of operations that, despite not complying with the requirements to be classified as temporary measures, had significant one-off effect on the general government balance.²⁴ As a whole, this type of operations had an impact equivalent to 0.1% of GDP on general government expenditure in 2017 and 0.3% in 2018. Furthermore, this item was affected by the sharp increase in the transfer to the energy sector of part of the revenue from the extraordinary contribution levied on that sector with a view to reducing the tariff deficit.

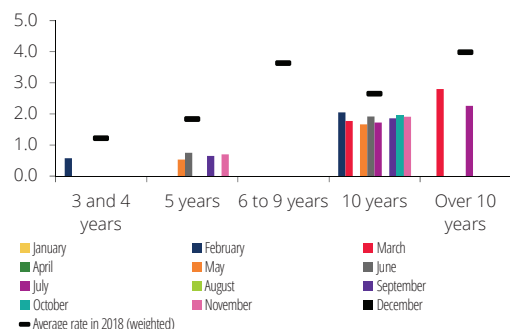
In the case of public investment, there was an increase of 11.3% in actual terms. This development represents a deceleration compared to the previous year (23.4%), essentially reflecting the drop recorded in Local and Regional Government (-1.8% against an increase of 32.3% in the previous year). Correcting the effect of expenditure relating to the 2017 wildfires (classified as a temporary measure), there is a milder increase, corresponding to 0.1 p.p. of potential GDP (Chart I.4.6). A significant part of this increase reflects outlays on the acquisition and maintenance of military equipment.

Continued downward trend of the government debt ratio, against a background of favourable financing conditions for the Portuguese Republic

In 2018, Portugal continued to benefit from relatively favourable financing conditions in the sovereign debt markets. The average rate in 10-year Treasury bonds auctions was 1.9%, compared with 2.6% in 2017 (Chart I.4.7). As for short-term issues, there was also a fall in the average interest rate in Treasury bill auctions, from -0.2% to -0.3% (Chart I.4.8.).

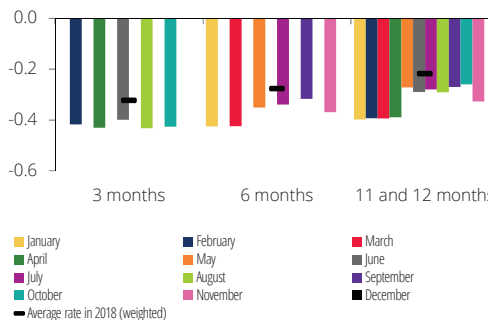
24. These operations include the conversion of deferred tax assets and capital injections into State-Owned transportation companies classified outside of the general government sector, both with an impact in 2017 and 2018. Affecting only the 2018 balance, it is worth noting the loan and guarantee granted by the Directorate-General of Treasury and Finance to the Credit Recovery Fund, as well as the granting of a guarantee to SATA Air Açores by the Azores Regional Government. In line with the rules adopted by the ESCB, this type of operations that contribute to reduce the general government balance cannot, as a rule, be classified as temporary measures. The exceptions to this principle are limited to effects triggered by judicial decisions or natural disasters and measures to support the financial system.

Chart I.4.7 • Yields on Treasury bonds issued in 2018 | In percentage



Source: IGCP.

Chart I.4.8 • Yields on Treasury Bills auctioned in 2018 | In percentage



Source: IGCP.

In this context, the price effect made a significant contribution to the reduction in the public debt interest burden in 2018, from 3.8% to 3.5% of GDP. In particular, the implicit interest rate on debt²⁵ remained on a downward path, falling from 3.1% in 2017 to 2.9% in 2018 (Chart I.4.9), a development that has benefited from the ECB's non-standard monetary policy measures. Furthermore, it is important to highlight the decrease in interest expenses as a result of the early repayment of IMF loans granted under the Economic and Financial Assistance Programme, as well as the repayment of bonds whose rates were higher than those of new issues.

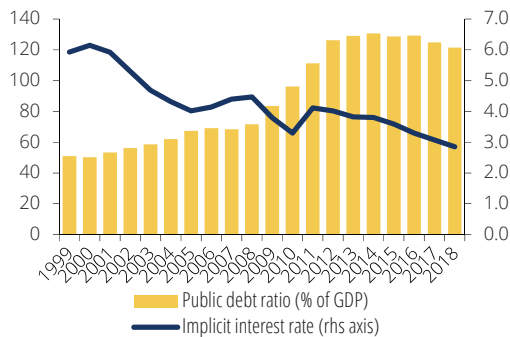
Reduction of the debt ratio reflecting the primary surplus and a nominal growth of the economy exceeding the implicit interest rate

In 2018, the general government debt ratio fell by 3.3 p.p. of GDP (Charts I.4.9 and I.4.10). The implicit interest rate on debt remained, for the fourth consecutive year, lower than the nominal GDP growth rate, contributing to a reduction of the debt-to-GDP ratio. However, the main contribution to this reduction stemmed from the general government primary balance, which was very significant in 2018 (Chart I.4.10). Deficit-debt adjustments had a moderate impact on the increase of the debt ratio (0.6 p.p. of GDP), in spite of the reduction in the stock of general government deposits. Indeed, the use of financial assets was more than offset by a reduction in liabilities that are not included in the Maastricht debt definition, with particular emphasis on the reduction in trade credits.

Notwithstanding the reduction observed in 2018, at the end of the year, the public debt ratio remained high (121.5%).

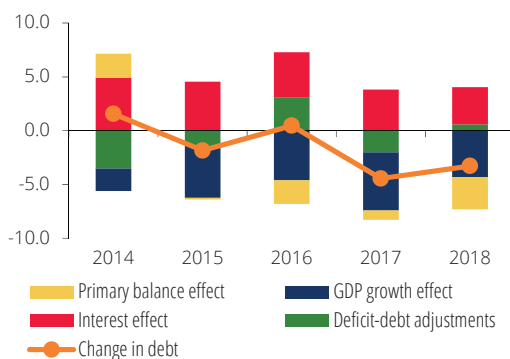
25. The implicit interest rate is computed as the ratio of interest expenditure to the simple average of the stock of debt at the end of the same year and at the end of the preceding year.

Chart I.4.9 • Public debt ratio to GDP and implicit interest rate | In percentage



Sources: Banco de Portugal and Statistics Portugal.

Chart I.4.10 • Contributions for the change in the debt-to-GDP ratio | Percentage points of GDP



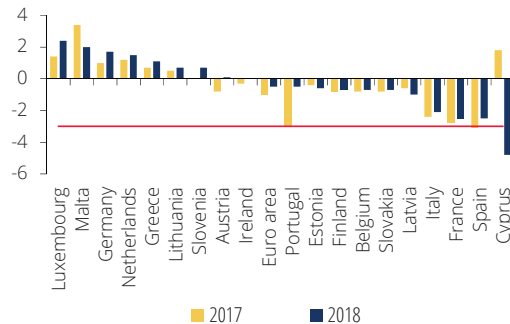
Sources: Banco de Portugal and Statistics Portugal.

General improvement of the budgetary position across euro area countries

In 2018, the euro area fiscal balance stood at 0.5% of GDP. Compared to 2017, there was an increase in the balance in 15 of the 19 Member States, with particular emphasis on Portugal, which recorded the most remarkable improvement (Chart I.4.11). With the exception of Cyprus, the fiscal balance stood above the reference value of -3% of GDP in all euro area countries and 8 of them recorded a surplus. In the case of Spain, the 2018 deficit outturn (-2.5% of GDP) points to the correction of the excessive deficit situation within the deadline stipulated by the Council of the European Union.

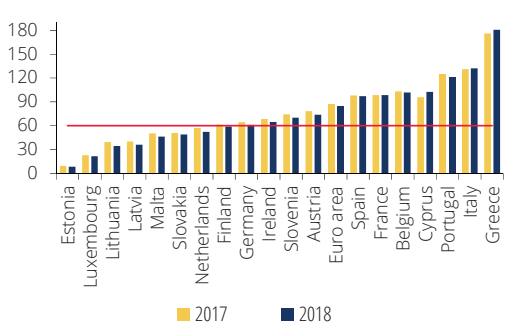
The public debt ratio in 2018 was 81.5% of GDP in the euro area as a whole (Chart I.4.12). With the exception of Cyprus, Greece and Italy, there was a decrease in the share of public debt in GDP in all Member States. Nevertheless, debt levels remain above 60% of GDP in most euro area countries, reaching particularly high levels in the cases of Greece, Italy and Portugal, where it stands above 120% of GDP.

Chart I.4.11 • General government balance in the euro area | In percentage of GDP



Source: Eurostat. | Note: Countries are ordered in accordance with the figure for the government balance in 2018.

Chart I.4.12 • Public debt in the euro area | In percentage of GDP



Source: Eurostat. | Note: Countries are ordered in accordance with the figure for the government debt in 2018.

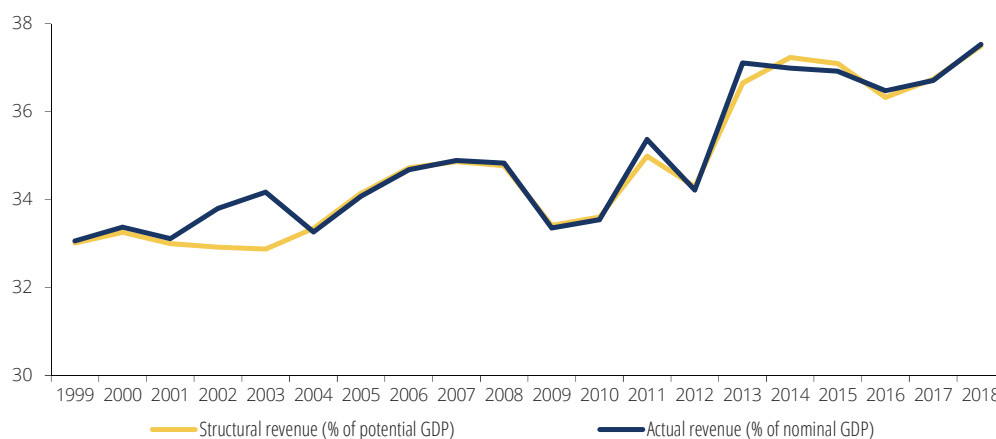
Box 3 • Structural developments in revenue from taxes and social contributions

The collection of taxes and social contributions is affected by the economic, legal and institutional framework of each country. The analysis of its structural evolution is typically based on the elimination of the effects of transitory factors associated with business cycle fluctuations and temporary measures, and it is expressed as a ratio to (nominal) potential GDP. Banco de Portugal assesses structural developments in revenue from taxes and social contributions on the basis of the methodological framework adopted within the context of the ESCB, both as regards the criteria for identifying temporary measures and the method of quantifying the cyclical impact.

At the end of 2018, the ESCB adopted a methodology for the cyclical adjustment of fiscal balances in which the respective cyclical component is obtained in aggregate form, multiplying the output gap by a budgetary semi-elasticity. Braz et al. (2019)²⁶ present this new methodology, providing details on the estimation of the semi-elasticity and the output gap, as well as their application to the Portuguese case. Notwithstanding the aggregate nature of the new methodology of cyclical adjustment, it is possible to break down the contribution of different factors to structural changes (that is, after excluding the effects of temporary measures) in revenue from taxes and social contributions into the: (i) effect of permanent tax policy measures; (ii) fiscal drag (essentially associated with income tax progressivity); (iii) composition effect resulting from the difference between developments recorded by the macroeconomic bases and those that would have been expected given the respective elasticities with respect to the output gap; and (iv) residual component referring to the share of the structural variation that is not explained by the remaining components. This approach, which is also presented in detail in Braz et al. (2019), is used for the detailed analysis of the structural developments of revenue from taxes and social contributions in this box.

In 2018, the collection of taxes and social contributions grew by 5.9%. In structural terms, this aggregate is estimated to represent 37.5% of potential GDP, having increased by 0.8 p.p. compared with the previous year (Chart C.3.1). Despite the increases recorded in the last two years, the structural revenue from taxes and social contributions has remained at a level only slightly higher than that recorded at the end of the Economic and Financial Assistance Programme.

Chart C3.1 • Revenue from taxes and social contributions | In percentage



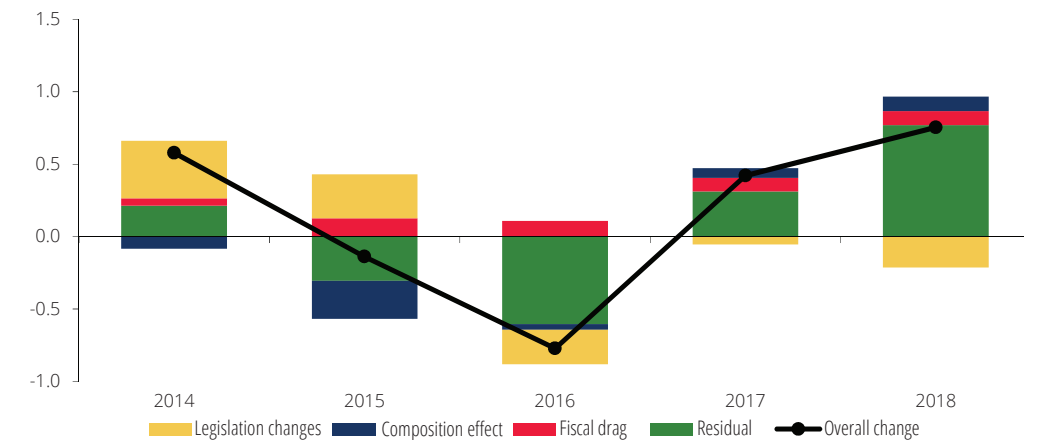
Source: Statistics Portugal (Banco de Portugal calculations). | Note: In the absence of temporary measures, the differential between the two series corresponds to the cyclical component of revenue from taxes and contributions as a ratio to GDP. Given its high sensitivity to the cycle, the respective cyclical component features a small magnitude (for additional detail, see Braz et al. , 2019)

26. Braz et al. (2019), "The new ESCB methodology for the calculation of cyclically adjusted budget balances: an application to the Portuguese case", Banco de Portugal *Economic Studies*, Volume V – No 2, April 2019.

The increase in the structural tax and contributory revenue is chiefly explained by factors that are not singled-out in the ESCB methodology and and, as such, are captured in its residual component (Chart C3.2). The impact of the fiscal drag and the composition effect were positive but modest, while the permanent fiscal policy measures resulted in a loss of revenue.

The increase in structural tax and contributory revenue was broadly based across its main components (Chart C3.3). Structural revenue from taxes on production and imports increased its share in potential GDP by 0.3 p.p., with a noteworthy contribution of VAT collection. Indeed, the structural VAT revenue increased by 0.2 p.p. of potential GDP in 2018, partly reflecting a composition effect. This results from the fact that the growth of the macroeconomic bases for VAT considered in the ESCB methodology (mostly private consumption and total investment) exceeded in 2018 the growth rates that would have resulted from their average sensitivities to changes in the output gap. It is important to highlight that in 2018 the gross collection of VAT was negatively affected by changes in the taxation of extra-EU imports and whose impact is captured in the residual component. Nevertheless, the VAT residual is positive and this is partially reflecting the decrease in this tax's refunds, computed according to the time-adjustment applicable in the compilation of the national accounts. In terms of the remaining taxes on production and imports, the structural revenue increased by 0.2 p.p. of potential GDP. The drivers of these developments are essentially reflected in the residual component and they broadly refer to the increase in revenue from auctions of carbon licences and the extraordinary contribution levied on the energy sector.²⁷ Furthermore, the collection of the Municipal Tax on Real Estate Transactions also recorded a significant increase, in line with the dynamism of the real estate market.

Chart C3.2 • Breakdown of the structural change in total taxes and social contributions
| In percentage points of potential GDP



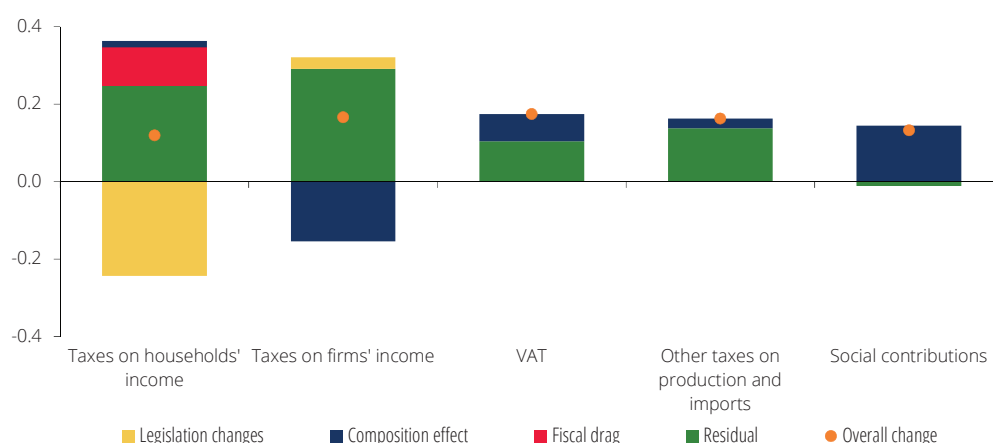
Sources: Statistics Portugal (Banco de Portugal calculations).

The structural revenue from taxes on income and wealth increased by 0.3 p.p. as a ratio of potential GDP, with positive contributions of the collection of taxes on corporations and, to a lesser extent, households. In the case of taxes on corporations, structural revenue increased by 0.2 p.p. of

27. Note that the revenue obtained from the extraordinary contribution levied on the energy sector is allocated to reducing the tariff deficit. The increase registered in 2018 is due to the settlement of payments by an enterprise in this sector. This increase has a neutral impact on the fiscal balance insofar it was transferred back to that enterprise to reduce the tariff deficit.

potential GDP. This development occurred notwithstanding a negative composition effect related with the fact that the gross operating surplus and mixed income (which is the macroeconomic base considered in the case of corporate income tax (IRC)) recorded in 2018 a more moderate increase than what would be expected given its elasticity to the output gap. On the other hand, it is important to highlight the impact of the increase in the Municipal tax surcharge (“derrama estadual”) on the State Budget for 2018, as well as the positive residual component. Indeed, despite the slight increase of IRC refunds (net of the conversion of deferred tax assets in 2017 and 2018²⁸) as a percentage of potential GDP, the residual is positive and has a significant magnitude. Note that the actual tax base of IRC is highly influenced by the performance of a relatively small number of large enterprises, which may diverge from developments in the macroeconomic base assumed in the ESCB methodology.

Chart C3.3 • Breakdown of the structural change in revenue from taxes and social contributions in 2018 | In percentage points of trend GDP



Sources: Statistics Portugal (Banco de Portugal calculations). | Note: Part of the residual of social contributions reflects the actual and imputed social contributions referring to the civil servants' regime, both of which are also recorded on the expenditure side.

Revenue from taxes on household income increased by 0.1 p.p. in structural terms, notwithstanding the implementation of measures to reduce the personal income tax (IRS) (namely the remaining effect of the elimination of the IRS surcharge implemented in 2013 and the changes to tax brackets introduced in the State Budget for 2018). This loss of revenue is mitigated by the estimated impact of the fiscal drag, which presumes that this tax brackets are not updated, as well as by other factors included in the residual component. Among other aspects, this component should reflect the robust growth in revenue associated with the issuance of billing notes. The composition effect is roughly neutral in the case of taxes on household income, with two underlying impacts that offset each other. On the one hand, in the economy as a whole, growth in employment and the wage bill exceeded the increase implied by the respective elasticities with respect to the output gap. On the other hand, as aforementioned, the gross operating surplus and mixed income (which is the base used in the case of personal income tax on capital income and self-employment) registered a moderate growth compared to its average response to the cycle.

Finally, structural revenue from social contributions increased by 0.1 p.p. as a ratio to potential GDP. This development is almost solely determined by the composition effect associated with the significant growth registered in employment and the economy's wage bill.

28. From a national accounts perspective, these operations are reflected in capital expenditure. From a public accounts perspective, the conversion of deferred tax assets is registered in IRC refunds, thus negatively affecting the net revenue for this tax.

5 Supply

GVA deceleration in 2018 against a background of ongoing GDP per capita growth in Portugal above that of the euro area

In 2018 gross value added (GVA) grew by 1.7%, in real terms, which accounts for a deceleration from 2.4% in 2017 (Table I.5.1). As in previous years, GVA growth was lower than GDP growth, which increased by 2.1% in 2018 (Chapter 6). The discrepancy between GVA and GDP growth reflects developments in taxes net of subsidies, whose volume rose by 4.2% in 2018, following 5.9% growth in 2017. The GDP growth differential *vis-à-vis* the euro area remained positive (by 0.3 p.p.) as in 2017.

Table I.5.1 • GVA and main sectoral components | Year-on-year growth, in percentage, unless otherwise stated

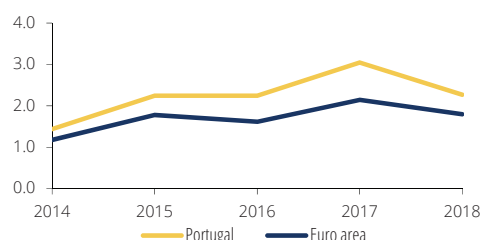
	% of GVA in 2017	2014	2015	2016	2017	2018	2017		2018	
							S1	S2	S1	S2
GVA	100.0	0.4	1.6	1.6	2.4	1.7	2.6	2.3	1.9	1.5
Agriculture, forestry and fishing	2.3	-1.6	5.1	-3.6	4.6	-1.8	4.0	5.3	-0.6	-3.0
Manufacturing	14.8	2.6	2.9	2.7	3.6	0.6	4.1	3.1	1.8	-0.7
Electricity, gas and water supply	3.7	1.1	4.0	-0.5	-2.1	4.9	-3.1	-1.1	5.1	4.7
Construction	4.0	-8.4	0.0	-0.5	6.3	2.2	7.7	4.8	2.3	2.2
Services	75.3	0.6	1.3	1.8	2.1	1.9	2.2	2.0	1.8	1.9
Trade, repair, restaurants and hotels	20.0	4.3	2.6	3.1	2.9	2.9	2.9	2.8	3.1	2.8
Transport, storage and communication	8.4	-2.6	0.8	0.5	5.7	2.5	6.5	5.0	3.0	2.0
Financial intermediation and real estate	17.1	-3.3	-0.9	0.0	0.1	1.2	0.1	0.0	1.2	1.2
Other services	29.7	1.3	1.8	2.2	1.8	1.3	1.8	1.7	1.0	1.6

Source: Statistics Portugal.

The substantial demographic changes that have occurred make it important to analyse the developments in GDP *per capita*. In this context, according to population development estimates in 2018, GDP *per capita* in Portugal will have grown by 2.3% in real terms (3.0% in 2017), which compares with growth of 1.8% in the euro area (Chart I.5.1).

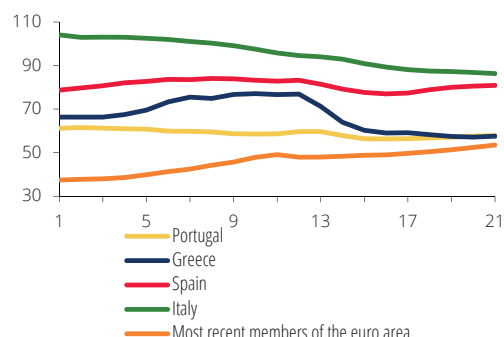
After the drop observed during the economic adjustment period, GDP *per capita* in Portugal has been recovering. Since 2013, GDP *per capita* in Portugal has grown by 12%, which compares with 9% growth in the euro area as a whole. Despite this convergence, Portuguese GDP *per capita* in 2018 represented 58% of the euro area's GDP *per capita* – 3.4 p.p. lower than in 1998 (Chart I.5.2).

Chart I.5.1 • Developments in GDP *per capita* in Portugal and the euro area | Growth rate, in percentage



Sources: Eurostat (Banco de Portugal calculations).

Chart I.5.2 • Developments in GDP *per capita* in Portugal and in selected countries | As a percentage of the euro area GDP *per capita*

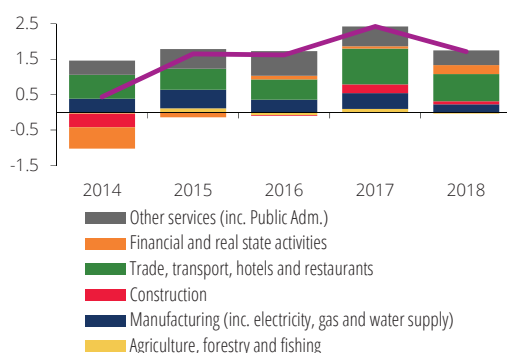


Sources: Eurostat (Banco de Portugal calculations). | Notes: Composite index for the 7 euro area most recent members weighted by GDP. These include Cyprus, Estonia, Latvia, Lithuania, Malta, Slovakia and Slovenia.

∴ GVA deceleration across the main sectors of activity in 2018

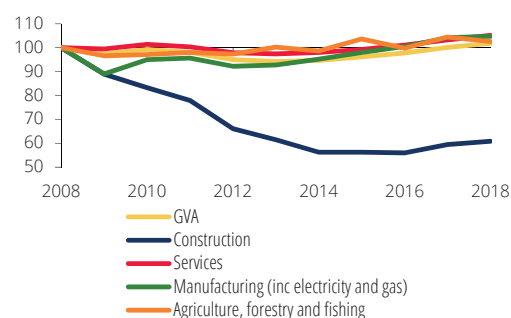
In 2018 GVA decelerated across the main sectors, with the exception of the electricity, gas and water supply sector, with a differentiated shift between services' components (Table 5.1 and Chart I.5.3). Overall, GVA in services decelerated to 1.9% in 2018 (2.1% in 2017), in particular the maintenance of high activity growth in commerce (Box 4), the acceleration in financial activities and the slowing down of accommodation and food services, in line with the evolution of tourism. There was also a sharp deceleration of transport and storage services in 2018. GVA in 2018 was for the first time above that seen prior to the international economic and financial crisis (Chart I.5.4). The recovery extended to most of the main sectors of activity, except for construction, where activity fell very markedly during the economic adjustment period.

Chart I.5.3 • Contributions to the GVA year-on-year growth rate | Contributions by sectors, in percentage points



Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.5.4 • GVA developments by sector | 2008=100



Sources: Statistics Portugal (Banco de Portugal calculations).

Recent indicators point to an increase in the levels of capacity utilisation in the Portuguese economy

Over a longer time horizon, the pace at which an economy can grow without generating inflationary pressure largely depends on its productive capacity. In this regard, potential output is key, and is associated with the aggregate supply capacity of the economy. Potential output depends on various structural aspects of the economy, such as demographic developments and productivity. Productivity is related to factors such as technological progress, the efficiency in the use of resources and the institutional framework. The Portuguese economy faces important challenges regarding a number of these aspects. This includes demographic developments, due the shrinking working-age population and ageing. Another major challenge is the increase in capital per worker levels and the need to establish a favourable framework for higher investment growth, both in terms of quality and volume.²⁹ The marked fall in investment in Portugal during the recent recession had a negative impact on capital build-up and the economy's potential output.

In the short run and against a background of sub-optimal use of productive resources, economic activity may grow faster than potential output without generating inflationary pressures. Estimates for the output gap – defined as the difference between real output and potential output – suggest that it is close to zero or positive, following a long period in negative territory. This points to a decline in spare capacity and in the degree of labour market slack (Chart I.5.5).³⁰

Further improvement in labour market conditions, though with lower growth in employment

The recovery in productive activity has been reflected in the improvement in labour market conditions, amid a sharp drop in the unemployment rate and continued employment growth, although at a slower pace than in 2017.

