Economic Bulletin

June 2019

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1 Introduction

Maturing expansionary phase of the business cycle

The projections for the Portuguese economy point to the maintenance of a trajectory of expansion over the period 2019-21, although at a slower pace than that observed in recent years. After growing by 2.1% in 2018, real Gross Domestic Product (GDP) is expected to grow by 1.7% in 2019 and 1.6% in 2020 and 2021 (Table I.1.1).

Table I.1.1 • Projections of Banco de Portugal for 2019-21 | Annual rate of change, in percentage

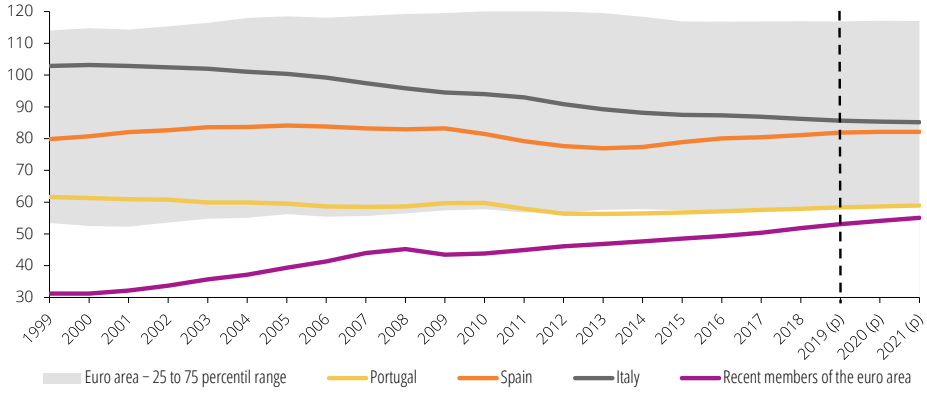
	% of GDP 2018	EB june 2019				EB march 2019			
		2018	2019 (p)	2020 (p)	2021 (p)	2018	2019 (p)	2020 (p)	2021 (p)
Gross domestic product	100	2.1	1.7	1.6	1.6	2.1	1.7	1.7	1.6
Private consumption	65	2.5	2.6	2.0	1.7	2.5	2.7	1.9	1.6
Public consumption	17	0.8	0.5	0.5	0.5	0.8	0.3	0.2	0.2
Gross fixed capital formation	17	4.4	8.7	5.8	5.5	4.4	6.8	5.8	5.2
Domestic demand	100	2.8	3.5	2.3	2.2	2.7	3.0	2.3	2.0
Exports	44	3.6	4.5	3.1	3.4	3.7	3.8	3.7	3.6
Imports	43	4.9	8.0	4.3	4.4	4.9	6.3	4.7	4.1
Contribution to GDP growth, net of imports (in p.p.)(a)									
Domestic demand		1.3	1.3	1.1	1.0	1.3	1.3	1.1	1.0
Exports		0.8	0.4	0.5	0.5	0.8	0.4	0.6	0.7
Employment (b)		2.3	1.3	0.8	0.4	2.3	1.5	0.9	0.4
Unemployment rate		7.0	6.3	5.7	5.3	7.0	6.1	5.5	5.2
Current plus capital account (% of GDP)		0.4	0.1	0.2	0.2	0.4	0.6	0.6	0.9
Trade balance (% of GDP)		1.0	-0.5	-0.7	-1.1	1.0	0.2	-0.2	-0.4
Harmonized index of consumer prices		1.2	0.9	1.2	1.3	1.2	0.8	1.2	1.3

Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) –projected, (p.p.) – percentage points. For each aggregate, this table shows the projection corresponding to the most likely value, conditional on the set of assumptions considered. (a) The demand aggregates net of imports are obtained by subtracting an estimate of the imports needed to meet each component. The import content calculations were based on 2015 data. For more information, see the Box "Update of the import content of global demand for the Portuguese economy" in the March 2019 issue of the Economic Bulletin. Differences between GDP growth rate and the sum of the contributions is due to rounding effects. (b) Total employment, in number of persons according to the national accounts concept.

The expected evolution of the Portuguese economy corresponds to a phase of maturation of the economic cycle that will translate into GDP growth broadly in line with the estimates available for potential growth.[1] According to the projections published by the European Central Bank (ECB), the maturing of the expansion process is also observed in the euro area.[2] Thus the growth projected for the Portuguese economy is on average slightly above that projected for the euro area, implying the maintenance of a very gradual process of real convergence of the Portuguese economy. Despite these developments, at the end of the projection horizon, GDP per capita in Portugal will continue to be close to 60% of the average GDP per capita of the euro area, which is slightly lower than the level observed at the beginning of the monetary union (Chart I.1.1).

1. The methodologies used to calculate potential output are described in Duarte, Maria and Sazedj (2019), "Potential output: How does Portugal compare with the euro area over the last 40 years?", *Banco de Portugal Economic Studies* Vol. V, No. 2.
2. See "Eurosystem staff macroeconomic projections for the euro area", *Monthly Bulletin*, ECB, June 2019.

Chart I.1.1 • Real GDP *per capita* in Portugal and in the euro area countries | In percentage of the euro area GDP per capita



Sources: AMECO, Banco de Portugal, Eurosystem and Statistics Portugal. | Notes: (p) – projected. The GDP projections correspond to the Eurosystem and population projections correspond to the AMECO. For 2021 there are no projections for population in the AMECO database, so a rate of change similar to that of 2020 was assumed. The recent members of euro area are Cyprus, Estonia, Latvia, Lithuania, Malta, Slovakia and Slovenia.

Over the projection horizon, the Portuguese economy should continue to benefit from a relatively benign economic and financial environment (Chapter 2). The financing conditions will remain broadly favourable for all sectors of the economy and external demand for Portuguese goods and services is expected to grow slightly below 3% on average, decelerating in 2019 and recovering in the following years.[3]

As observed in recent years, economic activity will be supported by growth in private consumption, by the buoyancy of gross fixed capital formation (GFCF), particularly of the business component, and by an increase in exports. Similar to 2018, the contribution of domestic demand to GDP growth will be higher than that of exports over the projection horizon. This growth pattern results in a negative balance of the goods and services account from 2019 onwards. Notwithstanding this evolution, a small surplus is projected for the current and capital account over the projection horizon, benefiting from the expected increase in transfers from the European Union (EU) and the reduction in interest on public debt.

Inflation, measured by the rate of change in the Harmonised Index of Consumer Prices (HICP), is expected to remain contained over the projection horizon, increasing from 0.9% in 2019 to 1.3% in 2021. This developments occur within a context of a gradual reduction in the margins available in the labour and product markets, with most estimates suggesting negative unemployment gaps and positive output gaps.

GDP and inflation projections revised marginally *vis-à-vis* March

Compared to the projections published by Banco de Portugal in March 2019, GDP growth was slightly revised downwards in 2020 (by -0.1 p.p.), remaining unchanged in 2019 and 2021. The maintenance of the GDP projection for 2019 has implicit a stronger growth of investment and exports (despite the downward revision of external demand) as well as in imports. The revisions to GDP components chiefly reflect the information available for the first quarter of the year, which showed stronger economic activity than anticipated in March, both in terms of final demand

3. This projection includes the Eurosystem exercise published recently by the ECB, using the set of external assumptions consistent with that exercise.

and imports. The downward revision in 2020 reflects the new international environment assumptions, in particular lower external demand for Portuguese goods and services than anticipated in March (Chapter 2).

Inflation was revised slightly upwards in 2019 (by +0.1 p.p.), after incorporating the latest information, in particular prices of accommodation services. For 2020-21, inflation is projected to remain unchanged *vis-à-vis* March. In regard to the Portuguese economy's net lending capacity, the current and capital account surplus is lower throughout the projection horizon. This reflected the downward revision of the goods and services account balance, resulting to a large extent from data on international trade of goods for the first quarter of 2019.

2 External environment and technical assumptions of the projections

Slowdown of global economic activity in 2019, in a context of high uncertainty

The latest data suggests that the moderation in the pace of the world economy's expansion observed during 2018 will carry on into the current year. Trade and manufacturing activity have generally continued to slow down in the various economies at the start of 2019, in a context of trade tensions and high political and economic uncertainty. At the same time, activity in the services sector has remained resilient and monetary conditions have become more favourable, above all in the advanced economies, reflecting a more accommodative monetary policy stance adopted by the main central banks. GDP growth has performed better than expected in the first quarter of 2019 for a group of advanced economies, including the euro area. However, these surprises have chiefly reflected idiosyncratic factors of a temporary nature.

Table I.2.1 • Projection assumptions

		EB june 2019				Revisions against EB March 2019			
		2018	2019	2020	2021	2018	2019	2020	2021
International environment									
World GDP	yoy	3.6	3.1	3.4	3.3	0.1	-0.2	0.0	0.0
World trade	yoy	4.1	1.4	3.1	3.4	-0.3	-1.4	-0.5	-0.2
External demand	yoy	3.2	2.3	3.0	3.1	-0.2	-0.8	-0.6	-0.3
Oil price in dollars	aav	71.1	68.1	65.8	62.7	0.0	6.4	4.5	2.1
Oil price in euros	aav	60.2	60.6	58.7	56.0	0.0	6.4	4.9	2.8
Monetary and financial conditions									
Short-term interest rate (3-month EURIBOR)	%	-0.3	-0.3	-0.3	-0.2	0.0	0.0	-0.1	-0.2
Implicit interest rate in public debt	%	2.9	2.8	2.7	2.6	0.0	0.0	0.0	0.0
Euro effective exchange rate index	yoy	2.5	-1.8	0.0	0.0	0.0	-0.4	0.0	0.0
Euro-dollar exchange rate	aav	1.18	1.12	1.12	1.12	0.0	-1.3	-1.7	-1.7

Source: Eurosystem (Banco de Portugal calculations). | Notes: yoy - year-on-year rate of change, % - per cent, aav - annual average value. The technical assumption for oil prices is based on futures markets. Developments in the 3-month Euribor rate are based on expectations implied in futures contracts. The implicit interest rate on public debt is computed as the ratio of interest expenditure for the year to the simple average of the stock of debt at the end of the same year and at the end of the preceding year. The projection for the implicit interest rate in public debt is based on an estimate that includes assumptions for the interest rate associated with new issuances. An increase in the exchange rate corresponds to an appreciation of the euro. Euro effective exchange rate is computed against a group of 19 partner countries. The revision in euro-dollar exchange rate is in percentage. The technical assumption for bilateral exchange rates assumes that the average levels observed in the two weeks prior to the cut-off date will remain stable over the projection horizon.

In this regard, the assumptions for the external environment point to a decrease of global GDP growth from 3.6% in 2018 to 3.1% in 2019 (Table I.2.1).[4] This slowdown should be broad-based across economies. In 2020-21 growth is projected to stabilise at around 3.4%, which is slightly lower than the average observed before the financial crisis and close to global potential growth. In comparison to the March 2019 projections, the assumptions for global GDP growth were only marginally revised and continue to be driven by three factors. Firstly, the cyclical momentum in the main advanced economies is expected to slow in the medium term, as capacity constraints become increasingly binding and the economic policy support gradually decreases. Secondly, the Chinese economy is expected to continue its transition to a lower growth path over the projection horizon, relying less on investment and exports. Lastly, a significant recovery is anticipated in various emerging economies that currently face or have recently passed through deep recessions, such as Argentina and Turkey.

In regard to world trade, trade tensions, the deceleration in manufacturing activity and a weaker technology cycle in Asia[5] are expected to continue to have a negative impact on trade flows. In this regard, the assumptions of these projections suggest a clear slowdown in world trade in 2019, which is generalised across countries, but visible most strongly in the emerging Asia economies. In particular, the growth rate of global imports is expected to fall to a level significantly below that of the global GDP growth rate, and the lowest since the Great Recession in 2009. The negative impact of the uncertainty surrounding protectionism is expected to dissipate in the medium term, with world trade growing at a pace close to that of activity. However, uncertainty over the future framework of world trade continues to be significant. Recently, trade tensions between China and the United States (US) increased, with the entry into force of an additional increase in tariffs applied by the US to products from China, which was followed by retaliation from China. These measures were incorporated in the assumptions for the projections and explain in part the downward revision for the growth in world trade over the projection horizon.

External demand for Portuguese goods and services should slow down in 2019, reflecting the deceleration in intra- and extra-euro area imports, thereafter accelerating in 2020-21 to a rate close to that projected for global trade. Versus the March 2019 projection assumptions, the growth of external demand was revised downwards over the projection horizon, in particular in 2019 and 2020.

Maintenance of favourable monetary conditions

The oil price continued its rising trend from the end of last year, in a context of supply-side restrictions agreed by OPEC+[6] in December 2018, of sanctions on Iran and of sanctions and power supply failures in Venezuela. In annual average terms, the assumptions indicate a gradual reduction of the oil price in 2019-21, but to higher levels than those anticipated in the March 2019 projection exercise. In turn, monetary conditions should remain accommodative. The euro area

4. The technical and external environment assumptions coincide with those of the Eurosystem projection exercise released on 6 June. The technical assumptions include information available up to 15 May.
5. There is evidence that the global technology cycle has been less dynamic since the start of 2018. These developments could result from more structural sector-specific factors, such as the increasing level of saturation in the global market for certain products, such as smartphones, or cyclical factors, for example launch cycles of new models. For more information, see the Box "What the maturing tech cycle signals for the global economy" in the ECB Economic Bulletin, Issue 3/2019.
6. OPEC+ includes the members of OPEC and the countries that also agreed to reduce oil production at different times since the end of 2016, such as Russia and Mexico.

short-term interest rates should remain at historically low levels, in a context of postponement of market expectations over a rise in key ECB interest rates. This postponement partly reflected the ECB's recent monetary policy decisions, namely the extension of the minimum period in which the central bank announced that rates will remain at their current levels. In turn, the long-term interest rates in the euro area, including in Portugal, should remain at historically low levels, in part due to the ECB's public sector purchase programme (Box 1: "The impact of the public sector purchase programme on euro area long-term yields"). Regarding the foreign exchange market, there has been a slight depreciation of the euro in nominal effective terms since the March projections' cut-off date. In annual average terms, the assumption of a constant level over the projection horizon is reflected in a depreciation in the exchange rate in 2019 and a stabilisation in 2020-21.

Regarding the assumptions for public finances, in compliance with the rules adopted in the Eurosystem projection exercises, these projections incorporate the budgetary policy measures approved to-date (or those with a high likelihood of approval), when duly specified in official documents (Box 2: "Medium-term budgetary outlook"). These correspond essentially to the measures included in the State Budget for 2019.