According to Statistics Portugal's Labour Force Survey, in 2018 employment grew by 2.3%, 1.0 p.p. down from 2017 (Table I.5.2). Employment also recovered across the euro area, most notably in Portugal and Spain, whose labour markets had deteriorated significantly during the recent recession (Chart I.5.6).

The recovery in total employment has reflected the significant growth of paid employment in a context of weak self-employment. In 2018 paid employment rose by 2.7%, while self-employment grew by 0.5%. However, these two forms of employment had differentiated intra-annual profiles. Thus, while paid employment decelerated over the course of the year, contributing to slow down the momentum of total employment, self-employment, after falling in the first half of 2018, experienced a positive change, which was particularly remarkable during the last quarter of the year.

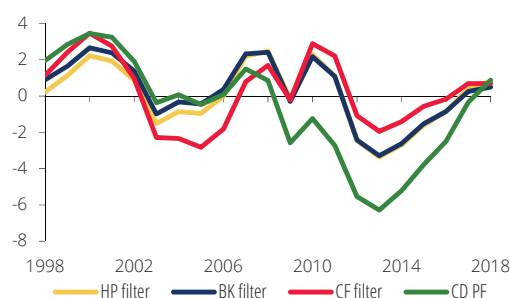
29. For greater detail see the box entitled “Capital stock in the Portuguese economy”, *Economic Bulletin*, May 2018.

30. For a discussion of the main issues related to the use of potential output and the output gap as economic analysis tools, more specifically the uncertainty associated with their estimation, see the Special Issue entitled “Potential output: challenges and uncertainties”, *Economic Bulletin*, December 2017.

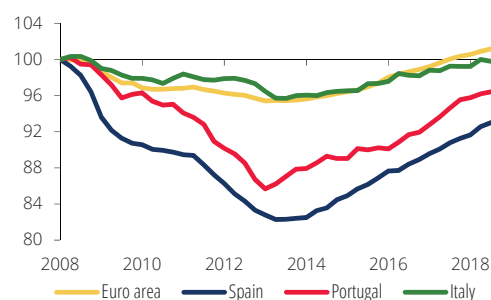
Table I.5.2 • Indicators of recent employment developments in Portugal | Year-on-year growth, in percentage, unless otherwise stated

	Thousands of individuals in 2018	2014	2015	2016	2017	2018	2017		2018	
							S1	S2	S1	S2
Total employment	4866.7	1.6	1.1	1.2	3.3	2.3	3.3	3.3	2.8	1.9
Employees	4056.5	4.4	2.8	2.1	4.3	2.7	3.9	4.6	3.7	1.7
Self-employed	789.7	-8.2	-5.7	-3.2	-0.4	0.5	1.4	-2.2	-1.5	2.5
Homeworkers	20.5	-19.1	-4.1	26.0	-23.9	-7.1	-24.6	-23.2	-12.2	-1.6
By type of contract:										
Open-ended contracts	3165.1	4.4	2.1	1.6	4.7	2.8	4.8	4.5	3.5	2.1
Fixed-term contracts	745.0	5.8	6.6	2.6	3.3	2.2	0.1	6.5	5.4	-0.7
Service providers	146.4	-0.4	-1.7	8.4	0.8	4.8	5.6	-3.5	2.0	7.5
By duration:										
Full-time	4355.3	3.0	1.8	1.8	4.1	3.2	3.6	4.5	4.1	2.3
Part-time	511.3	-7.2	-3.8	-3.0	-2.4	-4.7	1.5	-6.2	-7.4	-1.8
By age:										
From 15 to 24 years old	296.4	2.3	2.0	4.4	7.7	4.9	7.3	8.0	3.8	5.9
From 25 to 34 years old	939.8	0.4	-0.3	-2.0	1.1	0.7	0.7	1.5	1.5	0.0
From 35 to 44 years old	1303.1	3.5	0.9	0.9	-0.1	-0.3	0.1	-0.3	0.2	-0.7
From 45 to 54 years old	1252.0	2.5	0.7	2.0	4.3	2.7	3.8	4.8	3.8	1.6
More than 54 years old	1075.3	-1.2	3.1	3.3	7.7	6.0	8.8	6.5	6.0	6.0

Source: Statistics Portugal (Labour Force Survey).

Chart I.5.5 • Output gap estimates for Portugal | Output gap in percentage of potential GDP

Sources: Statistics Portugal (Banco de Portugal calculations). | Notes: The output gap corresponds to the difference between GDP and four estimates for potential output: Hodrick-Prescott (HP) filter, Baxter and King (BK) filter, Christiano and Fitzgerald (CF) filter and calculations based on a Cobb-Douglas production function (CD PF). For a more detailed analysis see the Special issue "Potential output: challenges and uncertainties", *Economic Bulletin*, December 2017.

Chart I.5.6 • Employment developments in Portugal and in the euro area | 2008Q1=100

Sources: Eurostat (Banco de Portugal calculations). | Note: The employment figures presented in the chart is for age subgroup from 15 to 64 years old, consistently with the Eurostat release. This is in contrast with the criteria adopted by the Statistics Portugal in the quarterly accounts estimates (15 years old and over). Figures are seasonally adjusted.

As in 2016 and 2017, employment grew significantly among individuals aged over 54 (Chart I.5.7). In 2018 this age group made a 1.3 p.p. contribution to the 2.3% growth in employment.³¹ The importance of the oldest groups to employment growth can also be seen in the euro area.³² The

31. Between 2015 and 2018 the increase in employment in the age group of individuals aged over 54 (163 thousand individuals) accounted for around half of total employment growth in this period (318 thousand individuals).

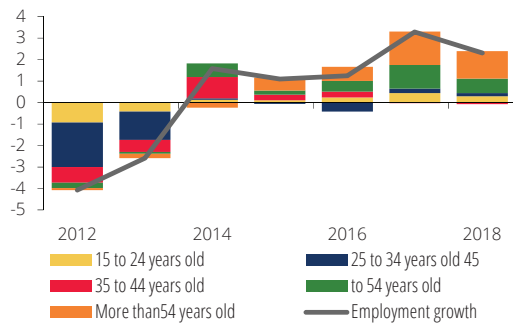
32. In 2018 employment for individuals aged 15-64 grew, year-on-year, by 1.2% in the euro area, 2.2% in Portugal, 2.6% in Spain and 0.6% in Italy, with employment among individuals aged 55-64 contributing 0.8 p.p., 1.1 p.p., 0.9 p.p. and 0.9 p.p. respectively.

two main forms of hiring (open-ended contracts and fixed-term contracts) continued to grow in 2018, although less expressively than in 2017, with their relative weight in paid employment remaining virtually unchanged.³³

GVA per worker shrank further, with this productivity measure showing a negative growth differential against the euro area

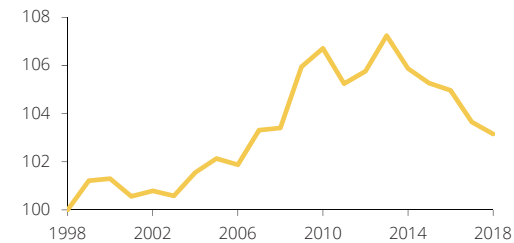
Growth in employment once again exceeded that of GVA, which led to a further decrease in GVA per worker in 2018. As such, this productivity measure remained on the downward path seen since 2014. Relative developments vis-à-vis the euro area have been negative, after a long period in which GVA per worker in Portugal recorded average growth above that of the euro area (Chart I.5.8). The evolution of this variable over the past decade is analysed in this Bulletin’s Special Issue.

Chart I.5.7 • Contributions by age segments for the employment growth | Contributions, percentage points



Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.5.8 • Developments in the GVA per worker differential between Portugal and the euro area | 1998=100



Sources: Eurostat (Banco de Portugal calculations).

GVA per worker’s decline since 2014 seems to have stemmed from productivity decreases within each activity sector (Table I.5.3). The contribution made by the intersectoral component, from worker flows across sectors, has remained positive, and, in fact, exceeded that made between 2009 and 2013. This suggests that in the course of the ongoing economic recovery, as during the previous recession, employment flows were redirected to more productive sectors of the economy, particularly those most exposed to international competition.

33. The share of fixed-term contracts in paid employment has remained around 18.5% since 2015. In the second half of 2018, it stood at 18.3%.

Table I.5.3 • Contributions to the GVA year-on-year growth rate³⁴ | Year-on-year growth, in percentage, and contributions, in percentage points

	2014	2015	2016	2017	2018	2014-2018	<i>memo:</i> 2009-2013
Whole economy (change rate, in percentage)	-1.0	0.3	0.0	-0.8	-0.6	-2.1	7.6
Whole economy (exc. PA e RSA, change rate, in percentage)	-0.7	0.0	0.4	-0.1	-0.3	-0.7	9.2
Contributions (in p.p.):							
Agriculture, forestry and fishing	0.1	0.3	0.0	0.2	0.0	0.7	0.4
Manufacturing	0.1	0.0	0.2	0.0	-0.5	-0.3	2.4
Electricity, gas and water supply	0.1	0.1	-0.1	-0.2	0.1	0.1	-0.1
Trade, transport, hotels and restaurants	-0.4	-0.2	-0.3	-0.4	-0.1	-1.4	5.3
Construction	-0.3	-0.1	-0.1	0.0	-0.1	-0.5	0.6
Other services	-1.3	-1.0	0.1	-0.2	0.0	-2.4	-1.3
Within sector contribution	-1.7	-0.8	-0.2	-0.6	-0.6	-3.9	7.3
Inter-sectoral shift	0.9	0.9	0.6	0.5	0.3	3.2	1.9

Sources: Eurostat (Banco de Portugal calculations).

∴ Unemployment rate continued on a downward trend

The substantial flows of individuals that switch from unemployment to employment have contributed to employment growth. In 2018 taking into account flows, with a constant sample, i.e. considering individuals that remain in the sample of Statistics Portugal's Labour Survey for two consecutive quarters, on average 140 thousand individuals switched from unemployment to employment in each half of the year, while 106 thousand individuals followed the reverse path (Table I.5.4)³⁴

In 2018 the unemployment rate stood at 7.0% (Table I.5.5). The unemployment rate in Portugal was the lowest since 2004, when it stood at 6.6%. However, compared with the figures recorded in 2004, underlying the unemployment rate in 2018 was a smaller labour force (Table I.5.6). In fact, between 2004 and 2018, the labour force in Portugal decreased by 3.5%. On the other hand, despite the significant reduction in recent years, the share of long-term unemployment is still higher than in 2004. It should also be noted that the unemployment rate in 2018 had a relatively higher contribution of people aged over 54 and with a higher level of education.

The unemployment rate has also declined across the euro area, but particularly in Portugal and Spain (Chart I.5.9). Underlying the reduction in the unemployment rate in Portugal is a drop of 20.9% in the number of unemployed. Compared with the first quarter of 2013, when the unemployment rate reached a historical peak of 17.5%, by the last quarter of 2018 the number of unemployed in Portugal had fallen by 62% (down by 578 thousand).

34. 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.

Table I.5.4 • Flows between labour market states (constant sample)⁽¹⁾ | Thousands of persons

	2017 S1	2017 S2	2018 S1	2018 S2
1 – Net flow from unemployment to employment	51.3	43.6	49.5	17.2
From employment to unemployment	176.8	166.1	156.3	122.8
From unemployment to employment	125.5	122.4	106.9	105.5
2 – Net flow from employment to inactivity	-27.3	2.0	-27.5	4.9
From employment to inactivity	227.7	262.0	216.2	283.2
From inactivity to employment	255.0	260.0	243.7	278.3
3 – Net flow from inactivity to unemployment	25.5	27.0	21.7	23.2
From inactivity to unemployment	152.1	158.8	127.4	130.0
From unemployment to inactivity	126.6	131.7	105.7	106.9
Memo:				
Net flow to unemployment (3-1)	-25.8	-16.6	-27.8	5.9
Sample effect ⁽²⁾	-27.9	-43.1	-24.2	-36.0
Change in unemployment (all sample)	-53.7	-59.7	-52.0	-30.1

Sources: Statistics Portugal (Banco de Portugal calculations). | Notes: (1) Half-yearly values are based on constant sample quarterly flows (individuals that remain in the sample of the Labour Force Survey for two consecutive quarters); (2) The sample effect represents the difference between constant and non-constant (whole sample) flows reflecting the impact of the quarterly refresh of the database (1/6 of total sample) and changes in reporting individuals that are kept in the remaining 5/6 of the sample.

Table I.5.5 • Indicators of recent unemployment developments in Portugal | Year-on-year growth, in percentage, unless otherwise stated

	Thousand individuals in 2018	2014	2015	2016	2017	2018	2017		2018	
							S1	S2	S1	S2
Unemployment (year-on-year rate of change, in percentage)	365.9	-15.1	-11.0	-11.4	-19.2	-20.9	-17.9	-20.7	-22.7	-19.0
Unemployment rate	–	13.9	12.4	11.1	8.9	7.0	9.5	8.3	7.3	6.7
By age ⁽¹⁾ :										
From 15 to 24 years old	75.5	34.8	32.0	28.0	23.9	20.3	23.9	23.9	20.7	20.0
From 25 to 34 years old	76.6	15.5	13.1	12.5	9.7	7.5	10.5	8.9	8.0	7.1
From 35 to 44 years old	81.1	11.7	10.2	8.5	7.2	5.9	7.9	6.4	6.2	5.5
From 45 to 54 years old	70.5	11.4	10.7	9.7	7.2	5.3	7.9	6.5	5.5	5.2
More than 54 years old	62.2	10.5	10.0	8.9	7.2	5.5	7.6	6.8	5.8	5.1
Labour underutilisation rate ⁽²⁾	743.9	23.0	21.4	19.5	16.5	13.7	17.4	15.7	14.3	13.1
Long-term unemployment (in percentage of total unemployment ⁽³⁾	188.0	66.0	63.9	62.5	58.1	51.4	59.3	56.6	53.2	49.4
Very long-term unemployment (in percentage of total unemployment ⁽⁴⁾	132.0	46.8	47.8	47.5	41.8	36.0	40.5	43.4	36.8	35.3
Discouraged	184.6	5.2	5.0	4.6	4.1	3.5	4.1	4.1	3.5	3.5

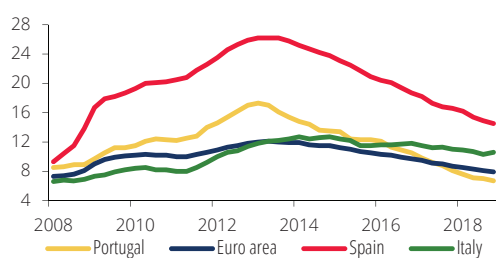
Sources: Eurostat (Banco de Portugal calculations). | Note: (1) The labour underutilization rate is an indicator calculated by Statistics Portugal that aggregates unemployed population, involuntary part-time work, individuals seeking work but not immediately available and individuals available to work but not seeking. (2) The long-term unemployment includes those unemployed for 12 months or more months. (3) The very long-term unemployment includes those unemployed for 24 months or more.

As in 2017, the drop in the unemployment rate largely reflected a reduction in the incidence of the so-called very long-term unemployment (individuals unemployed for two years or more), although less markedly, also weighing on the decrease in the median duration of unemployment (Chart I.5.10). In the last quarter of 2018, the share of very long-term unemployment in total unemployment was 35%, mirroring a substantial fall from 48% in the last quarter of 2016. Over that period, the median duration of unemployment declined from 23 to 12 months.

Table I.5.6 • Unemployment characteristics in 2004, 2013 and 2018 | Percentage of labour force

	2004	2013	2018
Unemployment rate	6.6	16.2	7.0
Number of unemployed	359.1	855.2	365.9
Labour force	5,421.4	5,284.6	5,232.6
Share by age group:			
From 15 to 24 years old	1.6	2.8	1.4
From 25 to 34 years old	1.9	4.2	1.5
From 35 to 44 years old	1.4	3.9	1.5
From 45 to 54 years old	1.1	3.3	1.3
From 55 to 64 years old	0.6	1.9	1.1
More than 65 years old	0.0	0.1	0.1
Share by qualification:			
None	0.2	0.5	0.1
Elementary 1 st and 2 nd cycle	3.3	5.0	1.6
Elementary 3 rd	1.5	4.0	1.6
Secondary	0.9	4.0	2.3
Higher	0.7	2.6	1.4
Share of long-term unemployment (in %)	48.0	62.7	51.4

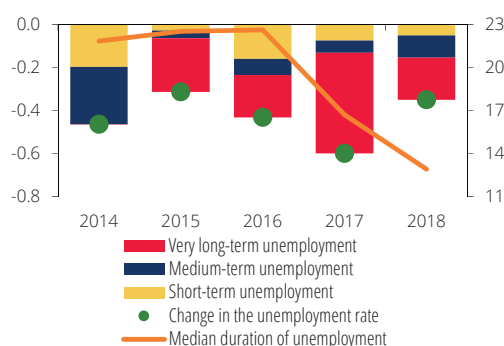
Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.5.9 • Unemployment developments in Portugal and in the euro area | Quarterly figures, percentage of total labour force

Source: Eurostat. | Note: The unemployment rate presented in the chart is for age subgroup from 15 to 74 years old, consistently with the Eurostat release. This is in contrast with the criteria adopted by the Statistics Portugal in the quarterly accounts estimates (15 years old and over). Figures are seasonally adjusted.

Chart I.5.10 • Contributions to changes in the unemployment rate, by duration brackets and median duration of unemployment

| Contributions in percentage points and median duration in months



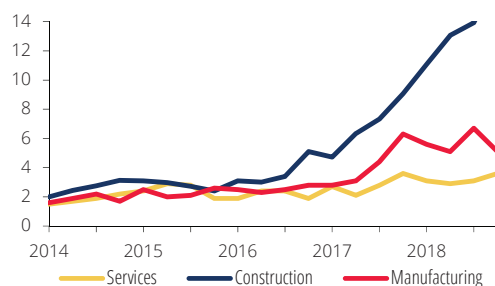
Sources: Statistics Portugal (Banco de Portugal calculations). | Notes: Short-term unemployment includes individuals unemployed for less than 12 months; medium-term unemployment includes those unemployed for 12 months or more but less than 24 months; very long-term unemployment includes those unemployed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

Available indicators point to a lower labour underutilisation rate in Portugal

The fast and marked fall in unemployment over the most recent period raises questions about the labour underutilisation rate in Portugal. According to Statistics Portugal's Business Cost of Contexts Survey, released at the end of July 2018, difficulties in recruiting staff and accessing skilled personnel by firms increased the most between 2014 and 2017. Furthermore, according to the European Commission's Opinion Surveys, the percentage of firms that refer to lack of work as adversely affecting production has increased since early 2017, particularly in construction (Chart I.5.11).

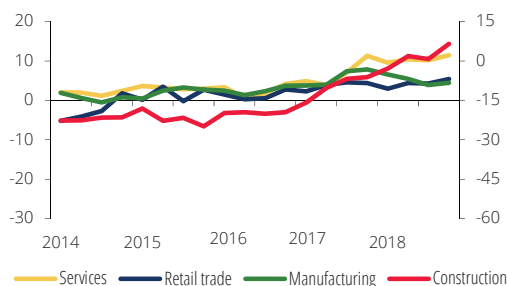
The labour underutilisation rate reflects the balance between labour demand by firms and labour supply by individuals. Available information points to the continued momentum in job search, with sectoral indicators on job prospects following an upward path, to stand above the levels seen prior to the international financial crisis (Chart I.5.12).

Chart I.5.11 • Percentage of firms indicating labour shortage as a factors limiting production | Percentage of responding firms



Sources: European Commission (Banco de Portugal calculations).

Chart I.5.12 • Assessment of employment expectations for the three months ahead | Balance, seasonally adjusted



Source: European Commission.

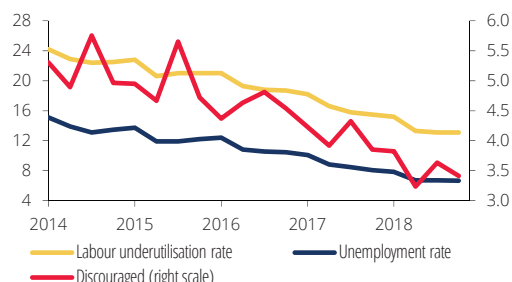
To assess the overall level of labour underutilisation, comprehensive measures other than merely the unemployment rate should be considered. Indeed, employment growth may be associated with a decline in unemployment but also with the switch of individuals to employment who were formerly flagged as inactive given that, for instance, they were not actively seeking work. In this context, alternative indicators also point to the substantial reduction in the labour underutilisation rate in Portugal. The number of individuals without a job claiming they want to work but do not actively seek work has decreased substantially.³⁵ This includes the sub-group of individuals currently available for work (also known as 'discouraged'). In turn, the labour underutilisation rate calculated by Statistics Portugal has been on a steeper downward path than the unemployment rate (Chart I.5.13).³⁶ In the last quarter of 2018 the labour underutilisation rate stood at 13.1%, which corresponds to a 2.4 p.p. decline from the last quarter of 2017 (over the same period, the unemployment rate dropped by 1.4 p.p.).

These indicators suggest that the room for employment to grow with the inclusion of unemployed individuals or inactive workers still attached to the labour market has narrowed over the most recent period. The more intensive use of the existing workers gives a wider scope for firms to expand their productive capacity, against a background where capacity utilisation in manufacturing and services has risen to levels close to those seen prior to the onset of the international economic and financial crisis (Chart I.5.14).

35. In literature, these individuals are known as marginally attached workers. In 2018 the number of individuals in this situation fell by 12.0%, to stand at 293 thousand.

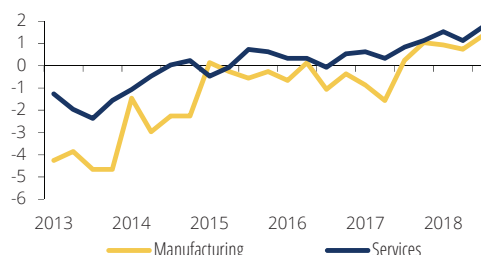
36. The labour underutilisation rate is an indicator calculated by Statistics Portugal that aggregates unemployed individuals, involuntary part-time work, individuals seeking work but not immediately available and individuals available to work but not seeking.

Chart I.5.13 • Indicators of labour market slack | Percentage of total labour force



Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.5.14 • Capacity utilisation in manufacturing and services | Difference vis-à-vis the average since 2000 (manufacturing) and 2011 (services)



Sources: European Commission (Banco de Portugal calculations). | Notes: Capacity utilisation is reported by firms as a percentage of total capacity. The values for capacity utilisation in services are expressed vis-à-vis the average since the third quarter of 2011, when these series started to be released.

In this context, according to Statistics Portugal's Labour Force Survey, the number of part-time workers who cannot find a full-time job (involuntary part-time work) has decreased. In the last quarter of 2018 the number of individuals in this situation was 164 thousand, which corresponds to a 19.4% year-on-year decline. Over the same period, the number of full-time workers willing to work more hours to earn more fell by 8.0%.

..... Maintenance of the upward trend in labour force in an adverse demographic scenario, amid population decrease and ageing

Given that available indicators point to lower labour underutilisation, the potential for employment growth in the medium run will largely depend on labour supply growth. In the first half of 2018, the labour force rose by 0.3%, compared with a 0.8% increase in 2017 (Table I.5.7).

Table I.5.7 • Indicators of recent labour force developments in Portugal | Year-on-year growth, in percentage, unless otherwise stated

	Thousand individuals in 2018	2014	2015	2016	2017	2018	2017		2018	
							S1	S2	S1	S2
Population	10 264.1	-0.6	-0.5	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Less than 15 years old	1412.3	-2.2	-2.2	-1.6	-1.1	-1.4	-1.2	-1.0	-1.3	-1.4
From 15 to 24 years old	1088.2	-1.0	0.0	-0.4	-0.5	-0.4	-0.6	-0.4	-0.4	-0.3
From 25 to 34 years old	1124.4	-3.6	-2.8	-2.5	-2.7	-2.1	-2.7	-2.7	-2.3	-1.9
From 35 to 44 years old	1497.2	-0.9	-1.2	-1.3	-1.6	-1.9	-1.6	-1.6	-1.8	-1.9
From 45 to 54 years old	1522.5	0.0	-0.4	0.0	0.5	0.4	0.4	0.5	0.4	0.4
More than 54 years old	3619.5	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Labour force	5232.6	-1.1	-0.6	-0.3	0.8	0.3	0.9	0.7	0.4	0.1
From 15 to 24 years old	371.9	-2.9	-2.2	-1.4	1.9	0.2	0.2	3.7	-0.4	0.8
From 25 to 34 years old	1016.4	-3.8	-3.1	-2.7	-2.0	-1.6	-2.6	-1.5	-1.3	-2.0
From 35 to 44 years old	1384.2	0.4	-0.7	-1.0	-1.5	-1.7	-0.9	-2.2	-1.6	-1.7
From 45 to 54 years old	1322.5	-0.1	-0.1	0.9	1.4	0.6	1.2	1.7	1.1	0.2
More than 54 years old	1137.5	-0.9	2.5	2.0	5.7	4.1	6.8	4.6	4.0	4.2
Participation rate										
(in percentage of total population)	-	50.3	50.3	50.2	50.7	51.0	50.6	50.9	50.9	51.1
Participation rate 15-64 years old (in percentage of total population)	-	73.2	73.4	73.7	74.7	75.1	74.2	75.1	75.0	75.3

Sources: Eurostat (Banco de Portugal calculations).

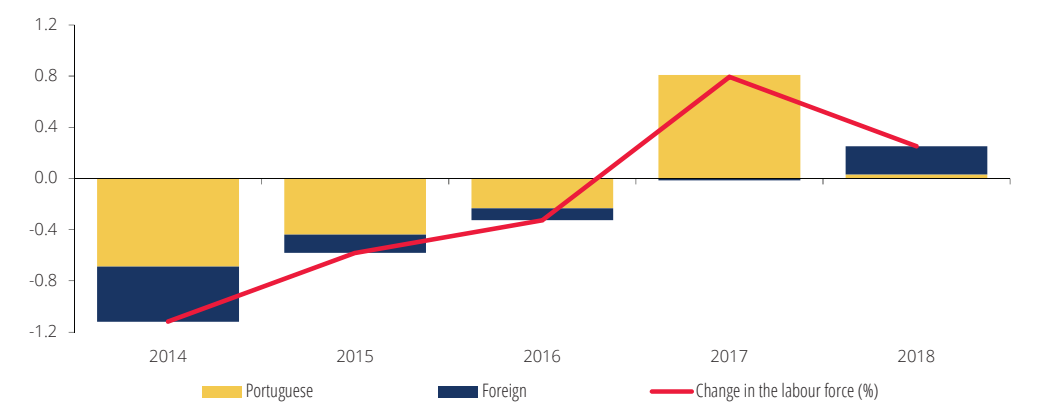
Following consecutive decreases between 2011 and 2016, the recovery of the labour force is set against a background of adverse demographic developments, with the maintenance of a downward trend in the resident population and its ageing profile.

In 2018, resident population fell by 0.2%. Similarly to the past few years, the population decreased across all age groups up to 44 and increased among older groups, especially in the group aged over 54. Ageing has a negative impact on the labour force due to typically lower participation rates across older groups.³⁷

The favourable developments in the labour force over the most recent period benefited from the rise in the participation rate among older groups and, to a lesser extent, the positive migration balance as of 2017 and the maintenance of the long-term upward trend in the female activity rate.³⁸ In this context, it is important to stress the increasing share of foreign individuals in the labour force over the most recent period. In 2018, the foreign labour force contributed 0.2 p.p. to the labour force's 0.3% growth in Portugal (Chart I.5.15).

The participation rate among older groups also increased in the euro area as a whole. In addition to the momentum in labour demand by firms, this seems to be also associated with an increase in the average lifespan of the population. Over the past decade, ageing has inspired several euro area countries to work on steps to reform the pension system, so as to ensure its financial sustainability, with an increase in the statutory minimum retirement age being one of the most commonly used measures. This increase may also lead to the extension of working lives, as some individuals may choose to work longer than the minimum retirement age, thus preventing long periods of inactivity and minimising poverty risk. Finally, given that participation rates tend to rise in tandem with the educational attainment of the population, developments in the participation rate among older groups may also reflect potential composition effects associated with the substantial increase in the educational attainment of the older segment of the population.

Chart I.5.15 • Developments in labour force by nationality | Contributions to the growth rate, in percentage points



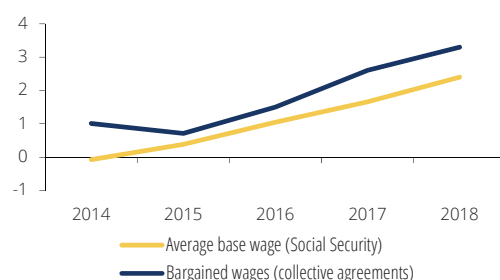
Sources: Statistics Portugal (Banco de Portugal calculations).

37. In 2018 the share of resident population aged over 54 in total population was 35%, which corresponds to an 8 p.p. rise from the share seen in 2000.
 38. In Portugal, the participation rate for individuals aged 55 to 64 increased from 54.4% in 2013 to 63.4% in 2018. In turn, the female participation rate stood at 47.5%, up by 2.6 p.p. from 2000 levels.

Improved labour market conditions have led to higher wage growth

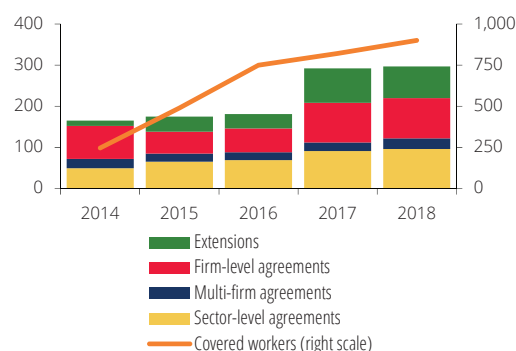
Similarly to the euro area, improved labour market conditions in Portugal have led to higher wage growth in the most recent period (Box 1). In 2018, wages per employee in the economy as a whole grew by 2.2% (1.6% in 2017), while base wages per employee declared to Social Security grew by 2.4% on average, which accounts for an acceleration from 1.7% in 2017 (Chart I.5.16). Wage developments also reflect the greater momentum in collective bargaining in Portugal. In 2018, 311 new collective agreements were released, covering approximately 900 thousand workers, which led to 3.3% growth in bargained wages (Chart I.5.17). Given its growing importance in wage distribution in Portugal, wage developments in 2018 seem to be also reflecting the increase in the national minimum wage.³⁹ At the beginning of the year, the national minimum wage rose from €557 to €580, which corresponds to a cumulative increase of 19.6% since end-2014.

Chart I.5.16 • Indicators of wage developments | Growth rate, in percentage



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

Chart I.5.17 • Number of collective wage agreements and thousands of covered workers



Source: Directorate-General for Employment and Labour Relations.

39. 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 workers earning the national minimum wage was 21.6% in October 2017, compared with 7.4% in October 2008. The information obtained from the registers in the labour compensation fund (*Fundo de Compensação do Trabalho*) shows that 40% of new contracts set a remuneration equal to the national minimum wage in the first six months of 2018.

Box 4 • Contribution of the trade and repair sector to activity and employment

The car wholesale and retail trade and repair sector played an important role in the economic recovery following the sovereign debt crisis in Portugal. This box briefly features the sector and quantifies its contribution to the growth of GVA and employment in the recent expansion period.

This sector consists of three main sub-sectors:

- NACE code 45 regarding wholesale and retail trade and repair of motor vehicles and motorcycles;
- NACE code 46 regarding wholesale trade, except of motor vehicles and motorcycles, which encompasses the resale of goods to retailers, to intermediaries and to industrial, commercial, institutional or other professional consumers; and
- NACE code 47 regarding retail trade, except of motor vehicles and motorcycles, related to the resale of new or used articles to the general public, intended for consumption.

This sector is crucial in an economy as it takes goods from producers to consumers, allowing the producer to reach a greater number of markets and increasing the diversity of goods available to the consumer.

In Portugal, the sector consists mainly of micro and small corporations, which account for 98.7% of all corporations (figures referring to 2017) (Table C4.1). Large corporations account for only 0.2% of the total, but account for 36.4% of turnover in the sector. Compared with the population of non-financial corporations, the trade and repair sector covers 25% of the total number of corporations in Portugal.

Table C4.1 • Characterisation of Wholesale and retail trade; repair of motor vehicles and motorcycles sector | In percentage and number of enterprises

	Distribution of number of enterprises ⁽¹⁾				Number of corporations ⁽¹⁾	Share on sector GVA	Share on sector employment ⁽²⁾
	Micro-sized corporations	Small corporations	Medium-sized corporations	Large corporations			
G – Wholesale and retail trade; repair of motor vehicles and motorcycles	90.1	8.6	1.1	0.2	107.003	100	100
45 – Wholesale and retail trade and repair of motor vehicles and motorcycles	91.3	7.5	1.1	0.2	16.045	8.7	13.2
46 – Wholesale trade, except of motor vehicles and motorcycles	86.8	11.3	1.7	0.2	37.579	50.4	28.7
47 – Retail trade, except of motor vehicles and motorcycles	92.2	7.0	0.7	0.2	53.379	41.0	58.2

Source: Banco de Portugal. | Notes: (1) Data regarding number of enterprises are from 2017. According to the law, micro-sized corporations have fewer than 10 employees and no more than EUR 2 million of turnover and/or total balance sheet. Small corporations have fewer than 50 employees and turnover and/or total balance sheet smaller than EUR 10 million. Medium-sized corporations have fewer than 250 employees and no more than EUR 50 million of turnover or EUR 43 million in the total balance sheet. Large corporations are the ones that don't fit these criteria.

In terms of age, in 2017, 34.7% of corporations had up to five years, 15.9% between six and 10 years, 24.1% between 11 and 20 years and 25.3% existed for more than 20 years.

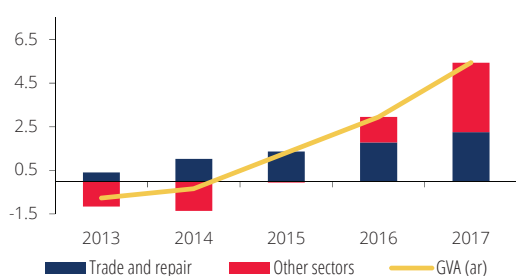
The production of this sector corresponds to the goods distribution service. In order to measure the output of this sector, it is necessary to assign a value to this distribution service, which does not correspond directly to the value of the goods distributed, but rather to the trade margin, that is, the difference between the actual or imputed price realised on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of. The GVA of this sector is then obtained by subtracting from production the value

of intermediate consumption, that is, goods and services consumed in the course of the process of distributing goods.

Between 2013 and 2017, GVA of the wholesale and retail trade and repair of motor vehicles and motorcycles produced cumulative real growth of 15.8%, compared to 5.4% in the total economy. Thus, the contribution of this sector to GVA growth amounted to 2.3 p.p., which represents 41.5% of the total economic growth (Chart C4.1). In a medium-term perspective, the sector was rather resilient during the economic and financial and sovereign debt crises, with almost the entire period showing positive annual GVA growth, thus above 2008 figures.

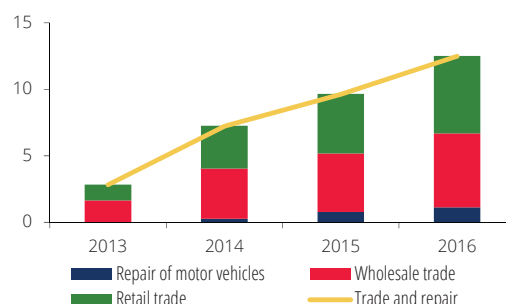
In terms of sub-sectors, wholesale and retail trade have made an equivalent contribution to the accumulated growth of the trade sector's GVA over the period from 2013 to 2016, the latest year for which data are available (5.6 and 5.8 p.p. respectively) (Chart C4.2). The contribution of the motor vehicle trade and repair sector was 1.1 p.p.

Chart C4.1 • Sectoral contribution to the change in GVA - Accumulated values
| Annual rate of change, in percentage and contributions, in percentage points



Sources: Statistics Portugal (Banco de Portugal calculations).

Chart C4.2 • Subsectoral contribution to the change in GVA of trade sector - Accumulated values
| Annual rate of change, in percentage and contributions, in percentage points



Sources: Statistics Portugal (Banco de Portugal calculations).

The trade sector's contribution to GVA growth in Portugal is among the highest in the euro area, second only to Italy. For example, the sector accounted for 21.7% of the accumulated growth of GVA in Spain and 15.4% in the euro area in the period 2013-17 (Chart C4.3).

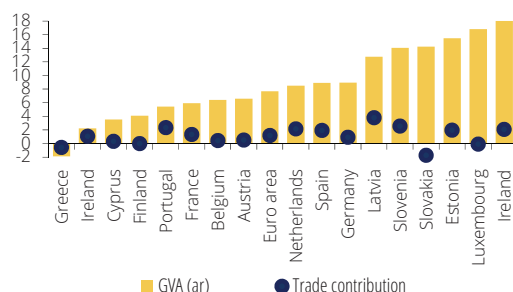
These differences essentially reflect a greater momentum of GVA for this sector in Portugal and, to a lesser extent, the sector's larger share in total GVA in Portugal (Chart C4.4). As a result of developments in the recovery period, the share of the sector in total GVA increased more significantly in Portugal from 13.1% in 2000 to 15.2% in 2017.

Employment (as measured by the number of employees) in the trade and repair sector also grew at a higher rate than employment in the total economy over the period 2013-2017 (12.9% and 4.8%, respectively) (Chart C4.5). The main subsectoral contribution to employment growth was recorded in retail trade, while wholesale trade did not recover from employment decreases during the economic adjustment period (Chart C4.6).

The sector accounted for 26% of accumulated employment growth in the total economy over the period 2013-17, one of the highest in the euro area (Chart C4.7). The share of this sector's employment in total employment increased between 2000 and 2017 from 13.1% to 15.2%, which is relatively close to that observed in the euro area (Chart C4.8).

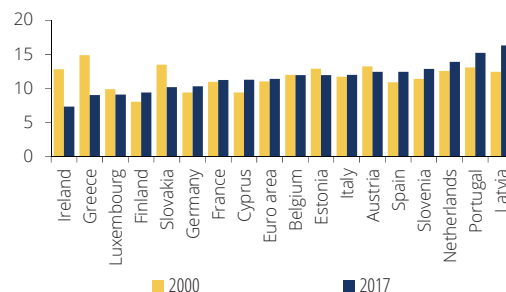
It should also be noted that in recent years economic growth in Portugal was based on a relatively diverse set of sectors, with the contribution of the trade and repair sector assuming a less important role in terms of growth of GVA and employment.

Chart C4.3 • International comparison of GVA growth and contribution of trade sector - Accumulated values 2013-17 | Annual rate of change, in percentage and contributions, in percentage points



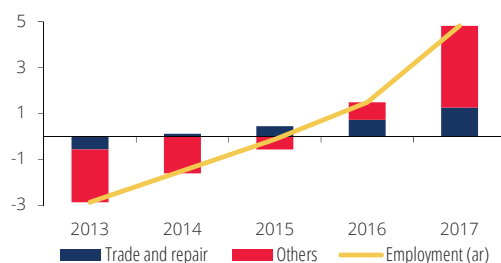
Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Note: the annual rate of change of Irish GVA is 57.5%

Chart C4.4 • Share of trade sector in total GVA | In percentage



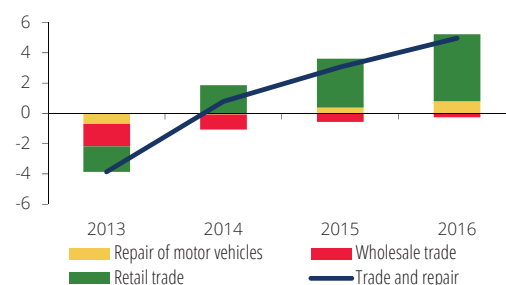
Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations).

Chart C4.5 • Sectoral contribution to the change in employment (number of employees) - Accumulated values | Annual rate of change, in percentage and contributions, in percentage points



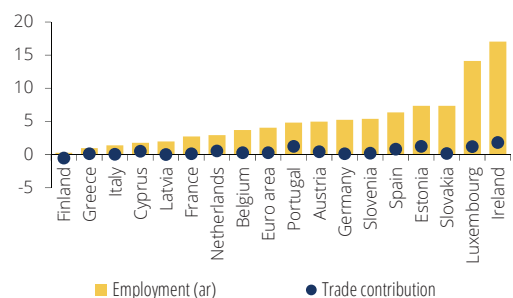
Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations).

Chart C4.6 • Subsectoral contribution to the change in employment in trade sector - Accumulated values | Annual rate of change, in percentage and contributions, in percentage points



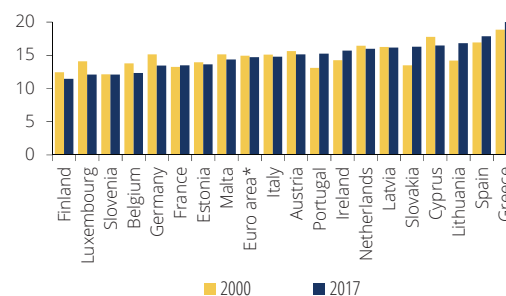
Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations).

Chart C4.7 • International comparison of employment growth and trade sector contribution - Accumulated values 2013-17 | Annual rate of change, in percentage and contributions, in percentage points



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

Chart C4.8 • Share of trade sector in total employment | In percentage



Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Note: (*) The most recent observation corresponds to 2016.

6 Demand

∴ Economic activity decelerated in 2018, in line with the euro area

In 2018 economic activity in Portugal recorded a real growth rate of 2.1%, which is lower than that observed in 2017 (2.8%) (Table I.6.1). This was in line with cyclical developments in the euro area. In 2018 real GDP exceeded the level recorded in 2008, standing 1.2% above that level (Chart I.6.1).

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

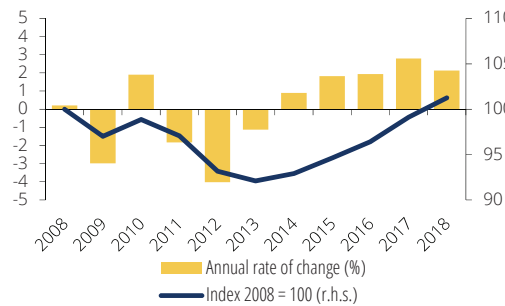
	% of GDP in 2017	2014	2015	2016	2017	2018	2017		2018	
							S1	S2	S1	S2
GDP	100.0	0.9	1.8	1.9	2.8	2.1	3.1	2.5	2.4	1.9
Domestic demand	99.2	2.2	2.7	2.0	3.0	2.8	2.9	3.2	2.7	2.8
Private consumption	64.8	2.3	2.3	2.4	2.3	2.5	2.2	2.4	2.5	2.6
Public consumption	17.5	-0.5	1.3	0.8	0.2	0.8	-0.2	0.6	1.0	0.7
Investment	16.9	5.3	6.4	1.7	9.2	5.7	9.3	9.2	5.5	6.0
GFCF	16.6	2.3	5.8	2.3	9.2	4.4	10.8	7.7	4.6	4.3
Change in inventories ^(a)	0.3	0.5	0.1	-0.1	0.0	0.2	-0.2	0.3	0.2	0.3
Exports	42.7	4.3	6.1	4.4	7.8	3.6	9.0	6.7	5.9	1.4
Imports	41.9	7.8	8.5	4.7	8.1	4.9	8.3	7.9	6.5	3.3
Contributions of domestic demand net of imports^(b)		0.3	1.1	0.9	1.3	1.3	1.3	1.3	1.2	1.5
Contributions of net exports^(b)		0.6	0.6	0.9	1.5	0.8	1.8	1.3	1.2	0.5
<i>Memo item:</i>										
GDP - change over the previous period							1.3	1.2	1.2	0.7
Domestic demand (exc. change in inventories)	98.9	1.8	2.6	2.1	3.0	2.5	3.1	2.9	2.6	2.5

Sources: Statistics Portugal and Banco de Portugal calculations. | Note: (a) Contributions to the annual rate of change of real GDP, in percentage points. (b) 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 the Box entitled "Uptade of the import content of global demand for the Portuguese economy" in the March 2019 issue of the *Economic Bulletin*.

∴ The deceleration in activity reflected the slowdown in exports and, to a lesser extent, in GFCF

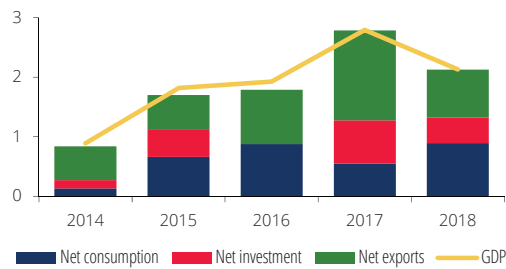
The 2018 slowdown in GDP reflected the lower contribution from exports net of import content to growth (from 1.5 p.p. in 2017 to 0.8 p.p. in 2018). The net contribution of domestic demand to growth remained unchanged at 1.3 p.p., but with a slight shift between items. There was an increase in the contribution from private consumption (from 0.6 p.p. in 2017 to 0.8 p.p. in 2018) alongside a lower contribution from investment (from 0.7 p.p. in 2017 to 0.4 p.p.) (Chart I.6.2). This lower contribution from investment was the result of a deceleration in gross fixed capital formation (GFCF), in particular the business component. The slowdown in exports is also behind the deceleration in activity in the euro area (Chart I.6.3).

Chart I.6.1 • Real GDP | Annual rate of change, in percentage, and index 2008 = 100



Source: Statistics Portugal.

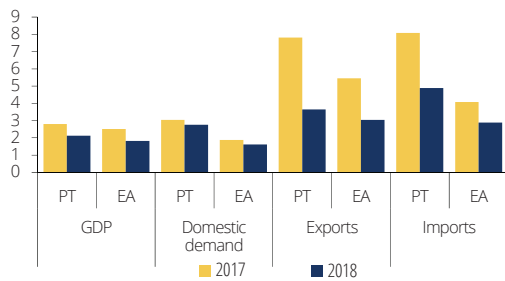
Chart I.6.2 • Net contributions to the annual rate of change of GDP | In percentage and percentage points



Sources: Statistics Portugal and Banco de Portugal calculations. | Note: The difference between the sum of the contributions and the annual rate of change of GDP is due to the non-additivity of the components in chain linked volumes.

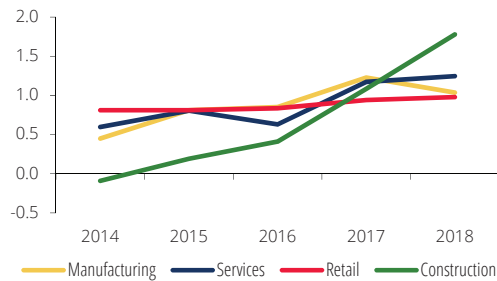
In 2018 there was a decrease in confidence in manufacturing in Portugal, a sector more exposed to external developments, while confidence in other sectors, which are more dependent on the domestic market, remained at relatively high levels (Chart I.6.4).

Chart I.6.3 • Decomposition of GDP growth in Portugal and the euro area | Annual rate of change, in percentage



Sources: Eurostat and Statistics Portugal.

Chart I.6.4 • Sectoral confidence indicator | Balance of respondents on a standardised annual average



Sources: European Commission and Banco de Portugal calculations. | Note: The annual average of balance of respondents of the categories was considered. The standardisation process consisted of deviations from the average of the last 10 years, dividing by the respective standard deviation in those 10 years.

In terms of the intra-annual profile, activity growth was lower in the second half of the year, extending a slowdown trend observed since mid-2017. These developments were determined by the behaviour of exports, while the contribution of domestic demand net of import content to growth increased in the second half of 2018, mainly reflecting a higher net contribution of private consumption (Table I.6.1).

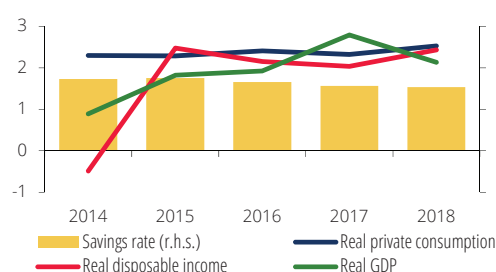
Slight acceleration in private consumption in line with developments in disposable income

Private consumption recorded annual growth of 2.5% in 2018 (2.3% in 2017). Private consumption growth has been close to 2.4% since 2014, slightly exceeding the pace of average annual growth in real disposable income and GDP in the same period (Chart I.6.5). These developments resulted in the savings rate remaining at historically low levels.

The main determinants of private consumption continued to develop favourably in 2018. Real disposable income grew slightly above that observed in 2017, against a background where an acceleration in nominal wages offset the lower growth of employment and there was a higher growth in transfers received by households, reflecting in particular developments in expenditure on pensions (Chart I.6.6) (Chapter 4). Consumer confidence receded somewhat in 2018, but remained close to peak levels. The maintenance of favourable financial conditions – lower borrowing costs and easier access to credit – continued to support buoyant household consumption, especially of durable goods (Box 5).

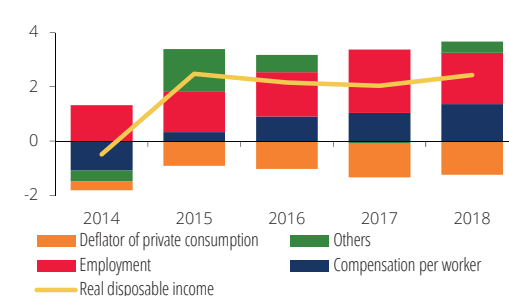
The household deleveraging process continued in 2018, but at a slower pace (Chapter 3).

Chart I.6.5 • Private consumption, disposable income, GDP and savings rate | Annual rate of change in percentage and as a percentage of households' disposable income



Source: Statistics Portugal.

Chart I.6.6 • Annual rate of change of real disposable income and contributions | In percentage and percentage points



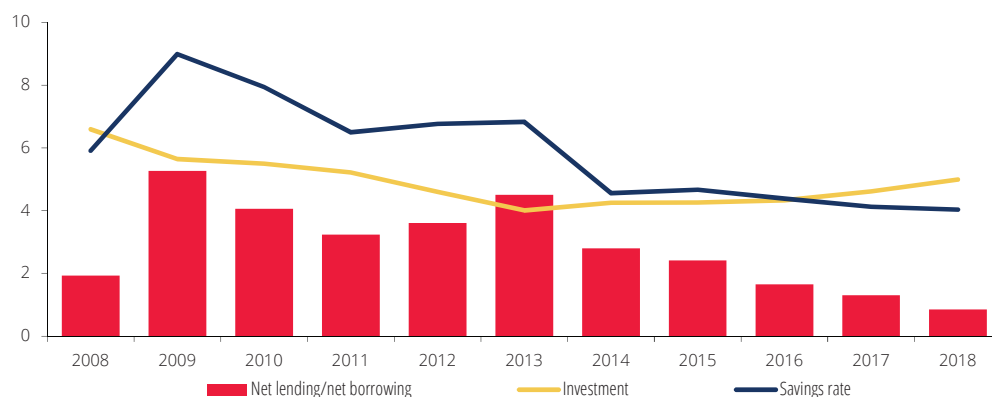
Sources: Statistics Portugal and Banco de Portugal calculations.

In a context of stabilisation of the savings rate, the increase in household investment as a percentage of disposable income led to a reduction of the net lending of households in 2018 (Chart I.6.7).

In terms of the composition of private consumption in 2018, current consumption accelerated, posting a growth rate of 2.3%, from 1.9% in the previous year. By contrast, household expenditure on durable goods grew at a slower pace (5.0% against 6.2% in 2017). These developments extended the trends observed in recent years (Chart I.6.8).

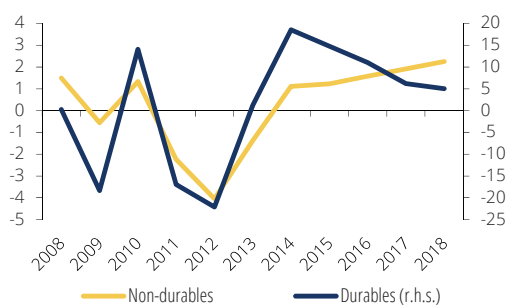
The deceleration in consumption of durable goods was visible in the car component and in the other durable goods component. The strong growth of consumption of durable goods in recent years is related to expenditure decisions that had been postponed during the recession, and has been supported by credit flows. The share of consumption of durable goods financed by credit has increased, to levels above those recorded in 2010 (Chart I.6.9). The stock of durable goods declined significantly during the recession and, despite a recovery in the most recent period, it is still below the levels observed prior to the crisis (Chart I.6.10).

Chart I.6.7 • Investment, savings and net lending/net borrowing - households | In percentage of disposable income



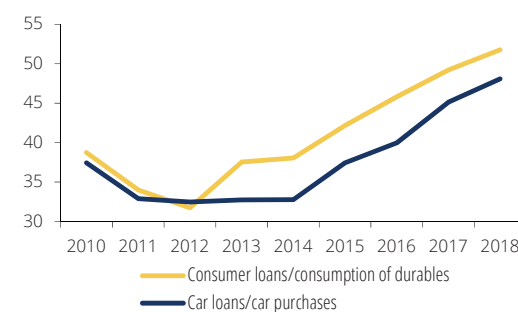
Source: Statistics Portugal.

Chart I.6.8 • Annual rate of change of durables and non-durables consumption | In percentage



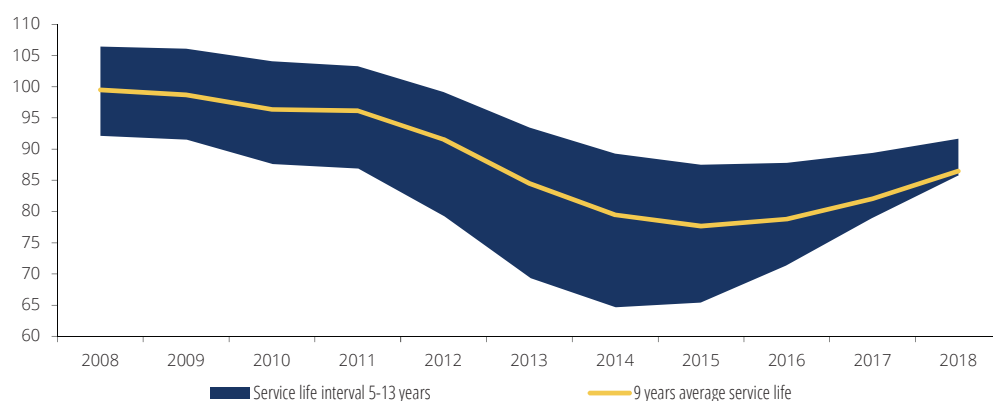
Source: Statistics Portugal.

Chart I.6.9 • New loans for consumption granted by resident financial institutions | In percentage of durables consumption and car purchases



Sources: Banco de Portugal and Statistics Portugal. | Note: Does not include revolving credit (i.e., 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.6.10 • Stock of durables | Index 2001 = 100



Source: Statistics Portugal and Banco de Portugal calculations. | Note: For more details on the methodology involved, see the Box entitled "An analysis of developments in the stock of consumer durable goods in Portugal" in the June 2017 issue of the *Economic Bulletin*.