3 Economic activity and prices in Portugal over the 2019-21 projection horizon

The Portuguese economy is expected to continue to grow over the projection horizon, although more slowly than in recent years. According to the projections published in this Bulletin, GDP is expected to increase by 1.7% in 2019 and by 1.6% in 2020 and 2021, compared with an average growth of 2.3% for the period 2016-18. The deceleration in activity reflects the maturing of the business cycle and structural constraints on higher potential growth in the Portuguese economy.

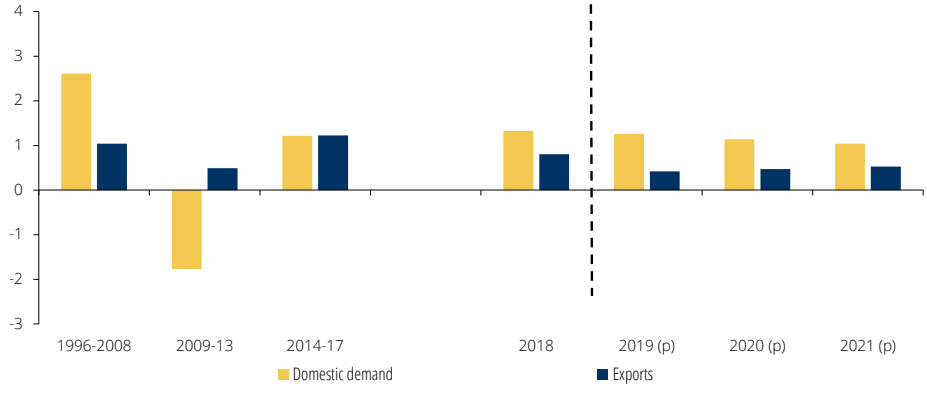
Contribution of domestic demand to GDP growth higher than exports' contribution

GDP growth over the projection horizon is based on favourable developments in domestic demand and exports. As observed during the current recovery period, the contribution from domestic demand is associated with growth in private consumption and in GFCF, particularly of the business component. The contribution of domestic demand to GDP growth (net of imports) is expected to be higher than that of exports (net of imports) over the projection horizon. This contrasts with the average between 2014 and 2017, when these contributions were very close (Chart I.3.1).

The current projections incorporate the flash estimate for GDP from Statistics Portugal for the first quarter of 2019 and the data available up to 21 May. According to the flash estimate, economic activity in Portugal in the first quarter of the year grew by 1.8% year-on-year and 0.5%

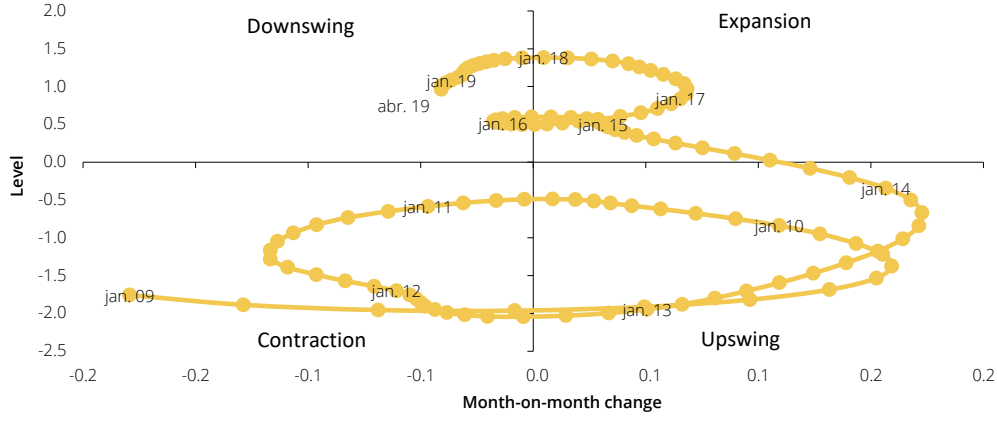
quarter-on-quarter, slightly higher than in the euro area.[7] More moderate growth is predicted for the second quarter, reflecting in particular the reversal of some temporary effects that boosted economic activity in the first quarter of the year. The expected deceleration in economic activity in the second quarter is corroborated by the European Commission's qualitative indicators, in particular the Economic Sentiment Indicator, which in April continued the downward trend observed since the beginning of 2018 (Chart I.3.2).

Chart I.3.1 • Contributions (net of imports) of domestic demand and exports to GDP growth | In percentage points



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

Chart I.3.2 • Economic Sentiment Indicator | Cyclical evolution of the Portuguese economy, jan. 09 to apr. 19



Sources: European Commission and Banco de Portugal calculations. | Note: The metodology used is described in Box "Indicators of cyclical developments for the Portuguese economy", in the 2018 October issue of the Economic Bulletin.

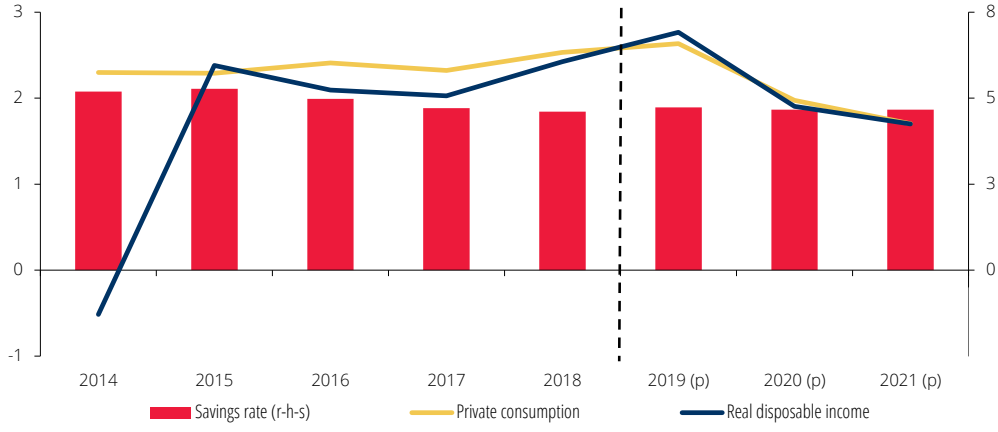
7. The detailed Quarterly National Accounts were released after the cut-off date for data. The analysis of developments in the demand aggregates in the first quarter of 2019 is based on recent conjunctural and qualitative information included in the flash estimate.

Robust growth in private consumption driven by disposable income

After relatively stable growth of around 2.4% over the last five years, private consumption is expected to grow by 2.6% in 2019 and to show more moderate growth in the period 2020-21 (Chart I.3.3).

The increase in private consumption in 2019 is associated with favourable developments in real household disposable income, reflecting the increase in employment and nominal wages, including the minimum wage. The contained developments of prices and the assumptions for the evolution of fiscal variables, in particular the unfreezing of careers in general government, the tax reduction measures for households and the increase in social benefits payments, also contribute to the acceleration of real disposable income in 2019. The favourable developments in private consumption in 2019 are supported by the quantitative indicators available for the first months of the year, in particular the retail trade turnover index and the funds transferred through ATMs and Point-of-Sale terminals. Furthermore, consumer confidence remains high, but at a lower level than has been observed in the recent past. In this context, current consumption of goods and services is projected to accelerate in 2019 and consumption of durable goods is expected to decelerate, strongly influenced by the performance of the motor vehicle component in the first quarter.