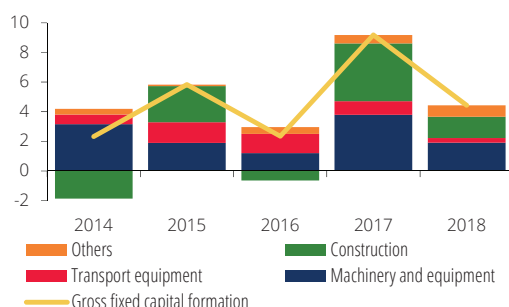
Lower investment growth, in particular of corporate GFCF

In 2018 investment decelerated, growing by 5.7% (9.2% in 2017). This deceleration was due to the behaviour of GFCF, which continued to show a higher pace of growth than activity, but lower than in 2017. In turn, the contribution from changes in inventories to GDP growth was higher in 2018 (Table I.6.1).

GFCF deceleration was broadly based across its main components. GFCF in construction decelerated by 5.2 p.p., growing by 3.1% in 2018, and GFCF in transport equipment decelerated by 7.1 p.p., growing by 3.6%. GFCF in machinery and equipment showed considerable momentum, growing by 6.9% in 2018, but to a lesser extent than in 2017 (14.4%) (Chart I.6.11).

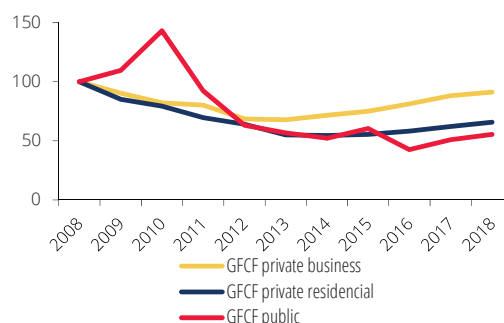
By institutional sector, investment in the private and public sectors increased in 2018. However, private corporate GFCF decelerated to 3.5% (8.4% in 2017), a rate lower than those observed in the recent expansion period. This component is closest to the levels observed prior to the international financial crisis (Chart I.6.12). The expansion of corporate GFCF continued to be underpinned by a positive outlook for demand and favourable financing conditions. The maintenance of high levels of capacity utilisation in industry and services, and the need to replace the capital stock have been other factors driving corporate investment decisions. However, increased uncertainty at the world level, associated with the possibility of some countries implementing protectionist measures, with negative effects on international trade flows, together with the impact of the completion of a number of large investment projects in 2017, have likely contributed to the slowdown in 2018.

Chart I.6.11 • Contributions to the annual rate of change of gross fixed capital formation | In percentage and percentage points



Source: Statistics Portugal.

Chart I.6.12 • Breakdown of gross fixed capital formation by institutional sectors | Index 2008 = 100

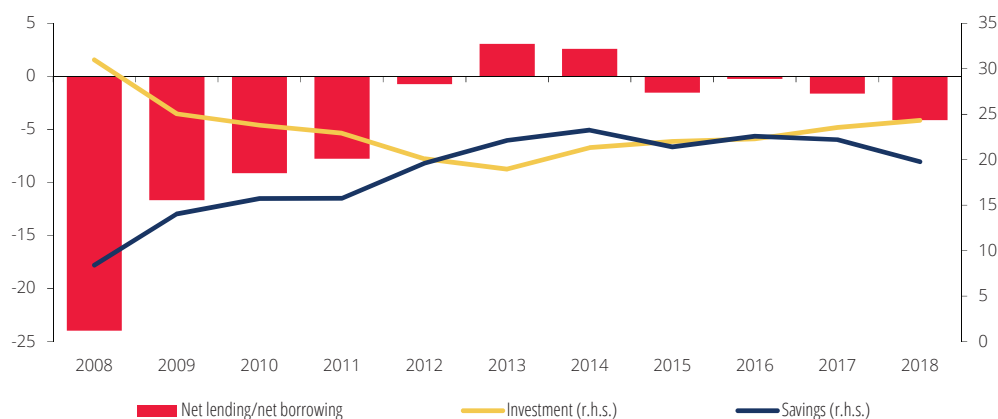


Sources: Banco de Portugal and Statistics Portugal.

Increased investment has resulted in higher credit demand, as reflected in the responses to the *Bank Lending Survey* (Chapter 3). Net borrowing of non-financial corporations increased in 2018, in the midst of a decrease in savings as a percentage of GVA (reflecting a decrease in gross operating surplus⁴⁰) (Chart I.6.13). A more significant recovery in the levels of corporate investment ensuring a higher GDP growth over the medium term requires an increase in the levels of domestic savings.

40. Gross operating surplus corresponds to gross value added less compensation of employees and net taxes on production and imports.

Chart I.6.13 • Investment, savings and net lending/net borrowing - non-financial corporations | In percentage of GVA



Source: Statistics Portugal.

Private residential GFCF grew at a rate relatively close to that observed in 2017, in a background of maintenance of the main growth factors, namely an increase in demand from residents and non-residents and access to financing at low interest rates. At the end of 2018, the levels of this GFCF component were still far below those observed before the crisis.

In 2018 GFCF of the public sector increased for the second year in a row. Nevertheless, there was a deceleration compared to 2017 and the levels of this GFCF component remain significantly below 2008 levels (Chapter 4) (Chart I.6.12).

Deceleration in exports reflected developments in external demand and small gains in external market share

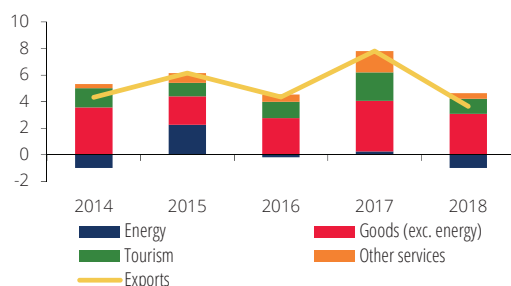
In terms of international trade, exports and imports decelerated in 2018. Exports of goods and services grew by 3.6% in real terms, compared to 7.8% in 2017. For imports, growth decreased from 8.1% in 2017 to 4.9% in 2018. This higher import growth compared to export growth had a negative impact on the goods and services account balance.

The slowdown in exports was broadly based, but particularly pronounced in services (Chart I.6.14). In terms of exports of goods, the growth rate was 3.1%, compared to 5.9% in 2017, with fuel exports declining and exports of other goods decelerating.

According to information in nominal terms on international trade by type of good, the deceleration in exports of goods excluding fuels extended to all components, with the notable exception of cars (Chart I.6.15).

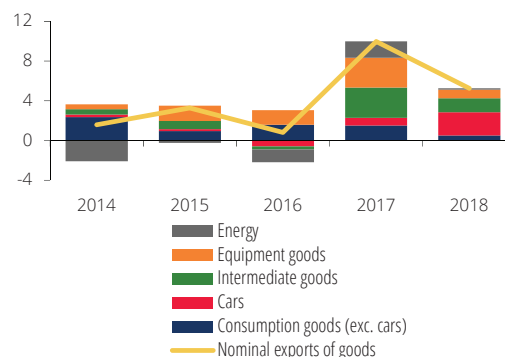
The nominal deceleration in exports of goods was due mainly to the behaviour of extra-EU sales. Exports of goods to intra-EU markets continued to grow robustly (8.1%, compared to 8.4% in 2017). The deceleration in exports of goods to Spain, France and Germany was offset by higher growth in exports to Italy. In the extra-EU market, exports of goods declined (-2.9%, from 14.6% in 2017). The decrease in sales to Angola, China and Brazil has largely contributed to this fall (Chart I.6.16).

Chart I.6.14 • Contributions to the annual rate of change of real exports of goods and services | In percentage and percentage points



Sources: Banco de Portugal and Statistics Portugal.

Chart I.6.15 • Contributions to the annual rate of change of nominal exports of goods | In percentage and percentage points

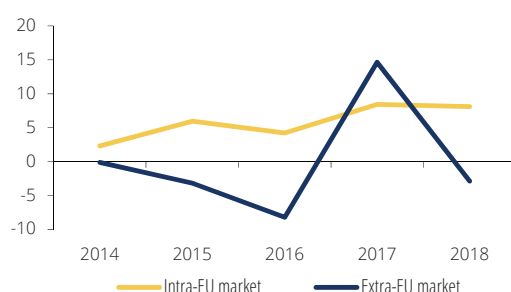


Source: Statistics Portugal.

Exports of services grew by 4.8% in real terms, which corresponds to a deceleration of 7.3 p.p. compared to 2017. Despite this deceleration, tourism exports remained buoyant, with a growth rate of 7.5% (15.4% in 2017).

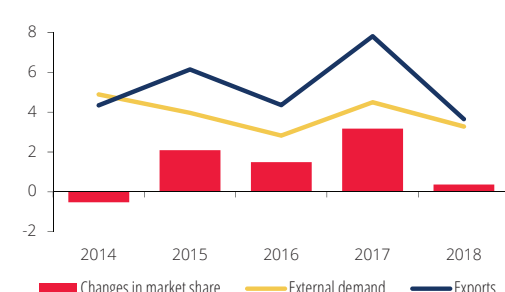
The deceleration in exports of goods and services was driven by the slowdown in external demand and lower market share gains (Chart I.6.17). The gain in market share (0.3 p.p. in 2018, compared to 3.1 p.p. in 2017) continued to be linked to the dynamism of tourism, also benefiting from strong growth in car exports. By contrast, fuel exports likely contributed negatively to the change in market share.

Chart I.6.16 • Annual rate of change of nominal exports of goods to intra and extra-EU markets | In percentage



Source: Statistics Portugal.

Chart I.6.17 • Exports, external demand and market share | Annual rate of change, in percentage, and percentage points

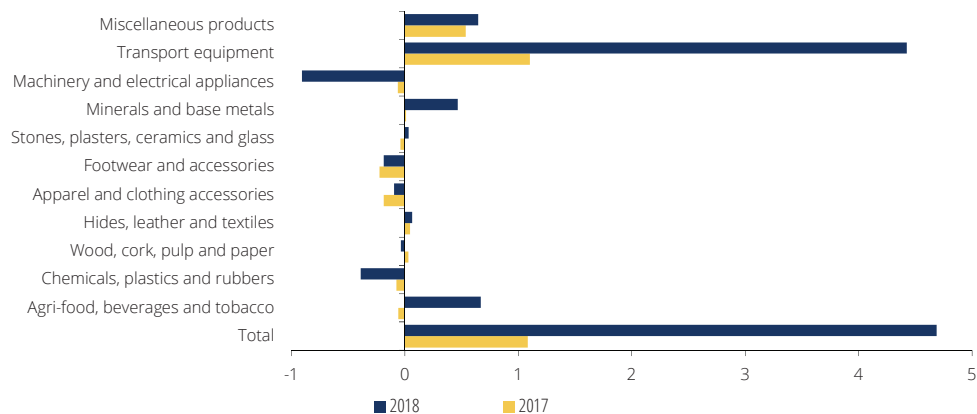


Sources: ECB, Statistics Portugal and Banco de Portugal calculations.

Data used for the calculation of the market share of exports in real terms are available in aggregate terms only. A more detailed analysis of changes in the market share of goods in nominal terms is possible using other databases. The results of this analysis indicate a gain in the market share

of Portuguese exports of goods excluding fuels,⁴¹ in nominal terms, in EU countries.⁴² As in 2017, gains were mainly concentrated in the transport equipment market, and were relatively broadly based in terms of geographic markets (Chart I.6.18). In 2018 there was a loss of share in nominal terms in extra-EU markets, particularly in Brazil and China. Exports to extra-EU markets show greater volatility. The market share loss in 2018 must be compared to the significant gains seen in previous years.

Chart I.6.18 • Contribution from each group of products to the intra EU market share effect
| Percentage points



Sources: CPB, Statistics Portugal and Banco de Portugal calculations. | Note: For more details on the methodology involved, see the Box entitled “Recent developments in the market share of Portuguese exports” in the June 2018 issue of the *Economic Bulletin*.

With regard to the performance of tourism, on the basis of data up to the third quarter of 2018, exports of this type of service in Portugal continued to show positive developments compared with most of the main competitor Mediterranean countries. Cumulative growth in Portuguese tourism exports since 2008 continues to stand out, despite the recent strong recovery in a number of emerging markets (Chart I.6.19 and I.6.20).

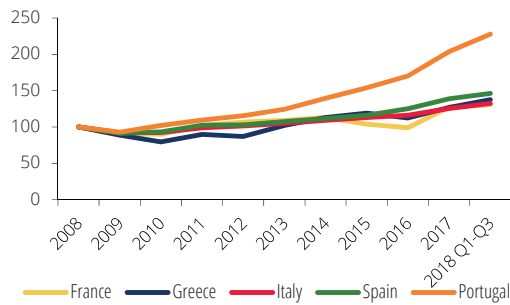
Imports also slowed down and this slowdown was extended to all types of goods and to tourism and other services (Chart I.6.21). However, import growth remained above that of global demand, resulting in an increase in the degree of import penetration.

In nominal terms, a deceleration in imports of goods excluding fuels was broadly based across all components. The largest contributions to growth in imports of goods in 2018 resulted, however, from the behaviour of intermediate and equipment goods, similarly to 2017. This contrasts with previous years, in which the contribution from imports of consumer goods had been the most significant (Chart I.6.22).

41. Given the detailed information, it is possible to exclude the fuel component from the analysis, as the sharp price fluctuations in this type of goods undermine the conclusions of an analysis in nominal terms.

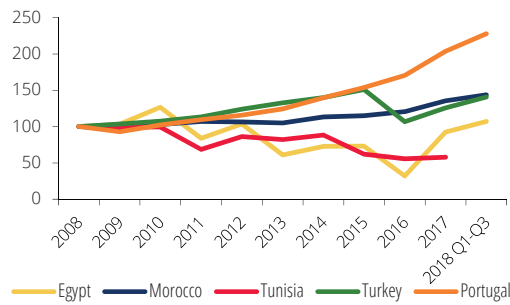
42. For further information, see Box 3 “Recent developments in the market share of Portuguese exports”, *Economic Bulletin*, June 2018.

Chart I.6.19 • Nominal tourism exports in the mediterranean countries - euro area
| Index 2008 = 100



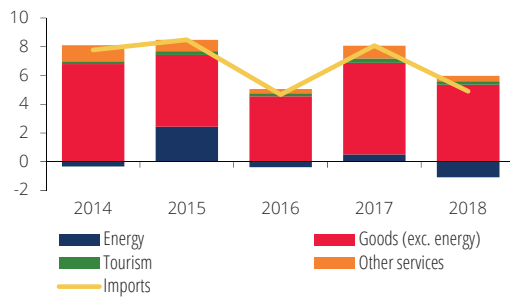
Sources: IMF and Banco de Portugal calculations.

Chart I.6.20 • Nominal tourism exports in the mediterranean countries - emerging countries
| Index 2008 = 100



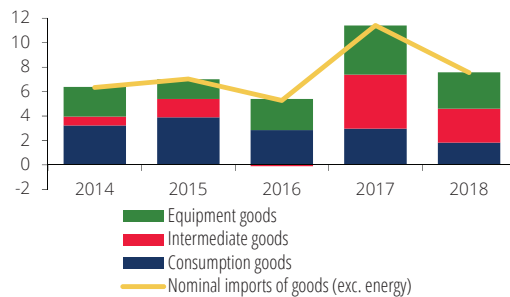
Sources: IMF and Banco de Portugal calculations. | Note: There are no data for 2018 for Tunisia.

Chart I.6.21 • Contributions to the annual rate of change of real imports of goods and services | In percentage and percentage points



Sources: Banco de Portugal and Statistics Portugal.

Chart I.6.22 • Contributions to the annual rate of change of nominal imports of goods excluding energy | In percentage and percentage points



Source: Statistics Portugal.

Box 5 • Consumption, credit and financial investments of households

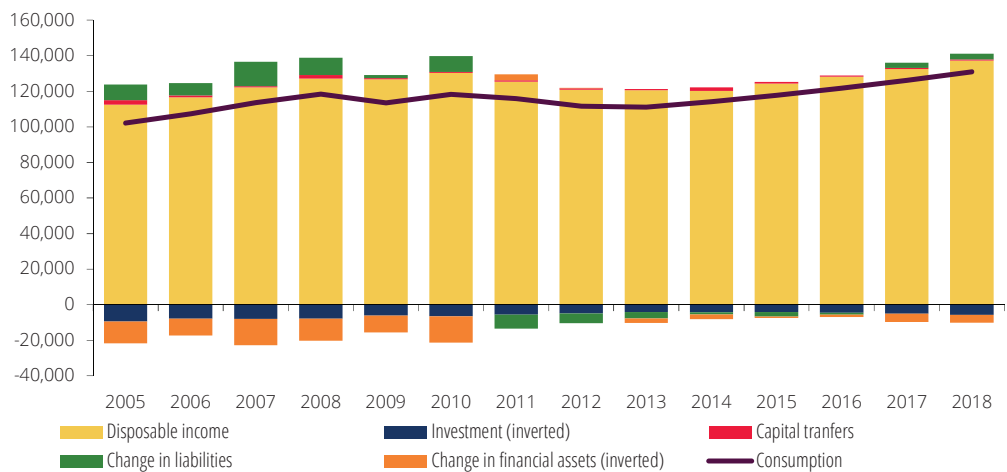
From the perspective of the life cycle theory and the permanent income hypothesis, economic theory identifies a relationship between consumption and long-term resources of individuals and suggests that unanticipated temporary income shocks should be reflected in savings and indebtedness, but not in consumption. According to these assumptions, access to credit is essential to ensure a stable consumption profile throughout an individual's life cycle. Applying these conclusions to the macroeconomic variables has some limitations but, apart from demographic changes and differences in productivity (which is reasonable to assume in the short term), these theoretical assumptions also hold in aggregate terms. This box briefly analyses recent developments in private consumption, household credit and household financial investments, on the basis of the aggregate budget constraint of this institutional sector.

In each period, household consumption (C_t) and investment (change in real assets, I_t) are equal to their resources available for spending, i.e. the sum of income (Y_t), capital transfers (T_t) and indebtedness (change in liabilities, ΔP_t), deducted from investment in financial assets (ΔA_t):

$$C_t + I_t = Y_t + T_t + \Delta P_t - \Delta A_t$$

Thus, consumption can be defined as the difference between resources and investment in real and financial assets. Chart C5.1 illustrates this identity with National Accounts data for the period 2005–2018 and shows that a large part of income is used for consumption. The ratio between consumption and income was about 89% in 2005 and is currently around 95%, which means that the saving rate is lower today. Until 2010, households increased their debt and invested in real and financial assets. Liabilities started to decrease in 2011, a process that was reversed in 2017. This analysis is based on aggregate data, which does not make it possible to exploit the heterogeneity of the financial situation of individual households. In principle, individuals who increase their debt are not the same as those investing in financial assets.

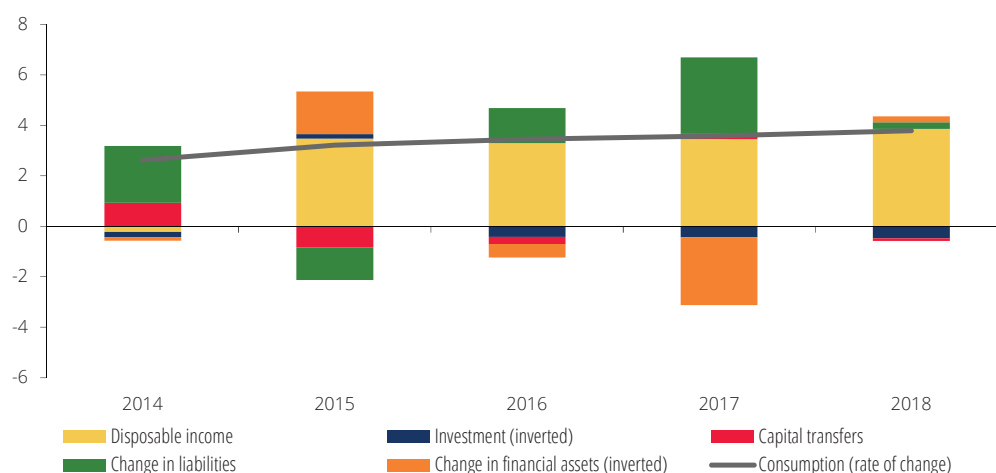
Chart C5.1 • Consumption in nominal terms | Million euros



Sources: Banco de Portugal and Statistics Portugal.

By focusing the analysis on the period of recovery in consumption from 2014 onwards, Chart C5.2 shows the counterparts for the rate of change in consumption of the various items of the budget constraint. In general, consumption developments follow income developments, with symmetrical counterparts from the financial side.⁴³ 2014 was an exception to this pattern, with the financial component being particularly relevant, due to an increase in indebtedness (i.e. the change in liabilities) without a significant counterpart from changes in financial assets. Developments in consumption over this period seem to be consistent with the assumption that changes in income have a greater impact on consumption when they are persistent in nature. In 2016 the effect of the increase in indebtedness was also accompanied by an effect with the opposite sign of a re-emergence of investment in real assets and changes in financial assets.

Chart C5.2 • Counterpart for the rate of change of consumption in nominal terms | Percentage and percentage points



Sources: Banco de Portugal and Statistics Portugal.

Chart C5.3 focuses on the decomposition of the counterpart on the liability side in several components, namely new loans and loan repayments.⁴⁴ The chart shows that, from 2015 onwards, the increase in new loans for housing and for consumption and other purposes was partially offset by an increase in repayments of housing loans.

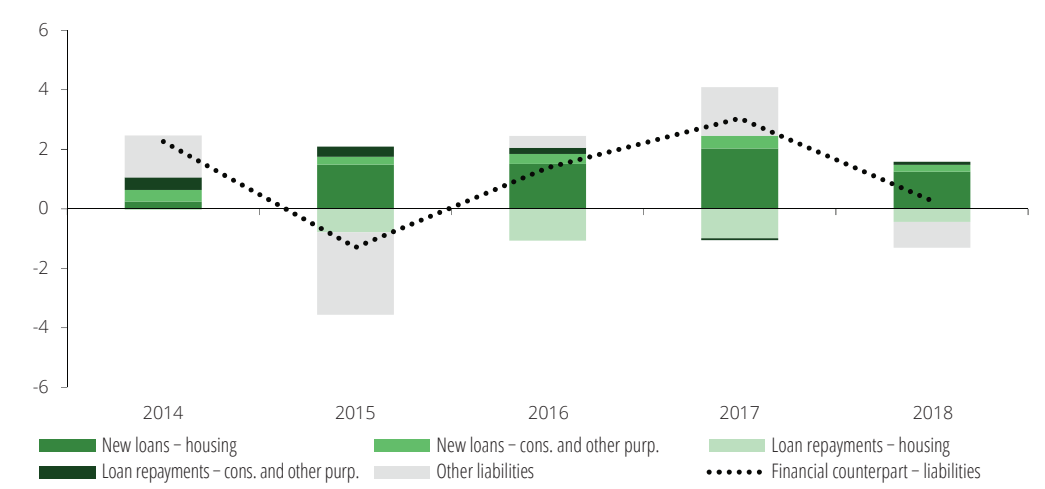
On the financial assets side (Chart C5.4), the decomposition of variations mainly reveals changes in the composition of household portfolios. Investment in life insurance and pension funds decreased in 2015. This effect was mitigated by the effect with opposite sign from an increase in new investment in deposits (in net terms). In 2016 and 2017 new investment in deposits declined, which meant that the counterpart of the change in deposits had a positive sign in these two years. In 2016 this reduction was offset by an increase in new investment (in net terms) in public debt securities. Again, deposits made a negative contribution in 2018, and were also offset in part by changes in other components of households' financial asset portfolios.

43. In Chart C5.2 an increase in the change in liabilities results in a positive counterpart to consumption, and an increase in the change in financial assets results in a negative counterpart.

44. In Chart C5.3 an increase in new loans results in a positive counterpart to consumption, and an increase in repayments results in a negative counterpart. Repayments are roughly calculated by the difference between changes in the stock of credit and new loans.

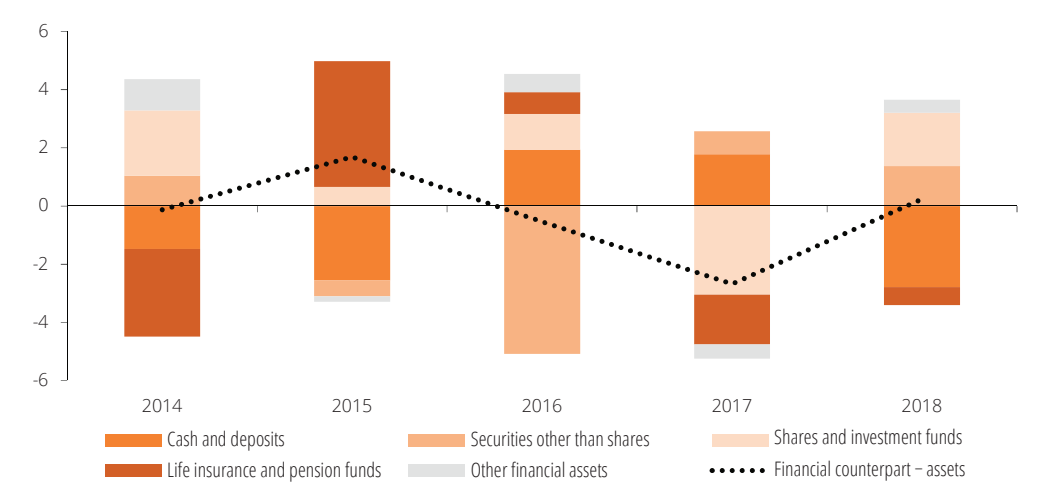
In short, recent developments in consumption have been supported by the recovery in household income. Developments in consumption seem to be consistent with the assumption that shocks to income have a greater impact on consumption when they are persistent in nature. On the financial side, in the most recent period, the increase in new loans has been partly offset by an increase in repayments. On the financial assets side, there has mainly been a reallocation in households financial asset portfolios.

Chart C5.3 • Decomposition of the financial counterpart – liabilities | Percentage points



Sources: Banco de Portugal and Statistics Portugal.

Chart C5.4 • Decomposition of the financial counterpart – assets | Percentage points



Sources: Banco de Portugal and Statistics Portugal.

7 Prices

Decline in the inflation rate in 2018, with a negative differential vis-à-vis the euro area

In 2018 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 1.2%, compared with 1.6% in 2017 (Table I.7.1). The lower rate of change in prices was broadly based across the main aggregates with the exception of energy.⁴⁵ The underlying inflation indicator (excluding food and energy) also decreased (an annual rate of change of 0.8% in 2018, compared with 1.3% in 2017).

Table I.7.1 • HICP - Main components | Rate of change, as a percentage

	Weights 2018	Annual rate of change			Year-on-year rate of change			
		2016	2017	2018	18 T1	18 T2	18 T3	18 T4
Total	100.0	0.6	1.6	1.2	0.9	1.2	1.8	0.8
Total excluding energy	92.1	0.9	1.4	0.9	0.8	0.9	1.3	0.4
Total excluding food and energy	68.9	0.9	1.2	0.8	0.8	0.8	1.3	0.4
Goods	57.8	0.0	0.9	0.5	0.0	0.7	1.0	0.4
Food	23.1	0.8	1.7	1.0	0.8	1.2	1.2	0.6
Unprocessed food	6.3	1.6	2.2	1.3	0.9	2.2	1.5	0.6
Processed food	16.9	0.3	1.6	0.8	0.8	0.7	1.1	0.7
Industrial	34.7	-0.7	0.3	0.2	-0.6	0.4	0.9	0.2
Non-energy	26.7	-0.3	-0.8	-1.1	-1.2	-1.1	-1.1	-1.1
Energy	7.9	-1.8	3.7	4.8	1.7	5.4	7.6	4.6
Services	42.2	1.5	2.5	2.1	2.0	2.0	2.9	1.3
<i>Memo items:</i>								
Contribution of administered prices (in pp)	–	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Contribution of taxes (in pp)	–	0.0	-0.2	0.0	0.0	0.0	0.0	0.0
Consumer Price Index (CPI)	–	0.6	1.4	1.0	0.8	1.0	1.4	0.8
HICP - Euro Area	–	0.2	1.5	1.8	1.3	1.7	2.1	1.9

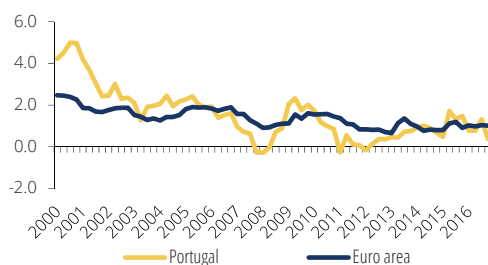
Sources: Eurostat and Statistics Portugal.

By contrast, the euro area inflation rate increased to 1.8% in 2018 (compared with 1.5% in 2017). However, the underlying inflation indicator remained low (1.2% in 2018, compared with 1.1% in 2017) (Chart I.7.1). The recovery in underlying inflation in Portugal and the euro area has been slower than expected, considering the phase of economic expansion, specifically the closing of the output gap and the reduction in labour market slack.

The inflation differential in Portugal vis-à-vis the euro area turned negative in 2018 (-0.6 p.p., compared with +0.1 p.p. in 2017) (Chart I.7.2). This differential reflected the contribution of the majority of the main HICP aggregates, with the exception of services, which continued to have a positive differential, although below that of the previous year.

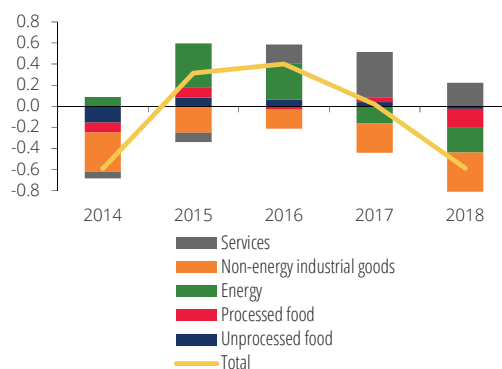
45. In January 2019, Eurostat and Statistics Portugal began compiling HICP special aggregates from a more exact allocation of products on the basis of the European Classification of Individual Consumption according to Purpose, which provides a more detailed level of breakdown than the product classification used thus far. This change took effect in January 2017 and resulted in a change in the indices and year-on-year rates of change from that date onwards.

Chart I.7.1 • HICP excluding food and energy
| Year-on-year rate of change, in percentage



Sources: Eurostat and Statistics Portugal.

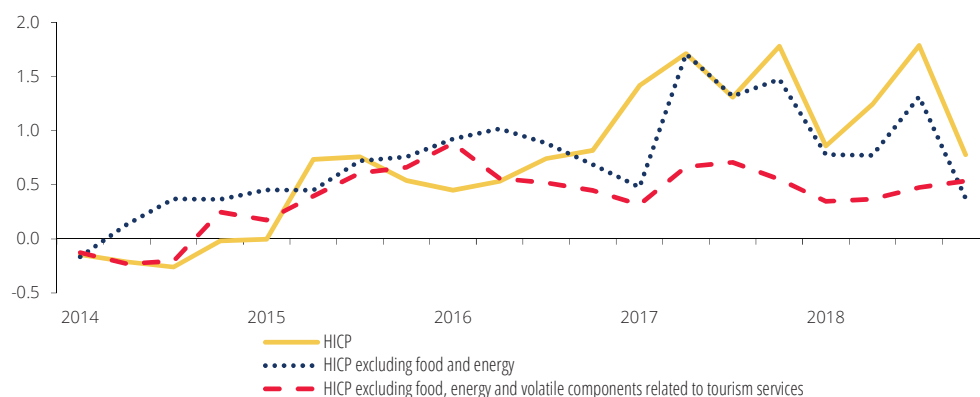
Chart I.7.2 • Inflation differential between Portugal and the euro area
| Contributions, in percentage points



Sources: Eurostat and Statistics Portugal.

The intra-annual profile of inflation in Portugal continued to be characterised by high volatility, related not only to components which are traditionally more volatile (food and energy) but also tourism-related components – package holidays and accommodation and flights (Chart I.7.3). The volatility of tourism-related components is partly associated with volatility in demand for tourism services, which has been experiencing changes in its seasonal pattern, with higher demand in less traditional periods.⁴⁶ The methodological change in the collection of accommodation prices introduced by Statistics Portugal at the beginning of the year may have also contributed to higher volatility in the series in 2018.⁴⁷

Chart I.7.3 • Inflation in Portugal | Year-on-year rate of change, in percentage



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

46. On this topic, see Special Issue “Tourism exports: recent developments and future prospects”, pp. 35-51, *Economic Bulletin*, December 2018.

47. On this issue, see [Statistics Portugal press release](#) on the publication of the CPI for November 2018.

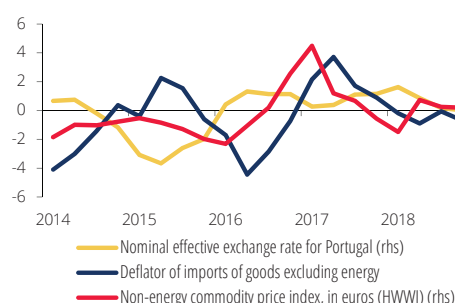
More subdued external inflationary pressures

In 2018 external inflationary pressures remained subdued and below those observed in 2017.

Import prices of goods excluding energy declined by 0.5% in 2018, compared with growth of 2.1% in 2017 (Chart I.7.4). These developments are likely to be related to less pronounced global inflationary pressures, partly reflecting a slowdown in non-energy commodity prices. Likewise, the nominal effective exchange rate relevant to the Portuguese economy continued to appreciate, although less sharply than in 2017. Import prices mostly affect developments in consumer prices for non-energy industrial goods, owing to their higher import content. Prices in this aggregate declined by 1.1% in 2018, compared with a drop of 0.8% in 2017.

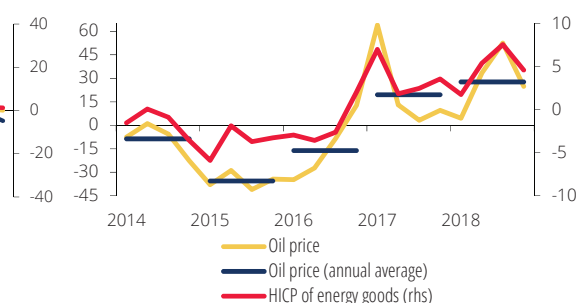
By contrast, international oil prices in euro increased again in 2018, recording a higher average annual increase than in 2017 (Chart I.7.5). Oil prices rose up to the third quarter of 2018, followed by a decline in the last quarter of the year. Energy consumer prices in Portugal increased by 4.8% throughout the year (compared with 3.7% in 2017).

Chart I.7.4 • Deflator of imports excluding energy goods, commodity price index and nominal effective exchange rate for Portugal
| Year-on-year rate of change, in percentage



Sources: Statistics Portugal and HWWI (Banco de Portugal calculations).
| Notes: positive changes in the exchange rate correspond to an appreciation of the euro.

Chart I.7.5 • Oil price in euros and HICP of energy goods | Year-on-year rate of change, in percentage



Sources: Bloomberg, ECB and Statistics Portugal.

These developments led to a 2.4% increase in the deflator of imports of goods and services, compared with growth of 4.0% in 2017.

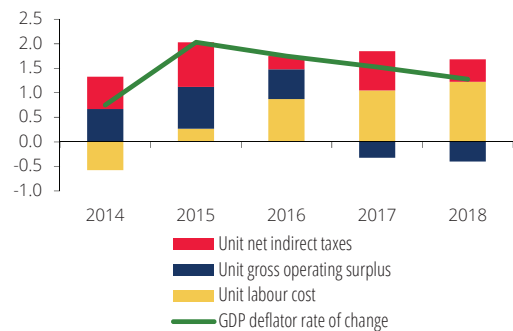
Subdued domestic inflationary pressures despite an acceleration in wages

There is evidence of wage pressures in the labour market, which seem to have intensified in 2018 (Chapter 5). Together with the increase in the minimum wage, lower labour underutilisation resulted in an acceleration to 2.2% in compensation per employee (compared with 1.6% in 2017). Against a background of negative developments in productivity per worker, this acceleration resulted in higher growth in unit labour costs (2.4% in 2018, compared with 2.1% in 2017).

Consequently, the contribution from unit labour costs to changes in the GDP deflator increased in 2018 (Chart I.7.6). By contrast, gross operating surplus per unit of output made a larger negative contribution to changes in the GDP deflator, likely reflecting a decline in corporate profit margins.

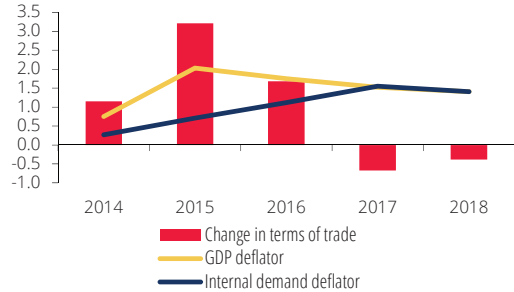
On the expenditure side, developments in the GDP deflator (1.4%, compared with 1.5% in 2017) seem to have mainly reflected developments in the domestic demand deflator, with terms of trade deteriorating slightly, although lesser sharply than in 2017 (Chart I.7.7).

Chart I.7.6 • Decomposition of GDP deflator
| Annual rate of change, in percentage and contributions in percentage points



Sources: Statistics Portugal (Banco de Portugal calculations).

Chart I.7.7 • GDP and internal demand deflator and terms of trade
| Annual rate of change, in percentage



Sources: Statistics Portugal (Banco de Portugal calculations).

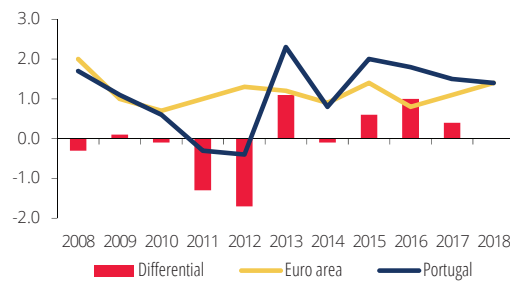
A very limited pass-through of wage pressures to prices – also visible in the euro area – may be related to the environment of low inflation expectations, where firms tend to mitigate the pass-through of higher costs to final prices (Box 6). An additional specific factor which likely contributed to mitigate the price increase in 2018 was the slowdown in the price of tourism-related services, following very sharp increases in the previous year.

⋮ Developments in the GDP deflator in line with the euro area

The GDP deflator in Portugal evolved in line with the euro area in 2018 (Chart I.7.8). Relative unit labour costs (ULCs) vis-à-vis the euro area have increased slightly in the past few years and have not offset the negative differential accumulated during the phase of adjustment of the Portuguese economy (Chart I.7.9). These developments reflect growth of compensation per employee in Portugal in line with the euro area and more adverse developments in productivity in the recent period.

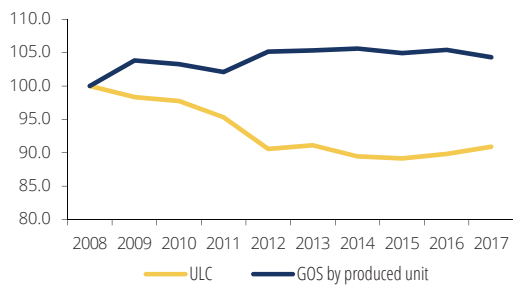
As regards gross operating surplus per unit of output, corporate profit margins remained compressed in 2018, similarly to 2017, which seems to be in tandem with the euro area. These developments follow a period, during the crisis, of increases in Portugal vis-à-vis the euro area. This might be related to the growing need for savings by firms in order to cope with higher financing costs and credit constraints. The closure of relatively less profitable firms may have also contributed to this outcome.

Chart I.7.8 • GDP deflator, Portugal and euro area | Annual rate of change, in percentage



Sources: Eurostat (Banco de Portugal calculations).

Chart I.7.9 • Unit labour costs and gross operating surplus by produced unit | Ratio between Portugal and euro area, index 2008=100



Sources: Eurostat (Banco de Portugal calculations).

Box 6 • Inflation forecasts: Portugal and the euro area

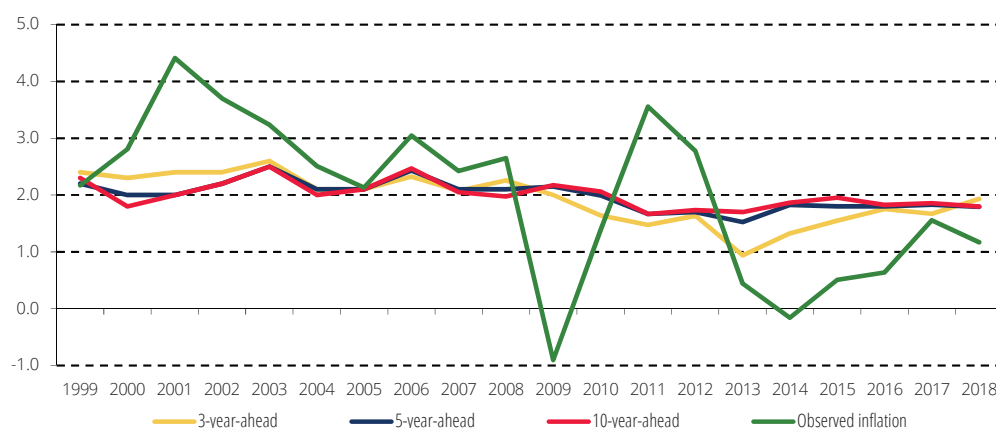
Along with the global economic uncertainty, monitoring developments in macroeconomic variables – and in particular inflation forecasts⁴⁸ – has gained in importance. One of the reasons relates to its relevance when gauging price or wage prospects. In addition, inflation forecasts may be used to evaluate the credibility of a central bank's price stability objective, by assessing to which extent longer-term forecasts are anchored to this objective.

Measures of inflation expectations include, inter alia: (i) forecasts based on surveys of professional forecasters, (ii) forecasts based on surveys of households or firms, or (iii) expectations implied in financial market instruments. One of the surveys of professional forecasters which is widely used for the main macroeconomic indicators (e.g. GDP growth, inflation, interest rates, exchange rates) is released by Consensus Economics. Twice a year, this institution releases long-term inflation forecasts up to a ten-year horizon for the euro area⁴⁹ and several Member States.⁵⁰

This box provides evidence on long-term inflation forecasts in Portugal and the euro area, using information published by Consensus Economics.

Charts C6.1 and C6.2 show inflation forecasts at different horizons (three, five and ten-year-ahead) surveyed in October every year for Portugal and the euro area respectively.

Chart C6.1 • 3, 5 and 10-year-ahead inflation forecasts for Portugal | Annual rate of change, in percentage



Sources: Consensus Economics and Eurostat. | Note: forecasts surveyed every *October t* versus observed inflation at time *t*.

Results reveal that inflation forecasts for Portugal at different horizons stood overall above 2% in the period before 2008. After the global financial crisis, Portugal saw a decline in the level of observed inflation and a downward revision of forecasts to levels below 2%. For the euro area, inflation forecasts have remained very close to the price stability objective and have therefore remained more anchored over time. However, in the period after 2009, three-year-ahead forecasts showed a larger deviation from the ECB's price stability objective, in a context of low observed inflation since 2013.

48. The terms "forecasts" and "expectations" are used interchangeably throughout this box.

49. In 2003 the ECB adopted a quantitative definition of price stability establishing an annual inflation rate below, but close to, 2% over the medium term.

50. Forecasts correspond to the arithmetic mean of the estimates of individual institutions. The number of institutions participating in the survey of 8 October 2018 was 14 in Portugal and 30 in the euro area.

A common feature to both Portugal and the euro area concerns the low volatility of five and ten-year-ahead forecasts, which is in accordance with the notion that, if monetary policy is perceived as a way to control inflation around the price stability objective, shocks affecting current inflation dynamics should not undermine long-term inflation expectations. These results are corroborated by the low levels of dispersion in inflation rates observed since January 1999 among the countries that are part of the economic and monetary union.

Chart C6.2 • 3. 5 and 10-year-ahead inflation forecasts for the euro area | Annual rate of change, in percentage



Sources: Consensus Economics and Eurostat. | Note: forecasts surveyed every *October t* versus observed inflation at time *t*.

8 Balance of payments

Decrease in the net lending capacity of the Portuguese economy in 2018

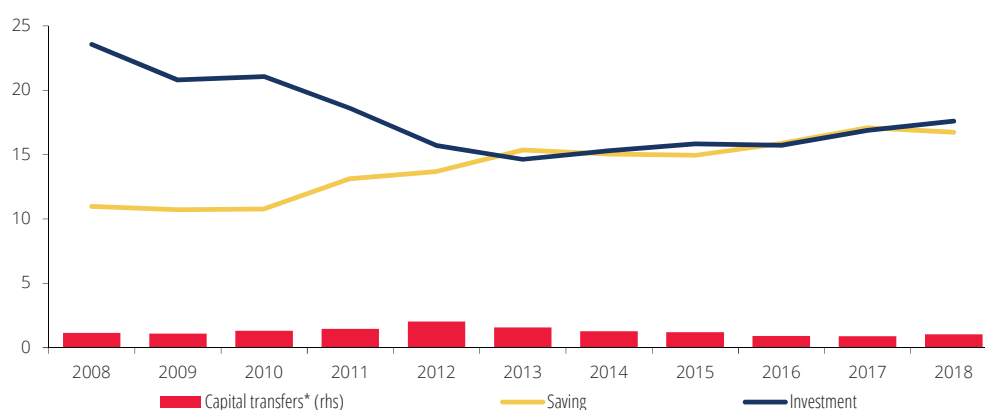
In 2018 the current and capital account surplus decreased to 0.4% of GDP (1.4% of GDP in 2017). These developments reflected higher deficits in the goods and primary income accounts (Table I.8.1 and Chart I.8.1).

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

	2014	2015	2016	2017	2018
Current and capital accounts	1.4	1.3	1.6	1.4	0.4
Current account	0.1	0.1	0.6	0.5	-0.6
Goods and services account	1.1	1.7	2.0	1.8	1.0
Goods	-5.5	-5.3	-5.2	-6.2	-7.3
Energy	-3.6	-2.4	-1.7	-2.1	-2.5
Goods excluding energy	-1.9	-2.9	-3.4	-4.1	-4.8
Services	6.6	7.0	7.2	8.0	8.3
of which:					
Travel and tourism	4.1	4.4	4.7	5.6	5.9
Primary income account	-2.0	-2.4	-2.3	-2.5	-2.8
Secondary income account	0.9	0.9	0.9	1.1	1.2
of which:					
Emigrants / immigrants remittances	1.5	1.6	1.5	1.6	1.6
Capital account	1.3	1.2	1.0	0.9	1.1
Financial account	1.6	1.3	1.6	1.6	0.7
Errors and omissions	0.2	0.0	0.0	0.2	0.3

Sources: Statistics Portugal and Banco de Portugal. | Note: The current and capital account balance and the financial account balance should be identical. In practice, that does not happen due to imperfect sources of information and compilation systems. Therefore, the unbalances that arise from this situation are designated errors and omissions.

Chart I.8.1 • Savings and investment | As a percentage of GDP



Source: Statistics Portugal. | Note: (*) Includes acquisitions of non-produced non-financial assets.

The decrease in the current and capital account surplus reflects the joint effect of a decline in the economy's savings rate and increased investment (Chart I.8.1). The maintenance of external surpluses, needed to further reduce the economy's high external indebtedness levels, means

that, in order to cope with a desirable and sustained increase in investment, domestic savings need to be increased.

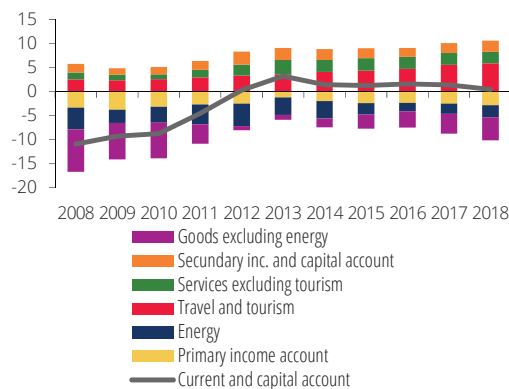
Current account deficit as a result of larger deficits in the goods and primary income accounts

The current account of the Portuguese economy recorded a deficit of 0.6% of GDP in 2018, after four years of surpluses. The goods and services account balance decreased to 1.0% of GDP, but maintained a surplus for the seventh consecutive year following an adjustment that was not linked to cyclical effects (Box 7).

The decomposition of the current account shows that developments in 2018 resulted from increases of 1.1 and 0.3 p.p. of GDP in the deficits of the goods and primary income accounts respectively. By contrast, the surpluses of the services and secondary income accounts increased by 0.3 and 0.1 p.p. of GDP respectively (Chart I.8.2).

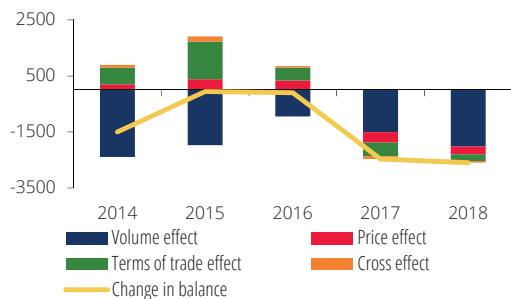
As in the previous year, changes in the goods account balance are explained by an unfavourable volume effect, i.e. real growth of imports above that of exports (Chart I.8.3). Another negative terms of trade effect was added to this effect, associated with developments in international oil prices. Indeed, oil prices increased again in 2018, leading to a larger energy account deficit (an increase of 0.3 p.p. of GDP, to -2.5% of GDP).

Chart I.8.2 • Decomposition of current and capital account balance | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

Chart I.8.3 • Decomposition of the change in goods account balance | Million of euros



Sources: Statistics Portugal and Banco de Portugal. | Note: A positive change (negative) implies an increase (decrease) in the overall balance of the goods account. The change in the overall balance of goods account can be decomposed in four effects: - volume effect – effect of the change in quantities imported and exported; $[X_{t-1}.vxt]-[M_{t-1}.vmt]$ - price effect – effect of the average price growth of external trade; $[X_{t-1}.pt]-[M_{t-1}.pt]$ - terms of trade effect – effect of the relative change in exports and imports prices; $[X_{t-1}.(pxt-pt)]-[M_{t-1}.(pmt-pt)]$ - crossed effect – effect of the interaction between the change in quantities and in prices of exports and imports; $[X_{t-1}.vxt.pxt]-[M_{t-1}.vmt.pmt]$. The following notation applies: X_{t-1} and M_{t-1} are the exports and imports in year $t-1$ at current prices; vxt and vmt are the change rates in volume of exports and imports in t ; pxt and pmt are the change rates of exports and imports prices in t ; pt is the average change rate of the prices of external trade in year t ($(pxt+pmt)/2$).

Tourism exports continued to support the increase in the services account surplus

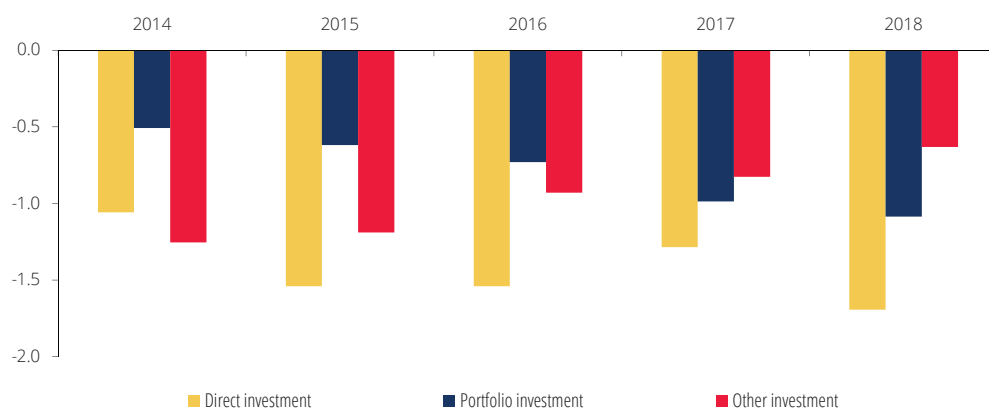
The services account surplus increased to 8.3% of GDP in 2018 (8.0% of GDP in 2017). Both exports and imports of services decelerated in 2018. Exports grew by 6.5%, from 13.3% in 2017, while imports slowed down from 10.5% in 2017 to 6.0% in 2018.

The services account surplus increased to 8.3% of GDP in 2018 (8.0% of GDP in 2017). Both exports and imports of services decelerated in 2018. Exports grew by 6.5%, from 13.3% in 2017, while imports slowed down from 10.5% in 2017 to 6.0% in 2018.

Exports of travel and tourism services decelerated in 2018, continuing nonetheless to grow robustly (9.6%, from 19.5% in 2017) and above main competitors (Chapter 6). On the imports side, a deceleration was also observed, albeit less marked, with the annual change decreasing from 11.5% in 2017 to 9.6% in 2018. The travel and tourism account surplus increased further, reaching 5.9% of GDP (5.6% in 2017). The surplus of the other services account remained unchanged at 2.7% of GDP.

The primary income account recorded a higher deficit in 2018 (-2.8% of GDP, compared to -2.5% of GDP in 2017). The income component of direct investment made the largest contribution to these developments, due to an increase in the payment of dividends abroad (Chart I.8.4). The deficit in the income component of portfolio investment also increased slightly, from 1.0% of GDP in 2017 to 1.1% of GDP in 2018. This reflected less interest received on long-term debt securities, coupled with a reduction in implied interest rates. By contrast, the other investment income deficit decreased both through more interest received and less interest paid abroad, reflecting the latter the early repayment of loans granted under the economic and financial assistance programme (EFAP).

Chart I.8.4 • Balance of investment income⁽¹⁾ | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal. | Note: (1) Investment income is a component of primary income account. Also included in this account are compensation of employees and other primary income.

The capital account surplus increased from 0.9% of GDP in 2017 to 1.1% of GDP in 2018, owing to the sale of non-financial non-produced assets, in particular sales of brands linked to a number of businesses.

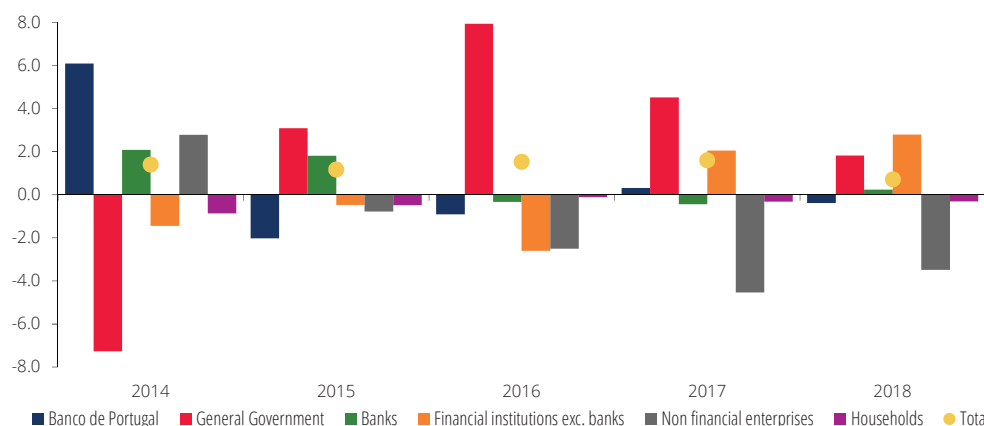
EU funds increased at the end of the year and, for that reason, inflows in 2018 as a whole were similar to those of the previous year (1.8% of GDP).⁵¹

51. For a more detailed review of funds received, see Box 2 entitled "Impact of EU funds on the current and capital account: Portugal 2020 in perspective", *Economic Bulletin*, Banco de Portugal, March 2019, pp. 21-24.