Chart I.3.3 • Private consumption, disposable income and savings rate | Annual growth rate, in percentage and level, in percentage of disposable income



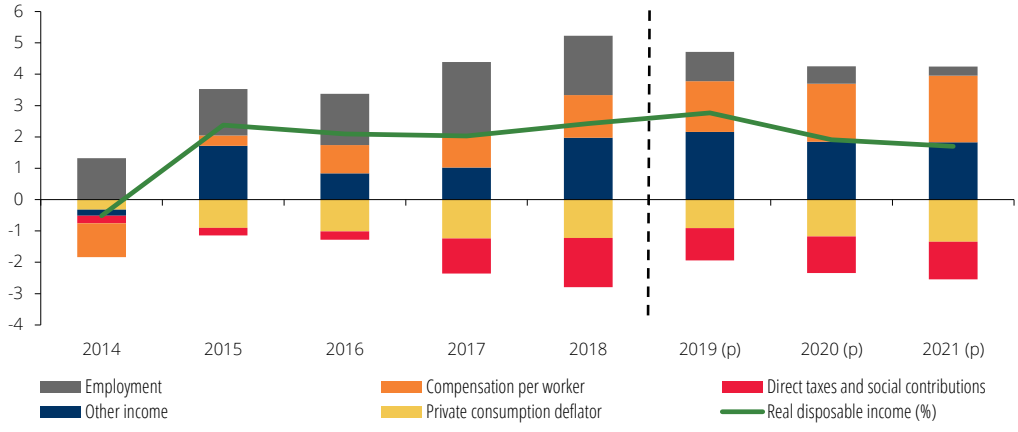
Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected.

Over 2020-21 private consumption is expected to decelerate, reflecting the slowdown in real disposable income. Developments projected for real disposable income reflect, in particular, the deceleration in employment, the dissipation of the impact of the minimum wage increase and the fiscal measures incorporated in 2019, and the progressive increase of inflation. In contrast, the gradual reduction of the slack in the labour market and the increase in productivity should contribute to some acceleration in wages per worker over the projection horizon (Chart I.3.4). In addition to the evolution in disposable income, private consumption should benefit, as has been the case in recent years, from favourable financing conditions over the whole horizon, in

particular the maintenance of historically low interest rates. The low interest rate regime which has been in place over the last few years has contributed to the maintenance of private debt servicing at low levels.

The projection points to a relative stabilisation of the share of private consumption in GDP in the period 2019-21, around 65% in nominal terms, maintaining a share much higher than that observed in most euro area countries (around 53% in the euro average, according to the most recent projections). The household savings rate should remain at low levels, around 5%, significantly lower than that observed for the euro area (around 13%).

Chart I.3.4 • Contributions to the annual growth rate of real disposable income | In percentage points



Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected.

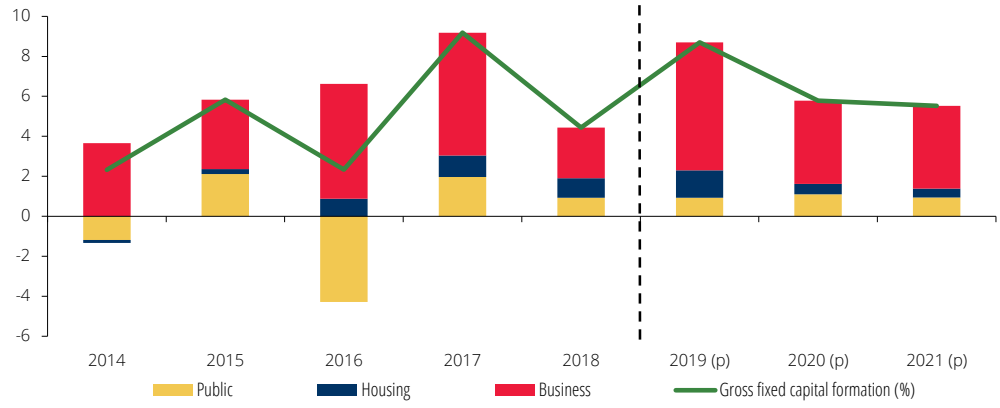
In regard to public consumption, growth of 0.5% in real terms is assumed over the projection horizon, which represents a slowdown compared to 2018. Developments in 2019 result from the expected reduction in spending on goods and services, reflecting the reversal of the one-off effect of spending on the wildfires of 2017 (with an impact on intermediate consumption in 2018) and the expected fall in spending with public-private partnerships (PPPs) in the road sector. Public employment in 2019 is assumed to grow at a pace similar to that of the previous year. In the period 2020-21 the maintenance of the growth rate of public consumption reflects the assumption of a gradual deceleration of the public employment offset by the profile of spending with road sector PPPs.

Strong growth in investment, in particular in 2019

Investment is expected to continue to recover over the projection horizon, in particular in the business component (Chart I.3.5). After increasing by 4.4% in 2018, GFCF should grow by 8.7% in 2019, reflecting the favourable behaviour of construction and investment in machinery and equipment in the first quarter. Over the next few months, the very sharp growth observed at the start of the year is expected to reverse to some extent. Investment is projected to decelerate gradually over 2020-21, to 5.5% growth in 2021. At the end of the projection horizon, total GFCF

is expected to be at a level below that observed before the international financial crisis, while the corporate component should reach the pre-crisis level at the end of 2019.

Chart I.3.5 • Contributions to the annual growth rate of gross fixed capital formation | In percentage points



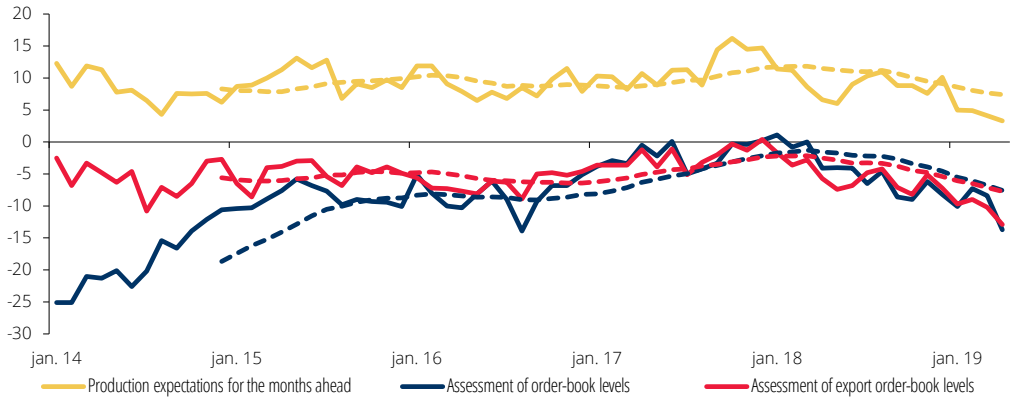
Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected.

The growth of business GFCF over the projection horizon reflects the maintenance of a set of factors favourable to investment, namely: broadly benign financing conditions; implementation of some large-scale infrastructure projects which, in some cases, will be associated with European financing; capacity utilisation rates close to pre-crisis levels; and the need to recover and renewal the capital stock. Developments in investment should also reflect the relatively positive outlook for demand, although growth in world demand is expected to be below that observed in the last few years. However, uncertainty over prospects for the world economy, in particular international trade developments in a context of protectionist tensions, may restrain firms' investment decisions. Indeed, according to the qualitative surveys, entrepreneurs have been less optimistic regarding developments in their business in the near future (Chart I.3.6).

Housing investment is expected to continue to recover, with a significant increase projected for 2019, largely influenced by the strong growth in the first months of the year. A progressive deceleration is anticipated for 2020-21, to growth rates of around 3% in 2021, to which also contributes the slower pace of growth of economic activity compared to recent years. The increase in housing investment over the projection horizon reflects the maintenance of a set of factors that have boosted demand for housing. These include the improvement in the labour market, ongoing access to financing at historically low interest rates, and the strong increase in tourism and demand by non-residents. The increase in profitability relative to other long-term investments, partly reflecting the sharp growth of housing prices since 2014, has also contributed to the recovery in housing investment.[8]

8. According to the House Price Index, cumulative growth in prices in real terms for the period 2014-18 amounted to close to 30%, reaching a level higher than the one observed before the financial crisis.

Chart I.3.6 • Survey data on the manufacturing industry | Balance of responses



Source: European Commission. | Note: The dotted lines correspond to 12-month moving averages.

In regard to public investment, significant growth is assumed throughout the projection horizon, in line with the outlook given in official documents and the expected profile for inflows of European funds.

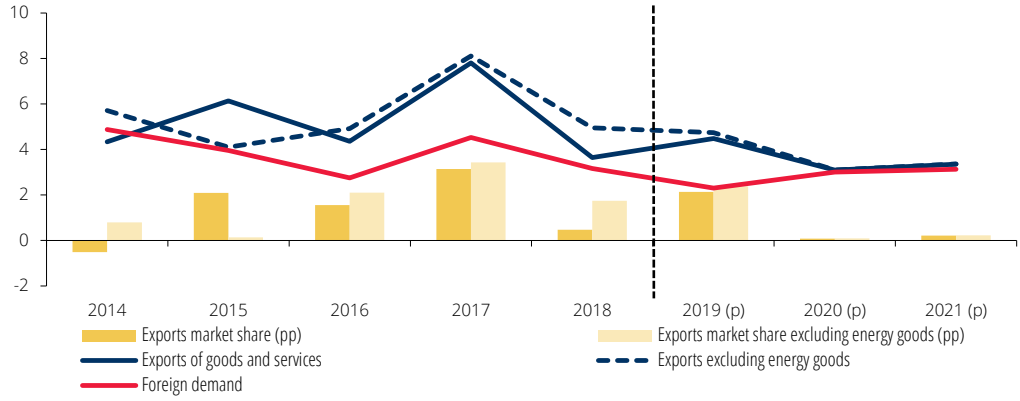
The share of GFCF in GDP, which had been declining for a long period reaching a low of 15% in 2013, has since inverted that trend. Over the projection horizon this ratio is expected to continue to increase gradually, to around 20%, a level close to that projected for the euro area. Underlying this recovery is an increase in the share of business GFCF in GDP, which is expected to increase from 12% in 2018 (close to the value observed in the euro area) to 14% in 2021.

The outlook for private consumption and investment is reflected in the maintenance of the path of reduction of households' and firms' indebtedness ratio over the projection horizon, although at a slower pace than the one observed in recent years. In 2021, households' indebtedness as a percentage of disposable income should be 28 p.p. below that observed in 2008. In turn, the indebtedness level for firms as a percentage of GDP should fall by 23 p.p., which is a fundamental characteristic of the adjustment process taking place in the Portuguese economy over the last few years.

Expansion of exports continues but at a more moderate pace

Exports of goods and services are expected to grow by 3.6% on average over the projection horizon. This growth is below that observed over the last few years, reflecting the maturing of the business cycle in Portugal's main trading partners and smaller market share gains in 2020-21 (Chart I.3.7).

Chart I.3.7 • Exports of goods and services, foreign demand and market share | Annual rate of change, in percentage and changes, in percentage points



Sources: Banco de Portugal, Eurosytem and Statistics Portugal. | Note: (p) – projected.

After increasing by 3.6% in 2018, exports of goods and services are expected to grow by 4.5% in 2019, despite the deceleration in external demand for Portuguese goods and services. Underlying these developments are additional market share gains, associated with exports of non-energy goods and tourism, chiefly reflecting the behaviour observed in the first quarter of 2019.[9]

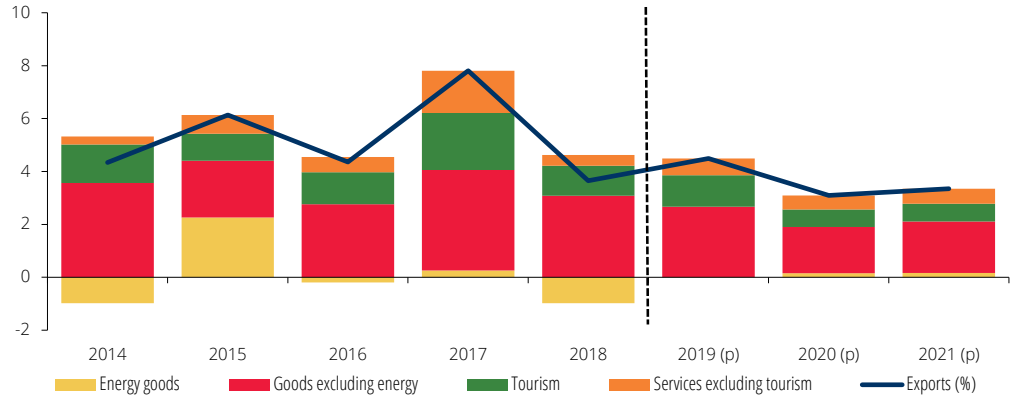
The favourable developments of non-energy goods exports in the first quarter was broad-based across the main types of goods, with a particularly significant increase in car exports and, to a lesser degree, chemicals exports. These developments could also reflect some reversal of temporary effects affecting exports in the second quarter of 2018, including interruptions in production in firms of the automotive and energy sectors. For the remaining quarters of the year, a lower dynamism in this trade flow is anticipated. Indeed, the export order-book level in the manufacturing sector has kept the declining path observed since the beginning of 2018 and managers´ expectations for new export orders remain relatively low compared to recent years. This behaviour may be related to weaker global activity and trade, and to increasing uncertainty related to the possible intensification of protectionist tensions.

In 2020-21, exports growth is expected to be close to that anticipated for external demand for Portuguese goods and services, with marginal market share gains being projected, essentially from the maintenance of a slightly higher dynamism in tourism activity compared to that of external demand (Chart I.3.8). Following the significant growth observed in recent years, tourism exports are expected to slow down in 2020-21, against a background of recovery in some competing destinations.

The projection for exports points to a gradual increase in its share of GDP, reaching 46% in 2021 in nominal terms, which compares to 50% projected for the euro area.

9. In 2018, the lower market share gain partly reflected temporary effects relating to exports of energy goods.

Chart I.3.8 • Contributions to the annual rate of change of exports of goods and services | In percentage points

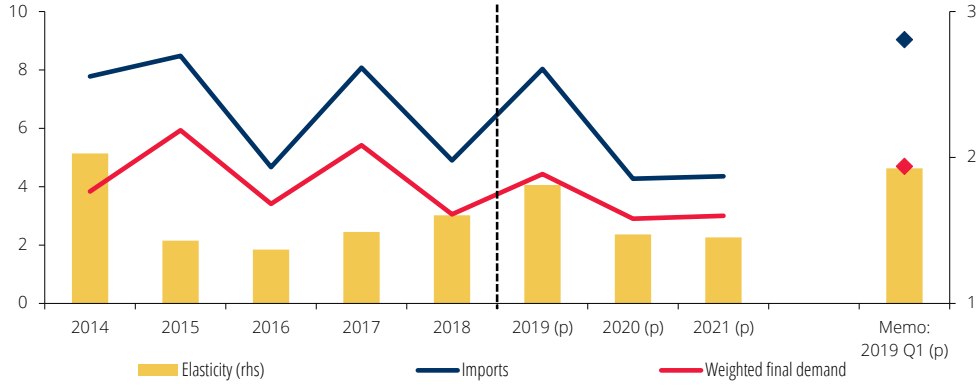


Sources: Banco de Portugal and Statistics Portugal. | Note: (p) – projected.