Portugal remained a net investor abroad in 2018, albeit to a lesser extent

On the financial account side, the current and capital account surplus recorded in 2018 was reflected in net investment abroad, to the amount of 0.7% of GDP. In line with developments in the current and capital account surplus, this net investment was lower than in the previous year (1.6% of GDP) (Chart I.8.5).

Chart I.8.5 • Change in net external assets ⁽¹⁾ | As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal. | Note: (1) Change in net external assets corresponds to net acquisitions of assets issued by non-residents less the net external financing obtained. The acquisitions of external assets and the redemption of external liabilities are recorded with a positive sign and represent an outflow of funds. The selling of assets and the issuance of liabilities acquired by non-residents are recorded with a minus sign and represent an inflow for funds in Portuguese economy.

Financial institutions, excluding banks, increased their net external investment to 2.8% of GDP in 2018 (2.0% of GDP in 2017). This investment mainly reflected purchases of long-term debt securities issued by non-resident entities and investment in external deposits.

General government recorded a change in net external assets of 1.8% of GDP, compared to 4.5% of GDP in the previous year. This change resulted from the early repayment (accounting for 2.7 of GDP) of the loan granted by the IMF under the EFAP, which was repaid in full.

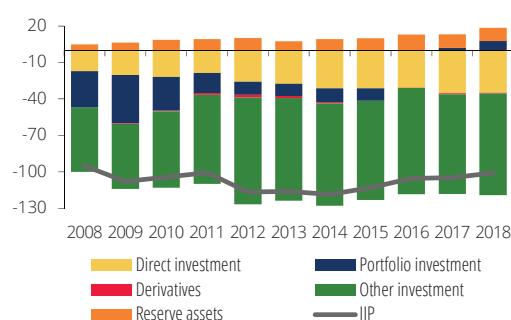
Non-financial corporations (NFCs) remained the main channel for attracting net external lending (3.5% of GDP, which compares to 4.5% of GDP in 2017). As in the previous year, direct investment was the main channel used (2.1% of GDP compared to 4.0% of GDP). In 2018 equity instruments had a larger share in the composition of inflows through direct investment than debt instruments, which was negligible that year. In equity instruments, real estate purchases by non-residents stand out, which continued to increase, accounting for 1% of GDP (29.3% of the total net external lending obtained by NFCs).⁵²

52. In the balance of payments statistics, the purchase of land or buildings in Portugal by a non-resident is recorded under the direct investment liabilities item, and the corresponding stock of real estate constitutes a direct investment liability in the international investment position. This record requires the establishment of a resident notional entity for statistical purposes, which owns the land or building which, in turn, is acquired by the non-resident entity. Thus, in national accounts, real estate transactions involving a non-resident entity are not recorded as investment, but as a financial transaction.

Improvement in the international investment position as a result of the economy's net lending position and GDP growth

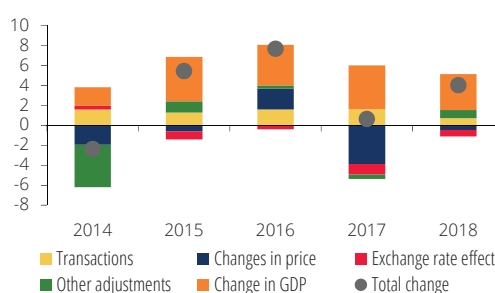
At the end of 2018, the international investment position (IIP) of the Portuguese economy stood at -100.8% of GDP, an increase of 4.1 p.p. compared to the end of 2017 (Chart I.8.6). As in recent years, this reduction in the investment liability position abroad in 2018 mainly reflected the denominator effect (i.e. GDP growth), with a contribution of 3.6 p.p. of GDP to change (Chart I.8.7). To a lesser degree, the financial account surpluses (transactions) have also contributed to these developments, accounting for 0.7 p.p. of GDP in 2018.

Chart I.8.6 • IIP by functional category
| As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

Chart I.8.7 • Change in international investment position
| As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

The gradual increase in the IIP balance over the last few years corresponded to an inversion of the negative balance observed in the portfolio investment category into a surplus, which in 2018 amounted to 7.8% of GDP. These developments are linked to a decrease in Treasury bonds in the non-residents portfolio, through the replacement of this type of financing with EFAP lending⁵³ or, in the most recent years, through the effect of non-standard monetary policy measures.⁵⁴ Net direct investment recorded a negative balance and has been increasing in recent years, accounting for -35% of GDP in 2018. These developments have partly reflected a reduction in direct investment abroad (Charts I.8.8 and I.8.9).⁵⁵ In turn, external investment in Portugal has risen through liabilities in the form of debt, while the equity component decreased in the last year.

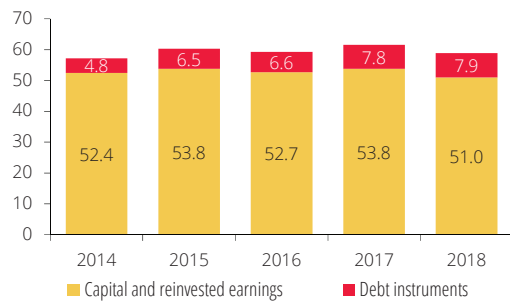
53. Classified under other investment.

54. For a more detailed analysis of the impact of these transactions, see Box 12 entitled "Impact of the non-standard monetary policy measures of the Eurosystem on the international investment position of the Portuguese economy", *Economic Bulletin*, May 2018, Banco de Portugal, pp. 112-117.

55. This information corresponds to the classification of direct investment according to the directional principle. That is to say that every transaction with non-residents regarding resident direct investment enterprises is taken into account, whether it constitutes an asset or a liability for these entities. For further details on the statistical processing of information on direct investment see Banco de Portugal (2015), "Estatísticas da balança de pagamentos e da posição de investimento internacional – Notas metodológicas", *Supplement to the Statistical Bulletin*, No 2/2015 (in Portuguese only).

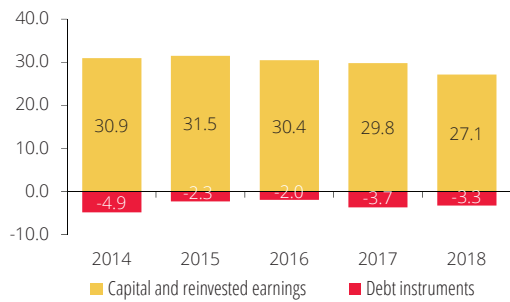
The ratio of net external debt as a percentage of GDP continued to decrease, reaching 89% at the end of 2018, but is still high in historical terms and compared to other economies.

Chart I.8.8 • Desagregation of foreign direct investment in Portugal (directional principle)
| As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

Chart I.8.9 • Desagregation of Portuguese investment abroad (directional principle)
| As a percentage of GDP



Sources: Statistics Portugal and Banco de Portugal.

Box 7 • Cyclical adjustment of exports and imports

The decrease in the needs for external financing of the Portuguese economy after 2010 is one of the main factors behind the macroeconomic rebalancing, in the context of the EFAP. In the balance of payments statistics, the current account balance went from a deficit of around 10% of GDP in 2010 to a deficit of 0.6% in 2018.

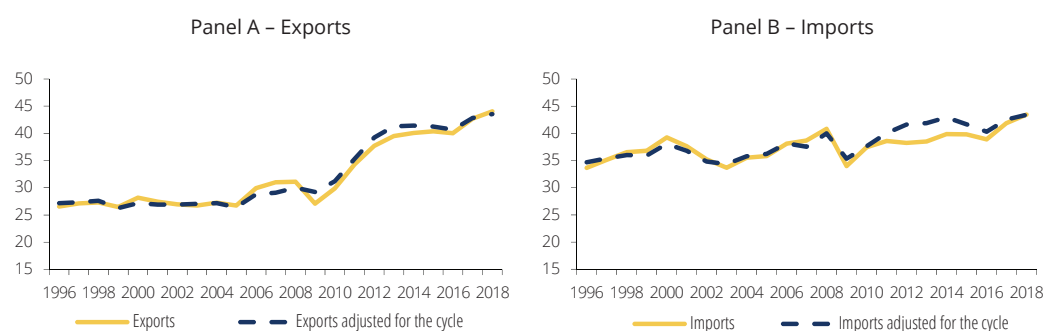
The period after 2011 was characterised in particular by improvements in the goods and services account balance. However, the adjustment of external accounts occurred amid a contraction in economic activity, raising concerns about their sustainability in a moment of cyclical recovery. In order to examine whether these developments mainly resulted from cyclical developments, one of the recommended methods in literature focuses on the goods and services component and is based on the elasticity of external trade.⁵⁶

According to the methodology used by Amador e Silva (2019)⁵⁷ based on Fabiani et al. (2016), the cyclical adjustment of exports and imports is calculated separately. One of the main assumptions made is that domestic imports and exports are isoelastic, i.e. featuring a long-term elasticity that is exogenous and constant.⁵⁸ According to this methodology, the cyclical adjustment of the exports-to-nominal GDP ratio depends negatively on the output gap abroad: if the output of Portuguese trading partners exceeds its potential, these will import more and consequently domestic exports will benefit from cyclical developments.

With respect to imports as a percentage of nominal GDP, a cyclically-adjusted correction is achieved using a ratio of potential to observed imports, in real terms. Import elasticity reflects the import content from the different components of domestic expenditure and exports, with the domestic output gap being the main element. Potential imports are those that would prevail if domestic and external production were jointly considered at their potential level, with (domestic) exports and domestic demand determined simultaneously.⁵⁹

The limitations of this approach are uncertainty and revisions associated with output gaps and trade elasticity. In addition, adjustments resulting from the methodology relate exclusively to output gaps, i.e. all other changes in exports and imports attributable to temporary aspects are included in the non-cyclically-adjusted component.

Chart C7.1 • Exports and imports adjusted for the cycle, 1996-2018 | In percentage of GDP



Sources: Statistics Portugal and Banco de Portugal calculations.

56. An important contribution to the last literature trend is Fabiani et al. (2016), which suggests a model based on trade elasticity for exports and imports.

57. https://www.bportugal.pt/sites/default/files/anexos/papers/re201902_e.pdf.

58. If foreign (domestic) GDP increases by one percent, exports (imports) increase by per cent.

59. The results obtained for the elasticity estimates of imports and exports in Portugal are 1.48 and 2.6 respectively.

Panel B of Chart C7.1 shows the results for the adjustment of imports of goods and services to the domestic cycle. Results show that, from 1996 to 2008, changes in goods and services imports as a percentage of GDP were largely non-cyclical. However, after this period, the fact that the share of imports is systematically below the cyclically-adjusted level means that a contraction in domestic demand, associated with a negative output gap, has significantly reduced imports. In this period, the largest cyclical adjustment accounted for 3.4 p.p. of GDP in 2012 and 2013.

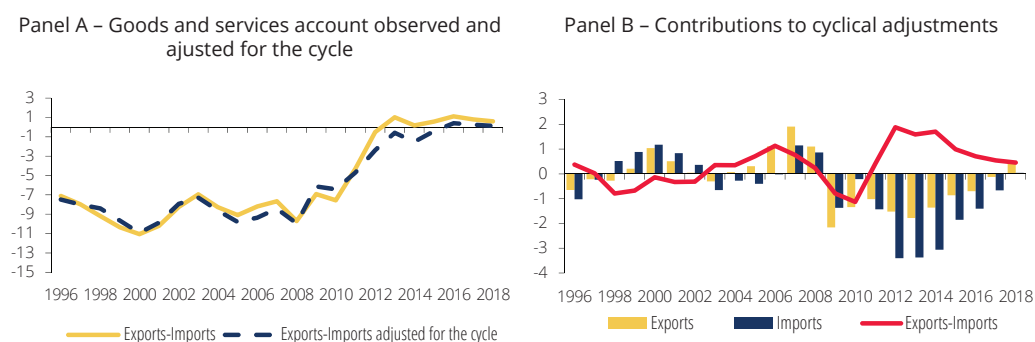
The combined cyclical adjustment of goods and services exports and imports (net exports) is illustrated in Chart C7.2, panel A. Panel B shows contributions from exports and imports to the difference between adjusted and observed figures.

According to the results, in the period 2011-18, cyclically-adjusted net exports of goods and services were on average about 1 p.p. of GDP below observed exports. This arises from the fact that the cyclical adjustment of imports is higher than that of exports.

In recent years, the difference between cyclically-adjusted and non-cyclically-adjusted net exports has decreased gradually, reaching 0.5 p.p. in 2018. The adjustment to the economic cycle is not very high in terms of magnitude. In sum, according to this type of methodology, most developments observed in the Portuguese goods and services account balance over the last years were likely non-cyclical.

Developments in the goods and services account have contributed to an improvement in the current account balance in Portugal after the sovereign debt crisis. This trend needs to be reinforced, where continued monitoring of the external accounts balance is very important. Only with current account balances that are close to zero or positive would a significant decrease in external indebtedness be possible, thus reducing the economy's exposure to external economic and financial risks.

Chart C7.2 • Goods and services account adjusted for the cycle, 1996-2018 | In percentage of GDP



Sources: Statistics Portugal and Banco de Portugal calculations.



II Special issue

Labour productivity in Portugal
over the past decade:
a firm-level approach

Labour productivity in Portugal over the past decade: a firm-level approach

Introduction

Portugal's National Accounts reveal a stagnation in labour productivity levels over the last few years, while most euro area and European Union countries have sustained positive growth rates. This finding poses a significant challenge, in that productivity gains – resulting from improvements in human capital, from increases in the available capital stock per worker or from advances in technology – are key to sustaining increases in well-being over the long term.¹ An analysis of the micro-dynamics underlying Portugal's results provides a better understanding of recent developments. In fact, aggregated figures may conceal important changes at micro level, such as the dynamics of certain groups of firms or changes to the composition of the corporate sector in Portugal.

This Special issue relies on firm-level data, obtained from accounting information sent to Banco de Portugal through the Simplified Corporate Information (IES) system.² Since 2006, this database has gathered detailed annual information for the universe of non-financial corporations located in Portugal. Longitudinal information available in the IES, together with information on deflators from the National Accounts, allows calculation of the variable of interest – real labour productivity (at 2016 prices) – measured by the ratio between gross value added (GVA) at factor cost and the number of full-time equivalent workers.^{3,4}

In order to study structural developments, the analysis focuses on changes between 2008 and 2017.⁵ Only active firms in the following sectors were considered: (i) manufacturing; (ii) construction; (iii) wholesale and retail trade, repair of vehicles, accommodation and food service activities; and (iv) information and communication activities; consultancy, technical and scientific activities; administrative activities; real estate activities; transport and storage; artistic and recreational activities (henceforth “other services”).⁶ According to the National Accounts, in the period between 2008 and 2017 these sectors make up, on average, around two-thirds of the economy's real GVA.⁷

1 For individual analysis of these elements, see previous editions of the *Economic Bulletin*. On human capital: Box 7 of the May 2018 issue, “Evolution of labour force qualifications in Portugal”; on capital stock: Box 10 of the May 2018 issue, “Capital stock in the Portuguese economy” and Box 5.1 of the May 2017 issue “Capital per worker and productivity”; on total factor productivity (which includes advances in technology): Special issue of the October 2018 issue, “Reallocation of resources and total factor productivity in Portugal”.

2 Through these reporting, firms fulfill the duty to report their annual accounts to the Ministries of Finance and Justice, Banco de Portugal and Instituto Nacional de Estatística - INE (Statistics Portugal).

3 By definition, firms with no workers are not included in the analysis (as a zero denominator is not possible). In order to estimate gross value added in real terms, price indices were built based on the breakdown of 38 activities published by INE in the National Accounts. These were created with 2016 as the base year. Further details are given in Annex 1.

4 In the text, the shorter term ‘productivity’ is also used, with the same meaning.

5 These two years are also relatively similar points in the economic cycle, and are therefore particularly relevant for assessing developments of a structural nature.

6 Due to their specific characteristics or due to the incomplete sectorial coverage in IES (which only includes firms and not sole proprietors), the primary sector, the financial sector, the utilities sector and non-market activities (education, health and general government) were excluded from the analysis.

7 Construction represents 5%, manufacturing 14%, trade, repair, accommodation and food services 18% and other services 29% (data from the National Accounts).

After a general overview in the next section, the remaining sections present a more detailed analysis of the firms' productivity distribution. It starts by distinguishing the behaviour of the firms trading internationally from those that only focus on the domestic market, analysing also the changes in the relative weight of the different groups over time. Then, possible differences across firms' cohorts are analysed, comparing incumbent firms with those created more recently. Productivity by firm size is also assessed, evaluating firms' growth potential. Finally, the heterogeneity of performance across the productivity distribution is discussed, comparing firms in different percentiles.

Overview

Chart 1 gives the labour productivity distribution in 2008 and 2017 for the sectors considered. Two conclusions may be drawn from this chart. The first is that, as is the case in the United States and in some European Union countries (Mayer and Ottaviano, 2008 and Bernard et al., 2012), the productivity distribution is strongly skewed to the left, which means there is a large number of firms with very low productivity. For this reason, the use of averages is particularly misleading in depicting the actual individual developments of the firms in the economy. As a result, this Special issue will focus on the entire distribution. Furthermore, as argued for instance by Altamonte et al. (2016), the relevant unit for discussing productivity behaviour is the firm, as aggregate competitiveness is driven by firms' individual ability to use the resources available and create value.

The second conclusion from Chart 1 is that, over the past decade, the productivity distribution has not altered substantially, in terms of both position and dispersion. Between 2008 and 2017, the median firm's productivity increased slightly from €13,600 to €14,000 per worker, the 25th percentile rose from €8,300 to €8,400, and the 75th percentile rose from €22,500 to €23,400.⁸ The remaining sections of this Special issue make use of the wealth of firm-level information to give a deeper understanding of the structural developments over the last decade.

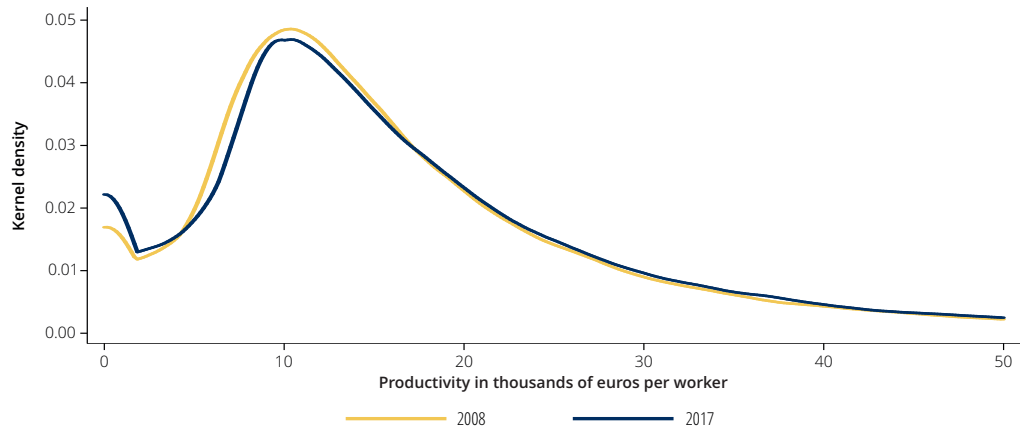
Taking into account the different sectorial characteristics, Chart 2 compares developments in the productivity distribution over the last decade for each of the four sectors considered. Again, there is a clear similarity between 2008 and 2017 for each activity sector, except in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities where there are some gains, mostly in the higher percentiles.⁹ In any case, in the other sectors there is a reduction in the interquartile range (i.e. the difference between the 25th and 75th percentiles), which may indicate a more efficient allocation of resources.¹⁰

8 The increase in the relevance of firms with productivity below €1000 per worker in 2017 is to do with the increase in the proportion of firms entering that year (which, as they are in their first year of operation, generally have lower productivity than firms already operating in the market). There is also some deterioration in the quality of the firms at entry, with a larger differential between their productivity and that of incumbent firms.

9 Chart 2 also shows that some firms have negative levels of productivity, i.e. of GVA per worker. Indeed, GVA (resulting broadly from the difference between output and intermediate consumption) can be negative theoretically. In the data considered in this Special issue, the proportion of firms with negative GVA is below 7%, both in 2008 and in 2017, mainly affecting micro firms. In sectorial terms, the phenomenon is less prevalent in manufacturing. Firms with up to two years of activity account for 47% of negative observations in 2008 and 60% in 2017. Only around 10% of the observations with GVA below zero result from firms with more than two years of activity and with negative GVA in two consecutive years.

10 In the literature, dispersion measures are used as indicators of efficiency in resource allocation. See Dias et al. (2016) for an analysis for Portugal, using total factor productivity.

Chart 1 • Productivity distribution in 2008 and 2017 for manufacturing, construction and services | In thousands of euros per worker



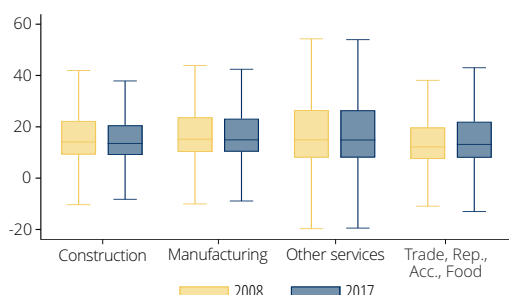
Source: Banco de Portugal calculations based on IES. | Notes: Kernel density estimation is a non-parametric way of estimating the probability density function of a variable. In the literature, for continuous variables these density estimates are considered preferable to histograms, namely by smoothing the distribution. To facilitate the reading of the graph, in the Kernel distribution, the productivity is truncated between 0 and 50 thousand euros per worker (the distribution has been calculated based on all observations).

Despite the absence of clear gains in the sectorial productivity distribution, Chart 3 suggests that there are differences in the productivity distribution across the different sectors, which dissipate at the higher productivity levels. Taking into account the structural differences between sectors, it is particularly important to assess inter-sectorial productivity differentials conditioning on size of firm, exporter/importer status, year of entry into the market and economic cycle.¹¹ A quantile analysis highlights the differences across the distribution (Table 1). Compared to manufacturing, firms from the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities are generally less productive, apart from the firms in the highest percentiles.

Conversely, firms from other services are more productive (except in the lowest percentiles), with a growing differential along the distribution. Lastly, construction firms' productivity is relatively similar to that of the firms in manufacturing in the intermediate percentiles, with increasing differences at the distribution's extremes (negative for the lowest percentiles, and positive for the highest).

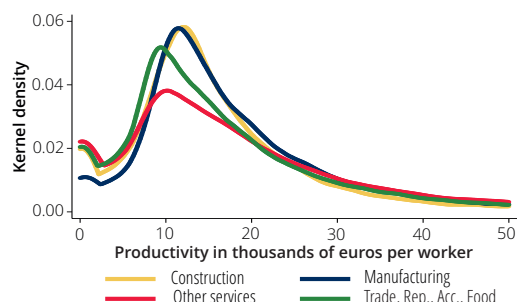
¹¹ Given the differences in the proportion of the capital input in the different sectors, this analysis was replicated also controlling for the capital per worker level, proxied by the stock of fixed assets per worker. The results were largely the same.

Chart 2 • Box plot of productivity in 2008 and 2017, by activity sector | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: The sector "Trade, Rep., Acc., Food" encompasses wholesale and retail trade, repair of vehicles, accommodation and food service activities. In a box plot, the central box represents the values of the 25th percentile to 75th percentile (interquartile range) and the horizontal line corresponds to the median of the distribution (50th percentile). The vertical line extends from the minimum to the maximum value, excluding outliers (values lower than the difference between the 25th percentile and 1.5 times the interquartile range, or higher than the sum of the 75th percentile and 1.5 times the interquartile range).

Chart 3 • Productivity distribution in 2017, by activity sector | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: The sector "Trade, Rep., Acc., Food" encompasses wholesale and retail trade, repair of vehicles, accommodation and food service activities. For more details on the Kernel distribution see the note to Chart 1.

Table 1 • Difference in the sectorial productivity vis-à-vis the manufacturing sector | In thousands of euros per worker

Variables	10 th percentile	25 th percentile	50 th percentile	75 th percentile	90 th percentile
Activity sectors (Omitted category: Manufacturing)					
Construction	-1.346 (0.0344)	-0.359 (0.0256)	-0.150 (0.0250)	-0.043 (a) (0.0443)	2.224 (0.110)
Other services	-0.375 (0.0263)	0.432 (0.0213)	1.935 (0.0244)	5.382 (0.0440)	13.600 (0.109)
Trade, repair, accommodation and food services	-0.486 (0.0235)	-0.666 (0.0193)	-0.771 (0.0211)	-0.674 (0.0363)	0.350 (0.0795)
Number of observations	2 404,405	2 404,405	2 404,405	2 404,405	2 404,405

Source: Banco de Portugal calculations based on IES. | Notes: The results are derived from a quantile regression, which allows for the calculation of descriptive statistics conditional on the remaining explanatory variables included in the model. For more details see Annex 2. The coefficients marked with (a) are not statistically significant. The remaining coefficients are statistically significant at a significance level of 1%. The robust standard errors are presented in parentheses.

It is therefore important to assess whether a sectorial recomposition took place over the last ten years, with more productive sectors gaining weight. Indeed, firms from the other services sector increased their share from 30% to 35% of the universe in review, with the number of firms operating in the sector growing by 23% (Table 2).¹² As shown below, these new firms will manage to converge quickly towards the sector's productivity patterns.

¹² This increase is broadbased across the different subsectors. Transport and storage was the only subsector in other services which did not have increases in the number of firms.

Despite the other sectors having lost relative weight, the losses have different drivers: the fall in the share of manufacturing firms and above all construction reflects the decline in the number of firms operating in those sectors (-5% and -18%, respectively), while the slight reduction in the share of the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities results from a 4% increase in the number of firms, principally in the accommodation and food services subsectors.

Table 2 • Evolution of the number of firms in each activity sector, between 2008 and 2017

	2008		2017		2017 and 2008	
	Number of firms	Relative weight	Firms	Relative weight	Growth rate	Change in relative weight
Activity sectors						
Manufacturing	35,806	14%	33,839	13%	-5%	-1.4 p.p.
Construction	37,726	15%	30,764	11%	-18%	-3.3 p.p.
Trade, repair, accommodation and food services	105,948	41%	110,348	41%	4%	-0.3 p.p.
Other services	76,005	30%	93,393	35%	23%	5.1 p.p.
Total	255,485	100%	268,344	100%	5%	-

Source: Banco de Portugal calculations based on IES.

Participation in international trade

In this Special issue, firms are classified, in each year, as exporters (importers) if the value of their exports (imports) sums to at least 10% of their total sales (purchases) in that year and the year before.

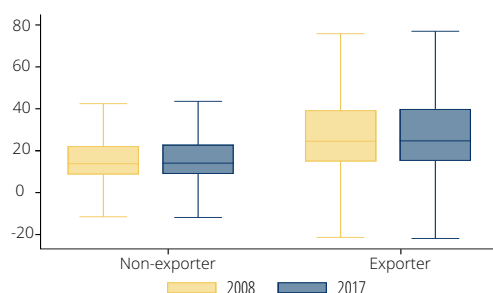
Charts 4 and 5 offer a comparison of the developments in the labour productivity distribution over the last decade both for the firms involved in international trade and for firms that operate essentially in the Portuguese market.¹³ Within each group, there was no significant change in the distribution between 2008 and 2017, apart from the group of importing firms. For these, there is an improvement in productivity across the whole distribution, with gains cutting across the different percentiles.

Furthermore there is a clear positive differential between firms taking part in international trade and the rest (although relatively stable over time), as may be seen in Chart 6. It is an expected outcome that exporting firms, capable of competing in the international markets, have higher productivity levels. Similarly, importers benefit from access to more diversified intermediate goods (which may be reflected in their quality or in their price) and from the exposure to global value chains. Thus they too are more productive compared to the firms that do not import.¹⁴

¹³ To ensure comparability of the groups, and taking into account the definition used for exporters/importers, only firms already active in the year before were considered.

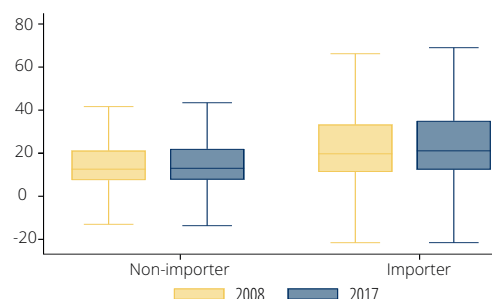
¹⁴ For an analysis of the extensive (i.e. entry and exit of exporter/importer firms) and intensive (i.e. sales/purchases by the exporters/importers that continue) margins on firm, destination and product dimensions, as well as for a comparison of the different cohorts of firms that operate in the international market, see Amador and Opromolla (2013, 2017).

Chart 4 • Box plot of productivity in 2008 and 2017, by exporter status | In thousands of euros per worker



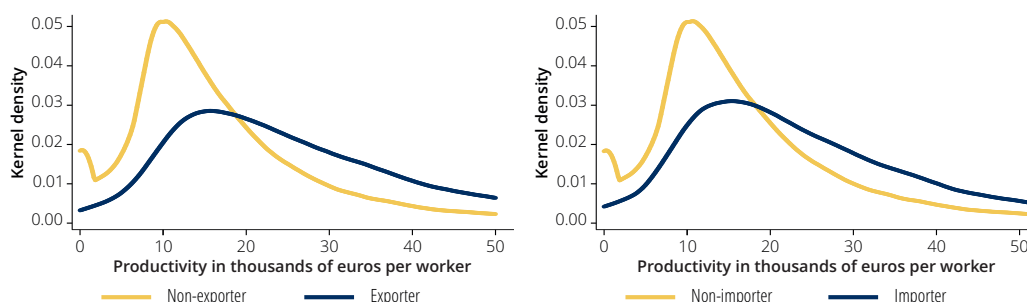
Source: Banco de Portugal calculations based on IES. | Notes: For more details on Box plots see note to Chart 2.

Chart 5 • Box plot of productivity in 2008 and 2017, by importer status | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: For more details on Box plots see note to Chart 2.

Chart 6 • Productivity distribution in 2017, by exporter and importer status | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: For more details on Kernel distributions see note to Chart 1.

Indeed, controlling for the effects of firm size, sector, year of entry into the market and economic cycle, it is possible to confirm the positive productivity differential for the firms that export part of their production and/or import inputs into their production process, compared to firms not trading internationally (Table 3). This effect is visible across the whole distribution and it is stronger in the highest percentiles. The joint effect of exporting and importing is smaller than the sum of the individual effects – possibly indicating that the channels through which the productivity gains operate are largely similar – but, even so, larger than that of holding only one of the statuses. As an example, the median firm (in the productivity distribution) in the exporters' group has a higher productivity by €8,500 per worker to that of the median firm in the non-exporters' group. The effects of the importer status are smaller but nevertheless significant, at around €5,800. Lastly, the joint effect is €9,900 per worker.

Thus the increase observed over the last decade in the prevalence of exporter firms in all sectors – namely from 2010 – is a positive development, contributing to the increase in aggregate productivity (Chart 7).¹⁵ While it is true that before starting to export, new exporters already had higher productivity levels than the firms that did not enter into external markets, it is also true that these

¹⁵ Note that the share of exporting firms is underestimated, especially in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities, as, using IES data, it is not possible to identify sales in Portugal to non-residents as tourism exports.

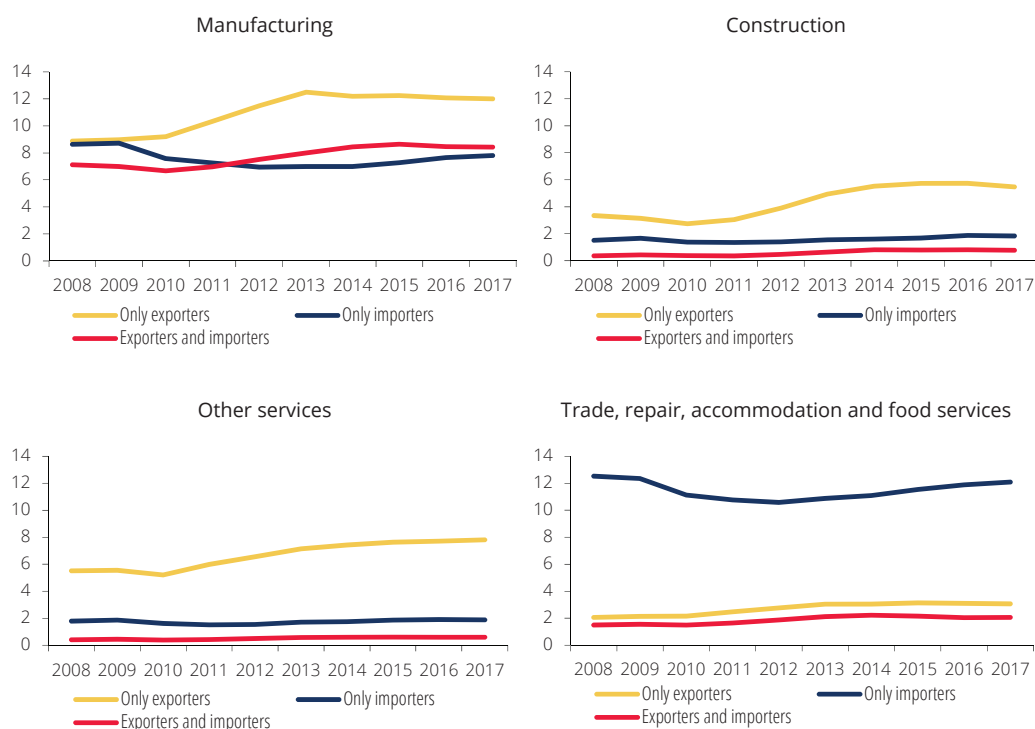
new exporters recorded additional gains after starting their exporting activity, thus corroborating the positive aggregate impact of the increase in the number of exporters (a result summarised in Chart 8 and presented in greater detail in Table 4).

Table 3 • Difference in productivity of firms involved in international trade | In thousands of euros per worker

Variables	10 th percentile	25 th percentile	50 th percentile	75 th percentile	90 th percentile
Participation in international trade (Omitted category: firms simultaneously non-exporters and non-importers)					
Only exporters	3.432 (0.0409)	4.758 (0.0395)	8.459 (0.0567)	14.260 (0.0955)	24.000 (0.266)
Only importers	2.647 (0.0317)	3.351 (0.0285)	5.766 (0.0411)	10.450 (0.0767)	17.850 (0.176)
Firms simultaneously exporters and importers	3.785 (0.0588)	5.775 (0.0721)	9.879 (0.0981)	16.400 (0.161)	25.610 (0.417)
Number of observations	2 404,405	2 404,405	2 404,405	2 404,405	2 404,405

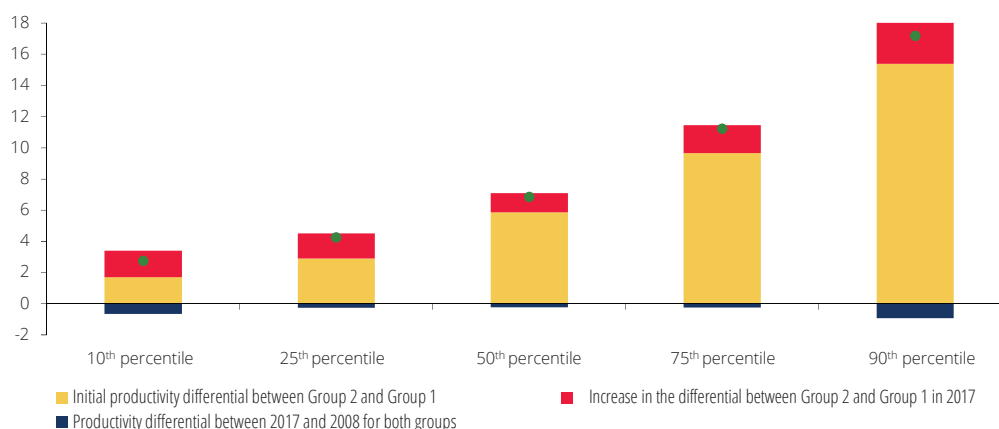
Source: Banco de Portugal calculations based on IES. | Notes: The results are derived from a quantile regression, which allows for the calculation of descriptive statistics conditional on the remaining explanatory variables included in the model. For more details see Annex 2. All coefficients are statistically significant at a significance level of 1%. The robust standard errors are presented in parentheses.

Chart 7 • Relative weight of firms involved in international trade, by activity sector | In percentage



Source: Banco de Portugal calculations based on IES.

Chart 8 • Productivity gains of new exporters, between 2008 and 2017 | In thousands of euros per worker – Group 1: incumbent firms that remained non-exporters – Group 2: incumbent firms that became exporters



Source: Banco de Portugal calculations based on IES. | Notes: The analysis is intended to be illustrative, focusing on the group of incumbent firms (which does not account for the universe of new exporters). The results were obtained from a difference in differences regression, shown in Table 4. For more details, see Annex 4.

Table 4 • Productivity gains of new exporters, between 2008 and 2017 | In thousands of euros per worker – Group 1: incumbent firms that remained non-exporters – Group 2: incumbent firms that became exporters

Variables	10 th percentile	25 th percentile	50 th percentile	75 th percentile	90 th percentile
Productivity differential between 2017 and 2008 for both groups	-0.657 (0.0573)	-0.263 (0.0338)	-0.227 (0.0457)	-0.237 (0.0896)	-0.928 (0.220)
Initial productivity differential between Group 2 and Group 1	1.692 (0.206)	2.901 (0.167)	5.861 (0.278)	9.666 (0.400)	15.390 (1.068)
Increase in the differential between Group 2 and Group 1 in 2017	1.710 (0.272)	1.615 (0.222)	1.220 (0.384)	1.787 (0.596)	2.720 (1.494)
Number of observations	254,390	254,390	254,390	254,390	254,390

Source: Banco de Portugal calculations based on IES. | Notes: The analysis is intended to be illustrative, focusing on the group of incumbent firms (which does not account for the universe of new exporters). The difference in differences regression was estimated distinguishing two groups: the control group, C (incumbents who did not export in 2008 and who maintained that status in 2017 - Group 1) and the treatment group, T, (incumbents that did not export in 2008 and that have export status in 2017 - Group 2). The difference $(T_{2017} - T_{2008}) - (C_{2017} - C_{2008})$ - read in the third row of the table - represents the additional gain over the period considered from the treatment group (the new exporters within incumbents) compared to the control group (non-exporters within of incumbents). The regression includes controls for the activity sector and for the size of firms. The coefficients are statistically significant with a significance level of at most 10%. The robust standard erros are presented in parentheses. For more details see Annex 4.

The same pattern is not observed among importer firms, whose share remains close to the 2008 levels (Chart 7). The observed decline in the share of importing-only firms in manufacturing and in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities coincides with an increase in the share of the firms that simultaneously import and export.

Overall, the share of firms taking part in international trade increased: 3.6 percentage points (p.p.) in manufacturing, 2.8 p.p. in construction, 2.6 p.p. in other services and 1.1 p.p. in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities. This increase is also

seen in absolute terms: the number of firms that export or import increased over the last decade, 8% in manufacturing, 25% in construction, 62% in other services and 11% in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities. The corresponding growth rates for firms operating only in the domestic market were -10%, -22%, 18% and 2% (see Annex 3).

Year of entry into the market

The productivity dynamics of an economy are determined by the behaviour of the firms that are already in the market, but also by the new entrants. If the latter have productivity developments that differ from those of incumbent firms, this will have repercussions on the overall long-term dynamics. Thus it is useful to analyse the different cohorts, comparing these dynamics.

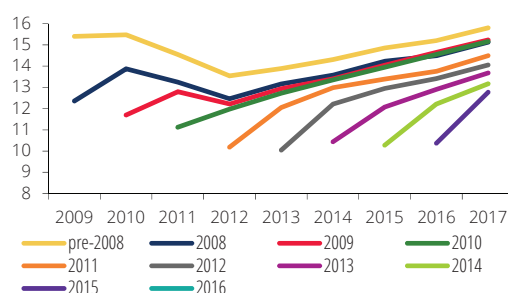
In the analysis that follows, the point of reference is the incumbent firms, i.e. those created before 2008, and which remain active in 2017. This group represents 49% of the total of around 268,000 active firms in 2017 in the sectors in review. The productivity gains of firms that are active in 2017 and that were established in the period between 2008 and 2016 were assessed vis-à-vis the evolution of the surviving incumbents. The new firms, arriving onto the market from 2008 onwards, comprise 43% of total firms in 2017 (each individual cohort accounts for between 3% and 7%, increasing nearer to 2017 due to the ease of compliance with the 'survivor' condition).

An analysis of the median of (non-conditional) productivity shows visible gains among the firms created in the last decade, whose median converges towards the productivity levels of the incumbent firms, but does not overtake them (Chart 9).¹⁶ The conditional analysis presented in Annex 2, for various percentiles, confirms that the differential for the incumbents decreases with the age of the firm, a pattern of convergence visible across the distribution. It also provides two other conclusions: (i) the best firms in each cohort (90th percentile) manage to overtake the best incumbent firms after some years in the market (a result also illustrated in Chart 10, in an unconditional analysis) and (ii) the firms' convergence in the lowest percentiles (the 10th and 25th percentiles) is relatively fast, given their high productivity differential in the early years.

There is also a group of firms created in 2017, which represents 8% of all active firms in that year. The new firms' share is 1 p.p. larger than in 2008 (seen across all sectors except manufacturing, in which the entry rate remains unchanged at 5%) but with the quality of the entering firms deteriorating. In 2008, the medians of new firms' productivity were 53%, 48%, 27% and 22% of the median of the firms in the market in the construction, manufacturing, wholesale and retail trade, repair of vehicles, accommodation and food service activities and other services respectively. In 2017, those values fell to 48%, 32%, 8% and 15%, contributing to a deterioration, at least in the short term, in overall performance. In contrast, the firms active between 2008 and 2016 but that did not survive until 2017 were less productive than the incumbents (around 60% of the median), thus suggesting that there is a selection process of the best firms.

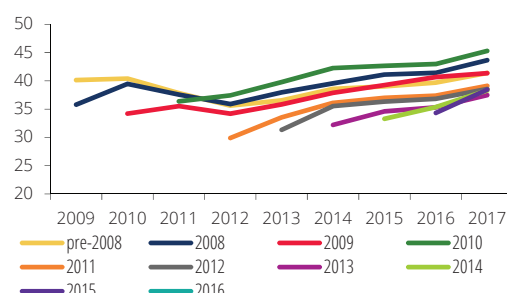
¹⁶ It is important to note that the incumbents' group is a selection of particularly resilient firms, as they stayed in the market during the severe financial and economic crisis that affected Portugal.

Chart 9 • Median of firms' productivity, by year of entry in the market | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: The incumbent firms correspond to the «pre-2008». To ensure comparability, the chart does not show values for the first year of activity, since the companies are not in operation the same number of months.

Chart 10 • 90th percentile of firms' productivity, by year of entry in the market | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: The incumbent firms correspond to the «pre-2008». To ensure comparability, the chart does not show values for the first year of activity, since the companies are not in operation the same number of months.

Firm size

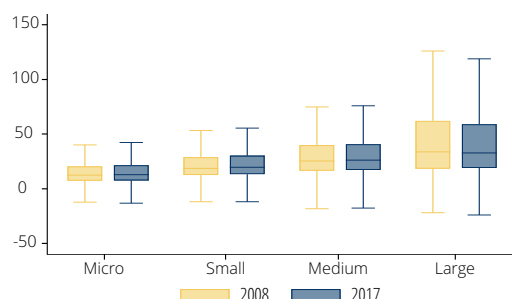
Chart 11 provides a comparison of the evolution of productivity over the last decade according to the firms' size, measured in terms of the number of workers and turnover.¹⁷ Within each size class, there were no significant changes to the productivity distribution between 2008 and 2017, except for a deterioration in large firms' productivity in the highest percentiles.

Even so, it is clear that the productivity distribution improves over the firm's size classes. As is also visible in Chart 12, there is a monotonic relationship between the size classes and the value added per worker, which continues even in a conditional analysis by activity sector, exporter/importer status, year of entry into the market and economic cycle (Table 5). Indeed, the productivity differential for larger-sized firms subsists across the whole distribution. Furthermore, the gains are proportionally greater for the highest percentiles (Table 5). For example, in the 25th percentile, the differential compared to a micro firm is €4,400 per worker for a small firm, rising to about double in the case of a large firm (€8,600); in the 75th percentile, those differentials are respectively €6,200 and €31,000 (i.e. the increase for large firms is five times that of small firms).

This makes it particularly important to assess Portuguese firms' growth potential. In general, micro firms' share increased in the last decade, from 82.5% to 85.1% (Table 6), across all the activity sectors. This result also reflects the sectorial recomposition described above, with an increase in the number of firms in the services sectors, where micro firms are more prevalent.

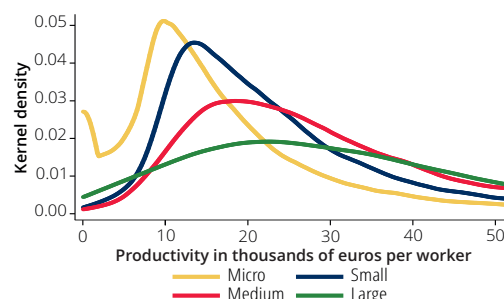
¹⁷ According to the legislation in force (Recommendation of the European Commission 2003/361/EC), the category of micro, small and medium-sized enterprises (SMEs) comprises firms that employ fewer than 250 people and whose annual turnover does not exceed €50 million or whose total annual balance sheet does not exceed €43 million. Among SMEs, micro firms have fewer than 10 workers and an annual turnover or total annual balance sheet not in excess of €2 million. In turn, small firms employ fewer than 50 people and have an annual turnover or total annual balance sheet not in excess of €10 million. Thus the large firms are those that do not belong to any of the aforementioned categories.

Chart 11 • Box plot of productivity in 2008 and 2017, by firm size | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: For more details on Box plots see note to Chart 2.

Chart 12 • Productivity distribution in 2017, by firm size | In thousands of euros per worker



Source: Banco de Portugal calculations based on IES. | Notes: For more details on Kernel distributions see note to Chart 1.

Table 5 • Difference in productivity, by firm size | In thousands of euros per worker

Variables	10 th percentile	25 th percentile	50 th percentile	75 th percentile	90 th percentile
Size (Omitted category: micro firms)					
Small firms	5.860 (0.0169)	4.424 (0.0176)	5.090 (0.0242)	6.212 (0.0414)	7.730 (0.102)
Medium firms	6.984 (0.0386)	6.942 (0.0631)	9.421 (0.0897)	13.470 (0.144)	25.060 (0.546)
Large firms	7.336 (0.178)	8.649 (0.184)	15.520 (0.272)	31.050 (0.893)	90.020 (4.414)
Number of observations	2 404,405	2 404,405	2 404,405	2 404,405	2 404,405

Source: Banco de Portugal calculations based on IES. | Notes: The results are derived from a quantile regression, which allows for the calculation of descriptive statistics conditional on the remaining explanatory variables included in the model. For more details see Annex 2. All coefficients are statistically significant at a significance level of 1%. The robust standard errors are presented in parentheses.

Table 6 • Evolution of the number of firms, by firm size between 2008 and 2017

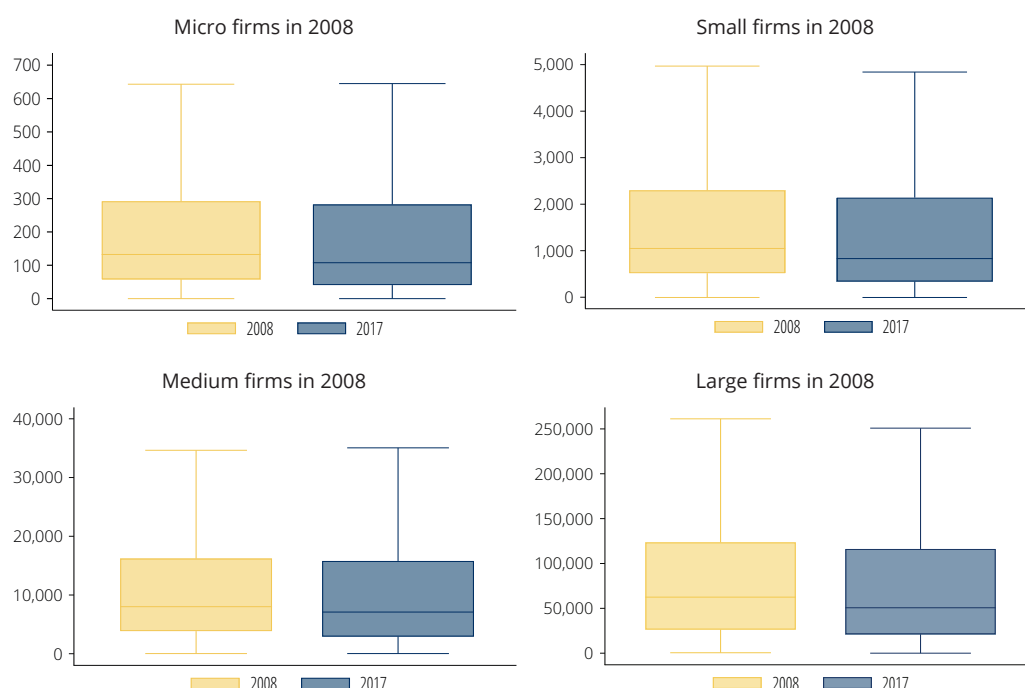
Size	2008		2017		2017 e 2008	
	Number of firms	Relative weight	Number of firms	Relative weight	Growth rate	Change in relative weight
Micro	210,695	82.5%	228,287	85.1%	8.3%	2.6 p.p.
Small	37,996	14.9%	33,605	12.5%	-11.6%	-2.3 p.p.
Medium	5,832	2.3%	5,505	2.1%	-5.6%	-0.2 p.p.
Large	962	0.4%	947	0.4%	-1.6%	–

Source: Banco de Portugal calculations based on IES.

To isolate these recomposition effects, the following analysis focuses on the incumbent firms, i.e. on those that remain throughout the period in review. The great majority of these firms – between 80% and 90%, depending on the sector – stays in the same size class from 2008 to 2017 (Table 7). Still in this universe, around 10% of the firms in the case of manufacturing and around 6% in the case of the other sectors managed to move up a size class by 2017. Within each class, there is also a significant fraction of firms

that moved down a size class, construction firms in particular. Considering that changes in class-size are considerable discrete changes in size, the analysis was repeated for the same universe, but using turnover as a continuous size measure. Organising the firms by the size class to which they belonged in 2008, a falling trend is visible across the whole distribution (Chart 13). These developments have to be read in the light of the severity of the financial and economic crisis affecting Portugal in the first half of the period considered. Indeed, a time series of the incumbent firms' turnover by sector (Chart 14) shows a decline in the median firm's turnover between 2008 and 2012, with the reduction accelerating from 2010. There was a recovery after 2012, although it was partial.

Chart 13 • Box plot of turnover in 2008 and 2017, by firm size in 2008 | In thousands of euros



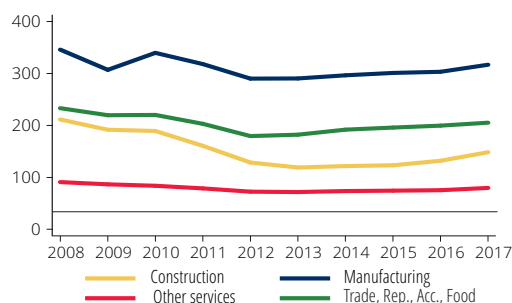
Source: Banco de Portugal calculations based on IES. | Notes: For more details on Box plots see note to Chart 2.

The greater prevalence of exporting firms described above mitigates these developments, but only in part. Crossing size with exporter status, it can be seen that the differences in productivity between micro, small and medium-sized firms are blurred among exporters (a result not seen among the importers), with the medium-sized firms levelling the performance (Chart 15).

An analysis by year of entry shows that younger firms are able to grow, but there are certain differences that result from their initial size. Focusing on the median of the firms that are born smaller (i.e. in the first half of the turnover distribution in the second year of activity)¹⁸, there is a continuous pattern of growth, with these firms reaching (and even surpassing) the 25th percentile of the incumbent firms' distribution (Chart 16). However, the incumbents' distance from the median turnover remains constant. In terms of productivity (Chart 17), the 25th percentile is surpassed from the third year of activity onwards. In the first few years there is also some convergence towards the median productivity, remaining however a constant differential in the following years.

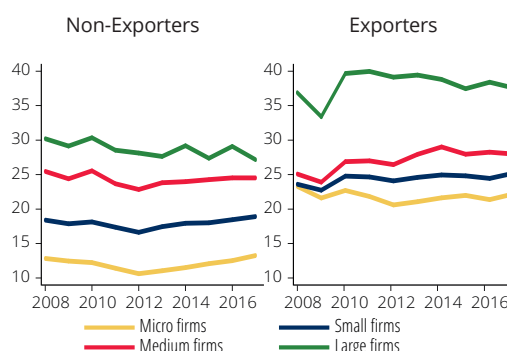
¹⁸ In the analysis of the size at entry, the second year is used in order to ensure comparability across firms, since in the first year of operation there are firms with a variable number of months of activity.

Chart 14 • Evolution of the median turnover of incumbent firms, by activity sector
| In thousands of euros



Source: Banco de Portugal calculations based on IES.

Chart 15 • Evolution of the median productivity, by firm size and by exporter status
| In thousands of euros per worker



Source: Banco de Portugal calculations based on IES.