Strong increase in imports in 2019

Imports of goods and services are expected to grow strongly in 2019 (8.0%, compared to 4.9% in 2018), in a context of a slight slowdown in economic activity. This behaviour is influenced by the significant increase observed in the first quarter and is higher than the one suggested by the evolution of the final demand weighted by imported content, which translates into an elasticity above the historical average in 2019 (Chart I.3.9).

Chart I.3.9 • Imports, weighted final demand and elasticity | Annual rate of change, in percentage



Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. Elasticity is computed as the ratio between the growth of imports of goods and services and the growth of final demand weighted by import content.

The dynamism of imports in the first quarter of 2019 was driven by the strong growth of non-energy goods imports, visible for various types of goods. In addition, the behaviour of energy goods imports in the first quarter may reflect some compensation of negative effects affecting the production in the energy sector in the first months of the year.

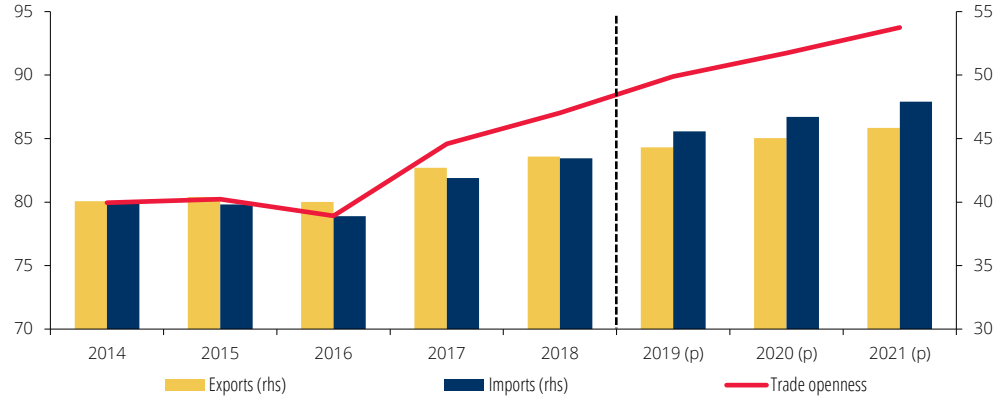
In 2020-21 imports are expected to slow down to an average growth of 4.3%, which is closer to the behaviour of weighted final demand, taking into account the average patterns observed in the

past (elasticity of 1.6 on average in the period 1999-2018). In 2021, the share of imports in GDP is expected to stand at 48% in nominal terms, which compares to around 46% for the euro area, according to the latest projections.

Continued increase in the degree of openness of the Portuguese economy

The developments projected for trade flows lead to the maintenance of the upward trend of the trade openness of the Portuguese economy over the horizon, with imports' share of GDP in nominal terms exceeding that of exports from 2019 onwards (Chart I.3.10). The increase in the degree of internationalization, through the robust growth of exports, played a crucial role in the Portuguese economy's adjustment process and continues to support the expansion of the economy over the projection horizon. However, in a context of uncertainty and downside risks to the international environment, the fact that Portugal is now a more open economy means that it is more vulnerable to a deceleration in the world economy and other external shocks. Compared to other economies with similar characteristics (such as size and location, among others), the trade openness in Portugal is still relatively low.[10]

Chart I.3.10 • Trade openness in the Portuguese economy | In percentage of GDP



Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. Trade openness is calculated as the sum of exports and imports as a percentage of GDP, in nominal terms.

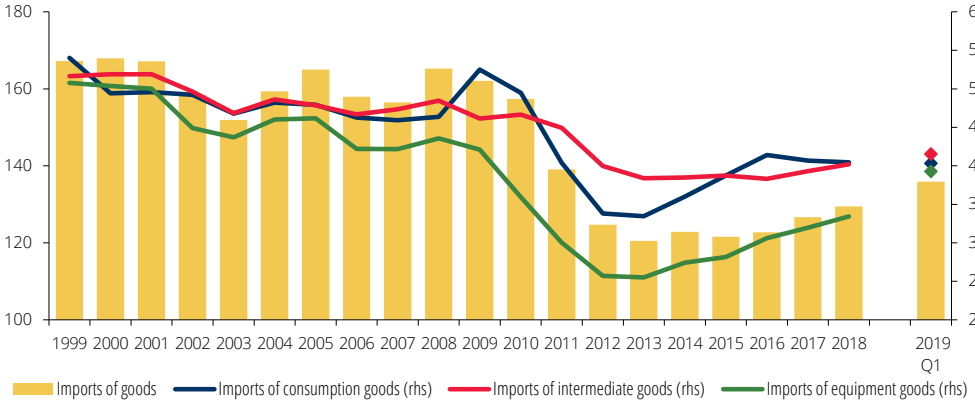
Decrease of the net lending capacity of the Portuguese economy, reflecting the negative balance of the goods and services account

The stronger dynamism of imports vis-à-vis exports, observed in 2018 and intensified in the first quarter of 2019, had a negative impact on the Portuguese economy's net lending capacity. Indeed, after a period in which the current and capital account surplus stood at around 1.4% of GDP, it fell to 0.4% of GDP in 2018. In 2019, a further reduction to 0.1% of GDP is expected. This is largely due to the increase in the goods account deficit in 2018 and 2019.

10. For more details, see "Trade openness of the Portuguese economy: recent developments and outlook", Box 3, *Economic Bulletin*, June 2017.

Taking a longer perspective, the very sharp decline in the goods account deficit over the 2011-16 period reflected weaker developments in imports of the main types of goods, against a background of robust growth of exports. Indeed, imports (as a percentage of exports) fell significantly over this period, especially in the case of equipment and consumer goods (Chart I.3.11). It is important to note that the behaviour of imports over this period was affected by the sharp falls in domestic demand in 2011-13. The trend reversed in 2017-18, with the goods account deficit increasing as a result of the increase in imports (relative to exports). The goods account deficit widened at the end of 2018 and the beginning of 2019, driven by the strong growth of equipment goods imports[11], in a context of a significant increase in business investment. Despite the strong increase in imports, the goods account deficit is below the levels observed before the global financial crisis.

Chart I.3.11 • Nominal imports by type of goods | In percentage of total exports of goods



Source: Statistics Portugal. | Notes: Imports of energy goods (as a percentage of total exports of goods) were not included in the chart given their lower weight (19% on average in the period 1999-2018) and because they are heavily influenced by price effects. In the first quarter of 2019, the evolution of imports of equipment goods reflects, in part, the acquisition of aircrafts under operating leases (operation not recorded in the goods account). Excluding this effect, the level of imports of equipment goods (as a percentage of total exports of goods) in the first quarter of 2019 stands at 35%.

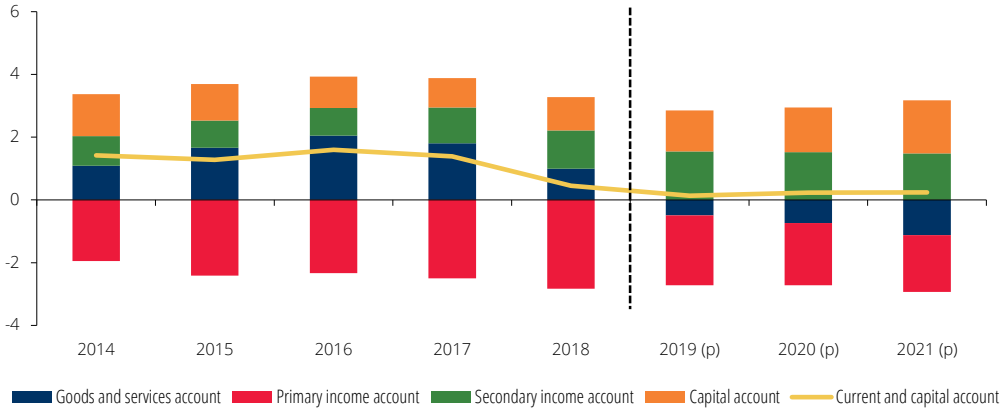
Turning to the services account, its surplus has increased steadily (from 2.1% of GDP in 1999 to 8.3% of GDP in 2018), which is expected to continue over the projection horizon, although at a slower pace. However, these developments are not enough to offset the goods account balance, resulting in a gradual deterioration of the goods and services account balance to negative levels from 2019 onwards. This contrasts with the situation observed in recent years, which was one of the important elements of the Portuguese economy's adjustment process.

The deterioration of the goods and services account balance should be accompanied by an improvement of the income and capital account balances, reflecting the expected increase of the amount of funds received from the EU over the projection horizon, as up to 2018 these funds were slightly below the levels observed in the same stage of the previous programming period.[12] Furthermore, developments in the income account balance benefit from the ongoing low interest rates and the reduction in interest on public debt. In 2021 the capital account

11. International trade data include the export and import of aircraft under an operating lease. However, this type of transaction is not recorded in the goods account. The conclusions remain broadly unchanged when these acquisitions are excluded from equipment goods imports.
12. For a more in-depth analysis, see Box 2 entitled "Impact of EU funds on the current and capital account: Portugal 2020 in perspective", in the March 2019 issue of the *Economic Bulletin*.

balance is projected to increase due to a one-off effect associated with the reimbursement by the European Financial Stability Facility of amounts paid by Portugal under the Economic and Financial Assistance Programme. In this context, the Portuguese economy's net lending capacity, measured by the current and capital account balance, is expected to stabilise on average over the projection horizon at around 0.2% of GDP (Chart I.3.12).

Chart I.3.12 • Current and capital account | In percentage of GDP



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

Constraints on higher growth in economic activity

The projections for the 2019-21 period reflect the maturing of the business cycle, with the reduction of resources available in the labour market and in the product market, and constraints to higher potential growth.

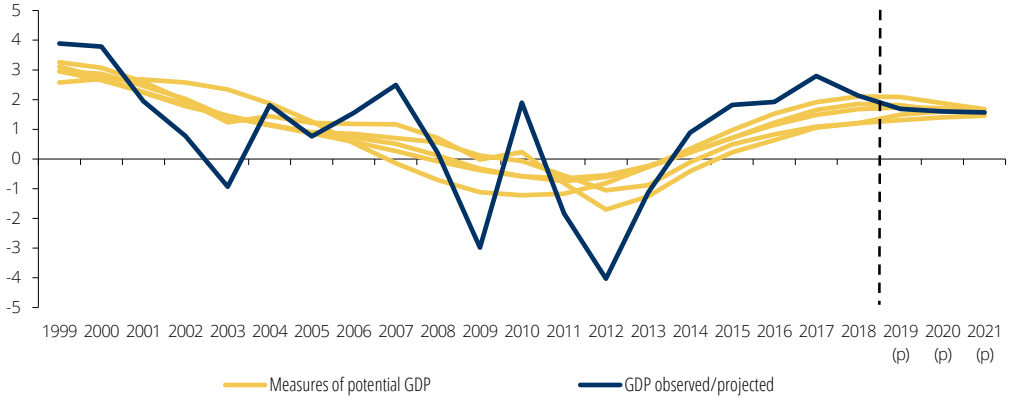
Sustained supply capacity in an economy – or potential GDP – is determined by the quantity and quality of the productive factors and by the total productivity of these factors. During the financial crisis and the euro area's sovereign debt crisis, there was a significant decline in aggregate demand and labour demand, and a sharp increase in the unemployment rate, leading to a high underutilisation of available resources in the labour market and of installed productive capacity. The economic recovery over the recent years has been characterised by strong employment growth and increased capacity utilisation. This evolution is estimated to have driven growth in the Portuguese economy above that estimated for potential output, despite the high uncertainty surrounding estimates for an economy's potential growth (Chart I.3.13). In this regard, most output gap measures, defined as the difference between real output and potential output, suggest that this has been positive since the end of 2017, after a long period of strongly negative values.

Over the projection horizon, the Portuguese economy's potential output is expected to grow by around 1.6%. This growth is close to the estimates available for the euro area, which does not allow to anticipate significant progress in real convergence in the medium term.[13] This reflects the important constraints to a higher potential growth which persist in the Portuguese economy, which include adverse demographic trends, the high indebtedness of the private and public

13. The potential growth estimates for the euro area are those published by international institutions: European Commission (Spring 2019 European Economic Forecast), OECD (May 2019 Economic Outlook) and IMF (Euro Area Policies, Article IV consultation, July 2018) .

sectors, the low levels of capital per worker and the still low level of schooling compared to the European Union countries.

Chart I.3.13 • GDP and potential GDP | Annual growth rate, in percentage



Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. The measures used in the calculation of potencial output are: Hodrick-Prescott filter, Baxter and King filter, Christiano and Fitzgerald filter, calculations based on a Cobb-Douglas production function and calculations based on an unobserved components model. For a detailed description of the potential output measures see: Special issue "Potential output: challenges and uncertainties", *Economic Bulletin*, December 2017; Duarte, Maria and Sazedj (2019), "Potential output: How does Portugal compare with the euro area over the last 40 years?", *Banco de Portugal Economic Studies*, vol. V, n.º 2 e Braz, Campos and Sazedj (2019), "The new ESCB methodology for the calculation of cyclically adjusted budget balances: an application to the Portuguese case", *Banco de Portugal Economic Studies*, vol. V, n.º 2.

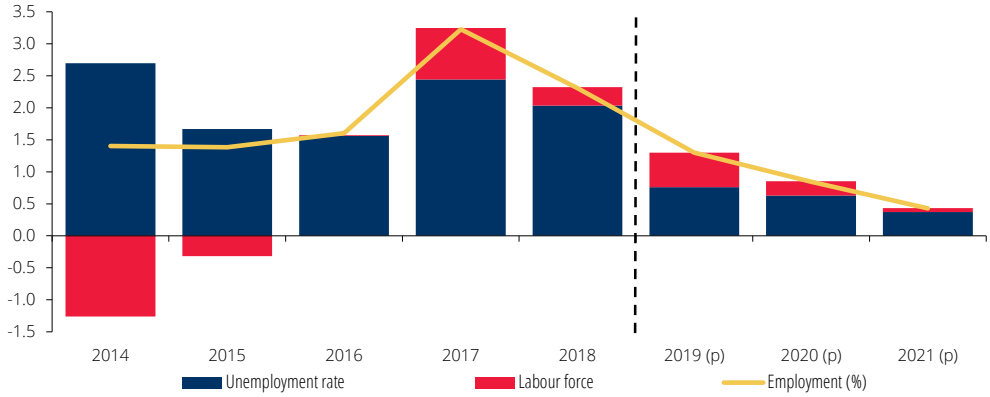
Using a Cobb-Douglas production function, potential output growth in Portugal over the period 2019-21 is estimated to benefit from positive but gradually diminishing contributions from the labour input and progressive increases in total factor productivity, in particular from the increase in the accumulation of human capital.[14] The capital stock contribution is expected to be positive but low, which reflects an investment level only slightly higher than necessary to offset the depreciation of installed capital, in a context of very sharp falls in investment during the crisis.