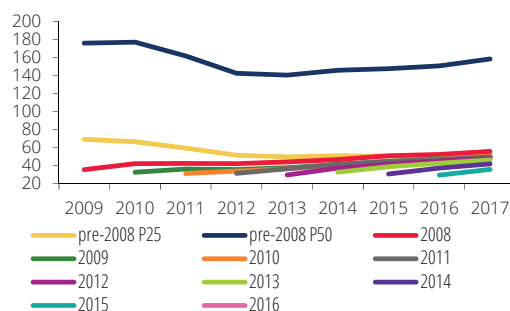
Table 7 • Evolution of the size of incumbent firms between 2008 and 2017, by size and activity sector
| In percentage

	Total	Micro	Small	Medium	Large
Manufacturing					
Change in size					
Positive	9.8	12.2	7.6	4.8	–
Unchanged	81.4	87.8	72.1	77.8	84.3
Negative	8.8	–	20.3	17.4	15.7
Construction					
Change in size					
Positive	6.2	7.3	3.3	3.5	–
Unchanged	81.4	92.7	52.1	48.0	52.5
Negative	12.4	–	44.7	48.5	47.5
Other services					
Change in size					
Positive	6.1	5.7	8.3	11.4	–
Unchanged	90.3	94.3	61.8	60.4	75.5
Negative	3.7	–	29.9	28.3	24.5
Trade, repair, accommodation and food services					
Change in size					
Positive	6.4	6.6	5.9	5.9	–
Unchanged	88.5	93.4	66.6	67.0	75.7
Negative	5.1	–	27.6	27.1	24.3

Source: Banco de Portugal calculations based on IES. | Notes: The percentages add up to 100% within each sector and size group.

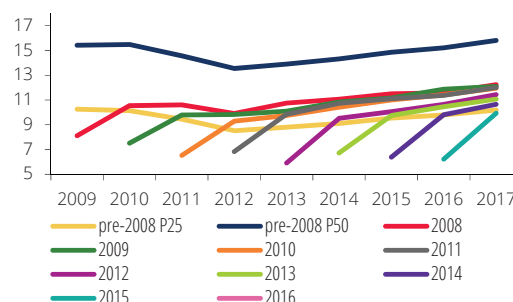
The median firm of the group of firms born larger (i.e. in the second half of the turnover's distribution, in the second year of activity) is always above the median for the incumbent firms and displays a more dynamic growth pattern (Chart 18). However, it is still below the incumbents of the 75th percentile, whose turnover exceeded €536,000 in 2017. The growth in turnover does not reflect productivity gains compared to the incumbents however (Chart 19). It is nevertheless notable that the group of firms born larger have similar productivity levels to those of the older firms, closely matching their developments (thereby maintaining a considerable distance from the 75th percentile of productivity).

Chart 16 • Evolution of the median turnover of the smaller new firms | In thousands of euros



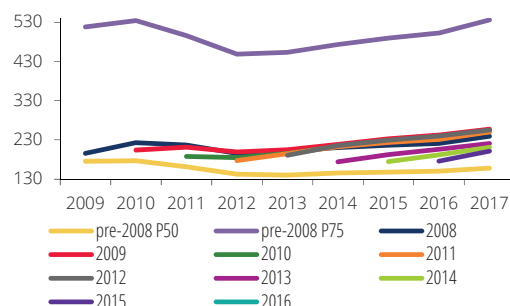
Source: Banco de Portugal calculations based on IES. | Notes: The incumbent firms correspond to «pre-2008» (P25 represents the 25th percentile and P50 is the median). To ensure comparability, the chart does not show values for the first year of activity, since the companies are not in operation the same number of months.

Chart 17 • Evolution of the median productivity of the smaller new firms | In thousands of euros per worker



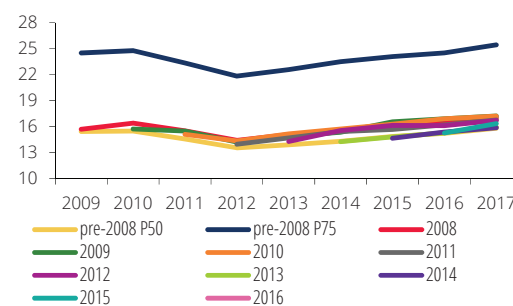
Source: Banco de Portugal calculations based on IES. | Notes: The incumbent firms correspond to «pre-2008» (P25 represents the 25th percentile and P50 is the median). To ensure comparability, the chart does not show values for the first year of activity, since the companies are not in operation the same number of months.

Chart 18 • Evolution of the median turnover of the largest new firms | In thousands of euros



Source: Banco de Portugal calculations based on IES. | Notes: The incumbent firms correspond to «pre-2008» (P50 represents the median and P75 is the percentile 75). To ensure comparability, the chart does not show values for the first year of activity, since the companies are not in operation the same number of months.

Chart 19 • Evolution of the median productivity of the largest new firms | In thousands of euros per worker

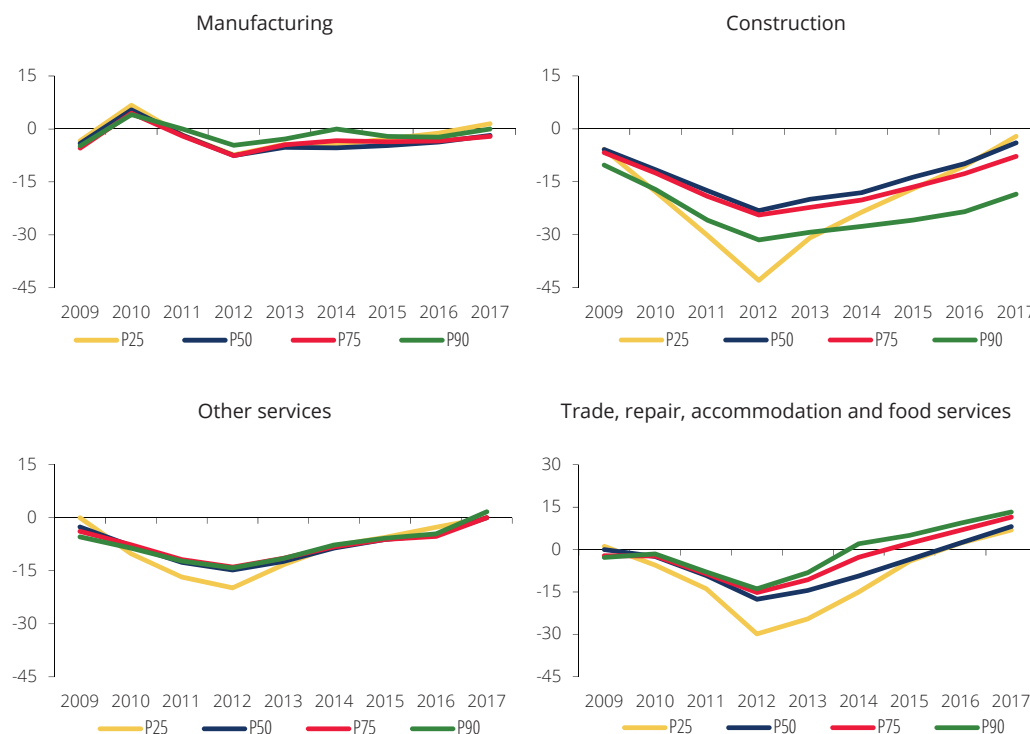


Source: Banco de Portugal calculations based on IES. | Notes: The incumbent firms correspond to «pre-2008» (P50 represents the median and P75 is the percentile 75). To ensure comparability, the chart does not show values for the first year of activity, since the companies are not in operation the same number of months.

Differentiated productivity developments across its distribution

There is evidence for OECD countries (see for example Andrew et al., 2016) showing that firms on the productivity frontier, i.e. the best firms within each sector, have achieved productivity gains, compared to stagnation among the least productive firms. To assess this hypothesis, Chart 20 presents developments in the relative productivity differential compared to 2008, for each activity sector and by percentile of the productivity distribution. When the values recorded cross the horizontal line, it means that the relative difference is positive and that, therefore, the firms belonging to a given percentile in each year overtook their peers in 2008 (i.e. the firms in the same productivity percentile in 2008).

Chart 20 • Relative differential of annual productivity compared to 2008, by activity sector and percentile | In percentage



Source: Banco de Portugal calculations based on IES.

Regarding the manufacturing sector, the four productivity percentiles in review grew in 2010 compared to 2008. However, this was followed by a fall until 2012, only partially recovered in the last few years. In 2017, only the 25th percentile surpassed the value recorded in 2008. Both in the other services sector and in construction there is a decline across all percentiles up to 2012 (steeper in the case of construction, in particular for the firms from the lowest productivity percentile) and a recovery in the following years (only partial in the case of construction, with lower productivity levels than in 2008 across the percentiles). Lastly, the findings for firms belonging to the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities are more positive, with productivity gains from 2008. The best firms, i.e. the firms from the 90th productivity percentile, became more productive from 2014 than the firms in the same sector that were in the 90th percentile in 2008, followed by the firms in the lowest percentiles. In 2017, the relative difference in productivity compared to 2008 is around 7%, 8%, 12% and 13% for the firms in the 25th, 50th, 75th and 90th percentiles respectively.

Overall, apart from the firms in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities (and the firms in the 25th percentile of manufacturing and the 90th percentile of other services), productivity in 2017 is the same or below that of 2008. The results obtained here only corroborate in part the analysis of Andrew et al. (2016). On the one hand, excluding the construction sector, the best firms – i.e. those in the highest productivity percentiles – were less sensitive to the economic cycle. Indeed, productivity in the firms with the worst performance (i.e. in the 25th percentile) seems to be more sensitive to the cycle. In fact, this heterogeneity in the response to the cycle is clear in other dimensions: in general, the smaller

firms and firms which do not trade internationally are affected more, with steeper productivity losses. On the other hand, the best firms only perform relatively better in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities and in the other services sector.

Conclusion

This Special issue makes use of a database with firm-level data to give a deeper understanding of the developments in labour productivity in Portugal over the last decade.

The productivity distribution in the sectors considered remained virtually unchanged over the last decade. However, there was some sectorial recomposition, with firms in the other services sector, the most productive of the four sectors considered, increasing their relative weight.

Furthermore, exporting firms are more productive than their non-exporting peers and therefore the increase in the number of active firms trading internationally, across all the sectors, is a positive development. However, it is also notable that none of the groups recorded significant productivity gains between 2008 and 2017. It is also interesting to note that the productivity differential linked to participation in international trade is also evident, although on a smaller scale, for firms that import a significant part of the goods and services used in their production process. This group of importing firms (which, importantly, only partially overlaps with the group of exporters) remained relatively stable during the period in review, but recorded some productivity gains, both for less productive firms and for top firms.

Considering the firms active in 2017, the new firms (i.e. those created from 2008 onwards) present a convergence pattern towards the productivity level of the incumbent firms (i.e. those created before 2008). The best firms entering the market (in the 90th percentile of the respective productivity distribution) perform particularly strongly, overtaking the best incumbent firms (again, in the respective 90th percentile) after a certain period of activity.

There is a clear positive relationship between productivity and the size of the firms. The positive differential for larger firms is visible across the whole distribution (i.e. both for more and for less productive firms), increasing in the highest percentiles. For this reason, it is especially important to assess Portuguese firms' growth potential. Aside from the aforementioned sectorial recomposition in favour of the services sector, where the prevalence of very small firms is higher, the results also indicate growth difficulties across the different sectors, resulting principally from the developments between 2008 and 2012 and the severity of the economic and financial crisis that affected Portugal.

Lastly, the results suggest that firms are less sensitive to the economic cycle when they are in the highest productivity percentiles, compared to firms in the lowest percentiles. Despite the differentiated response to the cycle, the productivity levels in the different percentiles in 2017 are relatively similar to those of 2008, remaining below in the construction sector. Productivity is now above the 2008 level only in the sector wholesale and retail trade, repair of vehicles, accommodation and food service activities.

The firm-level analysis presented in this Special issue aimed to provide an understanding of the developments in labour productivity in Portugal. This concept of productivity has great relevance from the point of view of analysis of economic developments. Indeed, gains in labour productivity are fundamental, as they allow firms to create resources that can be channelled into investment and, at the same time, help sustain increases in real wages.

It is important to mention that this analysis is partial, as the sectors considered represent around

two-thirds of the real GVA of the Portuguese economy. Furthermore, developments in this measure of productivity result from the contribution of the various production factors, namely the quantity and quality of human capital, increases in the capital stock per worker and advances in technology. Thus the results outlined in this Special issue must be read in conjunction with the individual developments in these elements.

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Annex 1 • Formula for calculating labour productivity

Gross value added at factor cost, for firm i in year t , ($GVA_{fc_{it}}$), was calculated from the following expression:

$$GVA_{fc_{it}} = Production_{it} - Intermediate\ costs_{it} + Operating\ subsidies_{it} - Indirect\ taxes_{it}$$

Where Production and Annual intermediate costs for each firm were obtained respectively by:

$$Production_{it} = Turnover_{it} + Variation\ in\ production_{it} + Capitalized\ production_{it} + Supplementary\ income_{it}$$

$$Intermediate\ costs_{it} = Costs\ of\ goods\ sold\ and\ material\ consumed_{it} + Supplies\ and\ external\ services_{it}$$

In turn, the number of full-time equivalent workers for firm i in year t , (FTE_{it}), was calculated as follows:

$$FTE_{it} = Number\ of\ full - time\ employees_{it} + 0.5 \times Number\ of\ part - time\ employees_{it}$$

The use of the 0.5 weighting for part-time is in line with the Eurostat statistics for the average number of weekly hours worked per part-time worker.

Annex 2 • Quantile regression – complete table

The results presented are the output of a quantile regression, which provides descriptive statistics conditional on the other explanatory variables included in the model. The dependent variable corresponds to the different productivity percentiles, in thousands of euro per worker. The regression is estimated for the years from 2008 to 2017. The coefficients should be interpreted by reference to the omitted category.

Variables	10 th percentile	25 th percentile	50 th percentile	75 th percentile	90 th percentile
Size (Omitted category: micro firms)					
Small firms	5.860 (0.0169)	4.424 (0.0176)	5.090 (0.0242)	6.212 (0.0414)	7.730 (0.102)
Medium firms	6.984 (0.0386)	6.942 (0.0631)	9.421 (0.0897)	13.470 (0.144)	25.060 (0.546)
Large firms	7.336 (0.178)	8.649 (0.184)	15.520 (0.272)	31.050 (0.893)	90.020 (4.414)
Participation in international trade (Omitted category: non-exporters and non-importers)					
Only exporters	3.432 (0.0409)	4.758 (0.0395)	8.459 (0.0567)	14.260 (0.0955)	24.000 (0.266)
Only importers	2.647 (0.0317)	3.351 (0.0285)	5.766 (0.0411)	10.450 (0.0767)	17.850 (0.176)
Firms simultaneously exporters and importers	3.785 (0.0588)	5.775 (0.0721)	9.879 (0.0981)	16.400 (0.161)	25.610 (0.417)
Activity sectors (Omitted category: Manufacturing)					
Construction	-1.346 (0.0344)	-0.359 (0.0256)	-0.150 (0.0250)	-0.043 ^(a) (0.0443)	2.224 (0.110)
Other services	-0.375 (0.0263)	0.432 (0.0213)	1.935 (0.0244)	5.382 (0.0440)	13.600 (0.109)
Trade, repair, accommodation and food services	-0.486 (0.0235)	-0.666 (0.0193)	-0.771 (0.0211)	-0.674 (0.0363)	0.350 (0.0795)
Cohorts (surviving firms) (Omitted category: firms created before 2008)					
Firms created in 2008	-1.789 (0.0719)	-0.818 (0.0365)	-0.677 (0.0392)	-0.159 (0.0804)	1.443 (0.205)
Firms created in 2009	-2.026 (0.0742)	-1.036 (0.0388)	-0.855 (0.0464)	-0.515 (0.0816)	0.191 ^(a) (0.197)
Firms created in 2010	-1.975 (0.0662)	-0.997 (0.0395)	-0.783 (0.0467)	0.152 ^(a) (0.103)	3.007 (0.243)
Firms created in 2011	-2.033 (0.0751)	-1.152 (0.0378)	-1.182 (0.0423)	-1.197 (0.0765)	-1.102 (0.186)
Firms created in 2012	-2.708 (0.0760)	-1.593 (0.0418)	-1.686 (0.0471)	-1.726 (0.0869)	-1.426 (0.233)
Firms created in 2013	-2.995 (0.0652)	-1.872 (0.0419)	-2.022 (0.0422)	-2.217 (0.0878)	-2.479 (0.225)
Firms created in 2014	-4.188 (0.0382)	-2.786 (0.0489)	-2.511 (0.0496)	-2.626 (0.0955)	-2.661 (0.225)
Firms created in 2015	-5.088 (0.0336)	-4.032 (0.0637)	-3.178 (0.0644)	-2.912 (0.127)	-2.491 (0.300)
Firms created in 2016	-8.476 (0.152)	-7.787 (0.132)	-4.958 (0.105)	-4.455 (0.167)	-4.266 (0.424)
Firms that did not "survive"	-4.682 (0.0188)	-4.635 (0.0204)	-4.119 (0.0162)	-5.221 (0.0293)	-7.493 (0.0706)
Constant	5.168 (0.0318)	9.999 (0.0270)	14.200 (0.0304)	20.970 (0.0546)	31.490 (0.132)
Number of observations	2 404,405	2 404,405	2 404,405	2 404,405	2 404,405
Year fixed effects (Omitted category: 2008)	sim	sim	sim	sim	sim

Source: Banco de Portugal calculations based on IES. | Notes: The coefficients with ^(a) are not statistically significant. The remaining coefficients are statistically significant with a significance level of at most 5%. The robust standard errors are presented in parentheses.

Annex 3 • Additional statistics by exporter and importer status – absolute values and relative weight

	Number of firms				Relative weight		
	2008	2017	Difference 2017 and 2008	Growth rate 2017 and 2008	2008	2017	Difference 2017 and 2008
Manufacturing							
Only exporters	3,021	3,865	844	28%	8.9%	12.0%	3.1 p.p.
Only importers	2,942	2,509	-433	-15%	8.6%	7.8%	-0.8 p.p.
Firms simultaneously exporters and importers	2,427	2,714	287	12%	7.1%	8.4%	1.3 p.p.
Total external market	8,390	9,088	698	8%	24.7%	28.2%	3.6 p.p.
Total internal market	25,641	23,091	-2550	-10%	75.3%	71.8%	-3.6 p.p.
Construction							
Only exporters	1,171	1,544	373	32%	3.4%	5.5%	2.1 p.p.
Only importers	531	521	-10	-2%	1.5%	1.8%	0.3 p.p.
Firms simultaneously exporters and importers	126	219	93	74%	0.4%	0.8%	0.4 p.p.
Total external market	1,828	2,284	456	25%	5.2%	8.1%	2.8 p.p.
Total internal market	33,115	25,984	-7131	-22%	94.8%	91.9%	-2.8 p.p.
Other services							
Only exporters	3,840	6,595	2,755	72%	5.5%	7.8%	2.3 p.p.
Only importers	1,244	1,592	348	28%	1.8%	1.9%	0.1 p.p.
Firms simultaneously exporters and importers	281	507	226	80%	0.4%	0.6%	0.2 p.p.
Total external market	5,365	8,694	3,329	62%	7.7%	10.3%	2.6 p.p.
Total internal market	64,255	75,758	11,503	18%	92.3%	89.7%	-2.6 p.p.
Trade, repair, accommodation and food services							
Only exporters	2,040	3,134	1,094	54%	2.1%	3.1%	1.0 p.p.
Only importers	12,390	12,382	-8	0%	12.5%	12.1%	-0.4 p.p.
Firms simultaneously exporters and importers	1,479	2,107	628	42%	1.5%	2.1%	0.6 p.p.
Total external market	15,909	17,623	1,714	11%	16.1%	17.2%	1.1 p.p.
Total internal market	82,993	84,759	1,766	2%	83.9%	82.8%	-1.1 p.p.

Source: Banco de Portugal calculations based on IES.

Annex 4 • Regression of difference in differences – complete table – productivity gains of the new exporters between 2008 and 2017

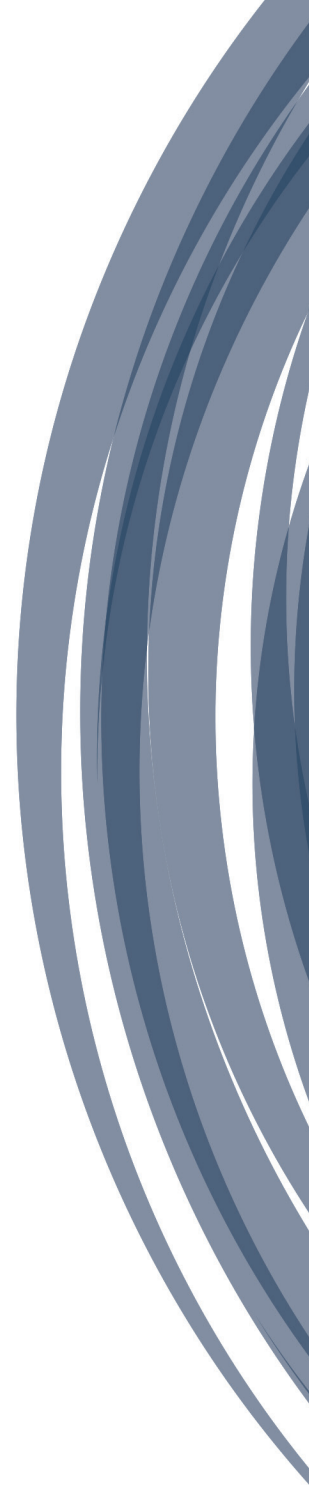
The analysis is intended to be illustrative, focusing on the group of incumbent firms (which does not account for the universe of new exporters). The difference in differences regression was a quantile regression, in which productivity in thousands of euro per worker is the dependent variable. Two groups of firms were defined:

- Group 1: incumbent firms that did not export in 2008 and maintained that status in 2017 (control group);
- Group 2: incumbent firms that did not export in 2008 and gained exporter status in 2017 (treatment group).

The difference $(T_{2017} - T_{2008}) - (C_{2017} - C_{2008})$ – given in the third line of the table – reflects the treatment group's additional gain during the period considered over the control group (respectively the new exporters and non-exporters among the incumbents).

Variables	10 th percentile	25 th percentile	50 th percentile	75 th percentile	90 th percentile
Productivity differential between 2017 and 2008 for both groups	-0.657 (0.0573)	-0.263 (0.0338)	-0.227 (0.0457)	-0.237 (0.0896)	-0.928 (0.220)
Initial productivity differential between Group 2 and Group 1	1.692 (0.206)	2.901 (0.167)	5.861 (0.278)	9.666 (0.400)	15.390 (1.068)
Increase in the differential between Group 2 and Group 1 in 2017	1.710 (0.272)	1.615 (0.222)	1.220 (0.384)	1.787 (0.596)	2.720 (1.494)
Size (Omitted category: micro firms)					
Small firms	5.295 (0.0530)	4.559 (0.0489)	5.994 (0.0716)	7.744 (0.134)	10.800 (0.315)
Medium firms	7.545 (0.196)	9.000 (0.187)	12.410 (0.264)	18.650 (0.573)	40.360 (1.904)
Large firms	5.777 (0.334)	8.779 (0.944)	17.320 (0.977)	39.830 (4.257)	134.100 (15.12)
Activity sectors (Omitted category: Manufacturing)					
Construction	1.513 (0.145)	0.145 (0.0630)	0.154 (0.0777)	-0.490 (0.157)	-6.426 (0.439)
Other services	0.820 (0.147)	0.604 (0.0603)	2.495 (0.0733)	5.410 (0.159)	9.865 (0.502)
Trade, repair, accommodation and food services	1.457 (0.129)	-0.281 (0.0531)	-0.057 ^(a) (0.0616)	0.291 (0.137)	-3.279 (0.407)
Constant	4.242 (0.130)	9.411 (0.0510)	13.520 (0.0566)	20.600 (0.130)	36.340 (0.402)
Number of observations	254,390	254,390	254,390	254,390	254,390

Source: Banco de Portugal calculations based on IES. | Notes: The coefficients with (a) are not statistically significant. The remaining coefficients are statistically significant with a significance level of at most 10%. The robust standard errors are presented in parentheses.





III Series

Quarterly series for the Portuguese
economy: 1977-2018

Annual series on household
wealth: 1980-2018

Quarterly series for the Portuguese economy: 1977-2018

Every year Banco de Portugal discloses the update of the quarterly long series for the Portuguese economy.¹ These series are distributed in three blocks: expenditure, disposable income and labour market.

The update released in this Bulletin maintains the same breakdown as the previous ones and includes, for the first time, quarterly figures for 2018.² The data is consistent with the latest version of the Quarterly National Sector Accounts published by Statistics Portugal on 26 March 2019 and mainly follows the methodological procedures described in detail in Cardoso and Sequeira (2015).³

As regards the main expenditure components, the series for the period from 1995 onwards match the quarterly data released by Statistics Portugal, both at current prices and in volume (chain-linked volume data with reference year 2011).

In turn, disposable income series are adjusted for seasonal and calendar effects (whenever a seasonal pattern was identified) and for this reason they may differ from the ones published by Statistics Portugal (in the Quarterly National Sector Accounts) from 1999 Q1 onwards.

In the labour market block, series are grouped according to two different measures: full-time equivalent (National Accounts concept) and thousands of individuals (Labour Force Survey concept). Note that the series measured in thousands of individuals, as well as the unemployment rate series, only differ from those published in the Labour Force Survey due to seasonal adjustments.

In general, seasonal adjustments were performed using the X13-ARIMA procedure (via the JDemetra+ software).

1. Until 2018, these series were published in the *Economic Bulletin* of June.

2. Quarterly series for the 1977-2018 period are only available in electronic format on Banco de Portugal's webpage for this *Economic Bulletin*.

3. Cardoso, F. and Sequeira, A. (2015), "Quarterly series for the Portuguese economy: 1977-2014", *Occasional Paper* No 1, Banco de Portugal.

Annual series on household wealth: 1980-2018

The annual series on household wealth, for the period 1980-2018, correspond to an update of the estimates published in the *Economic Bulletin* of June 2018. These wealth estimates, published annually,¹ include the financial component (assets and liabilities) and housing (the main component of non-financial wealth). The concepts and methodology are identical to those described in Cardoso, F., Farinha, L. and Lameira, R. (2008).²

The financial series (assets and liabilities) presented here are consistent with the latest version of national financial accounts published by Banco de Portugal, which are available for the 1994-2018 period. The financial series for the period before 1994 were estimated using the implicit rates of change in the previous wealth series and obtained in accordance with the methodology described in detail in Cardoso, F. and Cunha, V. (2005).

The methodology used to estimate housing wealth is based on a method normally utilised to calculate capital stock estimates – the perpetual inventory method. This method consists in successively accumulating fixed capital investment (in this case, in housing), postulating reasonable hypotheses for its service life and depreciation method.

The series on housing wealth was adjusted, so as to incorporate for the 2000-2016 period the estimates of the housing capital stock, published by Statistics Portugal.³ Estimates made available by Statistics Portugal do not include the underlying value of land (which is included in the wealth series published here). That value was estimated for the years under review. In order to estimate the value of land, we considered the ratio defined for tax purposes (regarding housing evaluations for the IMI – municipal property tax), which corresponds to 25% of the housing overall value. The remaining years of the long series of housing wealth (for the 1980-1999 and 2017-2018 periods) were calculated in compliance with the rates of change in the stock series obtained through the above-mentioned methodology, based on long series of GFCF in housing. The long series of GFCF in housing used to calculate the respective housing stock include the latest National Accounts data (for the 1995-2018 period).

1. The series are only available in electronic format on Banco de Portugal's webpage for this *Economic Bulletin*.

2. Cardoso, F., Farinha, L. and Lameira, R. (2008). "Household wealth in Portugal: revised series". *Occasional Paper* No 1. Banco de Portugal. This publication corresponds to the revised series previously published in Cardoso, F. and Cunha, V. (2005). "Household wealth in Portugal: 1980-2004" *Working Paper* No 4. Banco de Portugal, where the calculation methodology is described in more detail.

3. Statistics Portugal published the capital stock accounts in November 2017 for the first time, available on the National Accounts area of its website. For further details, see: Statistics Portugal (2017). "Capital stock (Base 2011) 2000-2015". Press release of 24 November 2017.