Moderate growth in employment over the projection horizon

Employment is expected to continue to grow over the projection horizon, although decelerating, reflecting the maturing of the business cycle and increased labour supply constraints. According to monthly employment and unemployment estimates, released by Statistics Portugal, employment increased by 1.4% year-on-year in the first quarter, which is a more moderate rate than in the recent past, and the unemployment rate was 6.5%, recording a new low since the beginning of 2003. Employment is projected to grow by 1.3% in 2019, followed by annual growth of 0.8% and 0.4% for 2020 and 2021 respectively. This deceleration is common to the private and public sectors. Unemployment rate should continue to decrease over the projection horizon, albeit at a more moderate pace than in recent years, reaching 5.3% in 2021.

14. The methodology used to calculate potential output based on a Cobb-Douglas production function is described in Braz et al. 2019.

Chart I.3.14 • Contributions for the annual growth rate of employment | In percentage points



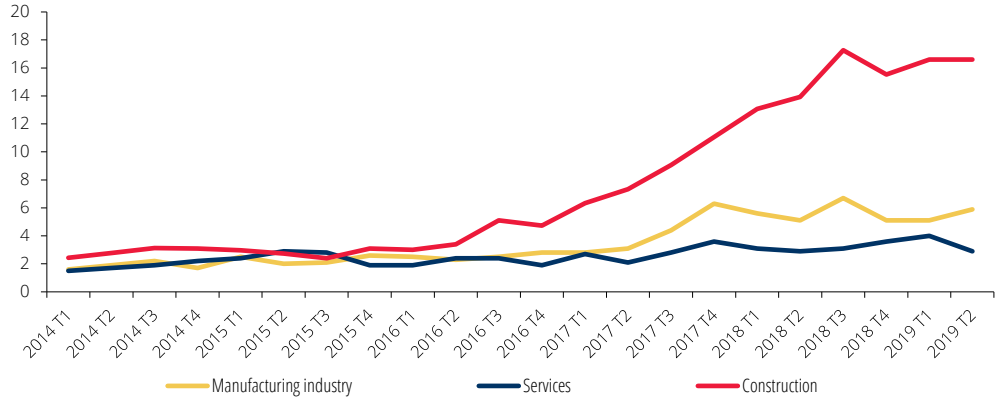
Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. Total employment is measured in number of persons, according to the national accounts concept.

Employment growth projected for the 2019-21 period is linked to the decrease in the number of unemployed individuals and, to a lesser extent, the increase in the labour force (Chart I.3.14). According to the indicator for the labour underutilisation rate calculated by Statistics Portugal[15], this rate has fallen faster than unemployment rate, suggesting that employment's margin for growth through inclusion of unemployed or inactive individuals that are nevertheless attached to the labour market has fallen in the most recent period. This is corroborated by the indicator for the unemployment gap, defined as the difference between the observed and the trend unemployment rate (NAWRU[16]), which shows a negative value since 2018. Furthermore, the European Commission's Opinion Surveys show that the percentage of firms indicating insufficient labour as a factor limiting production increased since the beginning of 2017, in particular in construction and manufacturing sectors (Chart I.3.15).

Regarding the labour force, slightly positive changes are projected to continue over the projection horizon. Despite the unfavourable demographics developments, the labour force should continue to benefit from the return to the labour market of discouraged workers, although at a slower pace than in recent years, from the gradual increase in average life expectancy and retirement age, from the increase in the female participation rate and from positive net migration, similarly to what happened since 2017 (see Special issue "Demographic changes and labour supply in Portugal").

15. The labour underutilization rate aggregates unemployed population, involuntary part-time work, individuals seeking work but not immediately available and individuals available to work but not seeking.
16. NAWRU stands for Non-Accelerating Wage Rate of Unemployment. For more information on the method for calculating NAWRU, see Duarte et al. (2019).

Chart I.3.15 • Percentage of firms indicating labour shortage as a factor limiting production | Percentage of responding firms



Source: European Commission.

At the end of the projection horizon, employment should still stand slightly below that observed in the period immediately before the international financial crisis. However, the employment rate will clearly exceed the 2008 level, reflecting the sharp falls in the labour force during the recession.

Increase in labour productivity in the period 2019-21

The very sharp increase in employment since the beginning of the economic recovery has not been accompanied by growth in capital stock. Indeed, capital stock declined in the 2012-16 period and recorded marginal changes in 2017 and 2018, despite a significant recovery in investment rates over the recent years. This has resulted in an increase in capacity utilisation, which stands close to the pre-crisis levels (Chart I.3.16), and has contributed to the persistence of a low level of capital per worker.[17]

Chart I.3.16 • Productive capacity utilisation rate in manufacturing industry | In percentage

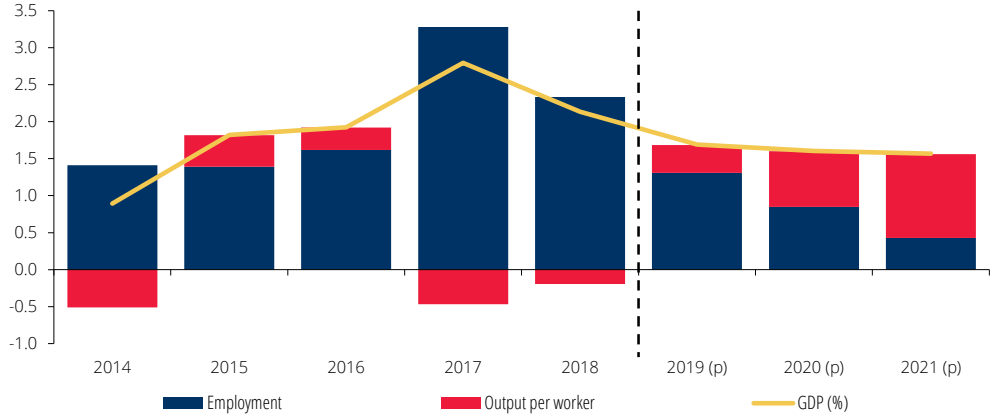
Sources: Banco de Portugal and Statistics Portugal. | Note: The minimum and maximum refers to the 2003Q1 to 2019Q2 period.

17. See Box "Capital stock in the Portuguese economy", *Economic Bulletin*, May 2018.

Over the projection horizon, an increase in output per worker is expected (Chart I. 3.17), reflecting the gradual recovery and renewal of the stock of productive capital, a process which is a slow process by nature, and the improvement in the allocation of resources in the Portuguese economy, following a reorientation towards sectors more exposed to international competition over the past few years. The increase in the average qualification levels of the population and, in particular, the increase in the years of schooling of the labour force, should help increase the accumulation of human capital and also contribute to increasing productivity over the coming years.

In this context, the increase in capital stock, through investments directed towards the more productive and higher value-added sectors, the increase in workers' education level and the reduction of a comprehensive set of context costs are key conditions for sustained economic growth and increased productivity and growth potential of the economy.[18] However, persistently high levels of indebtedness, both in the private and public sectors, are a constraint for stronger investment growth in the coming years.

Chart I.3.17 • Contributions of output per worker and employment to the annual rate of change of GDP | In percentage points



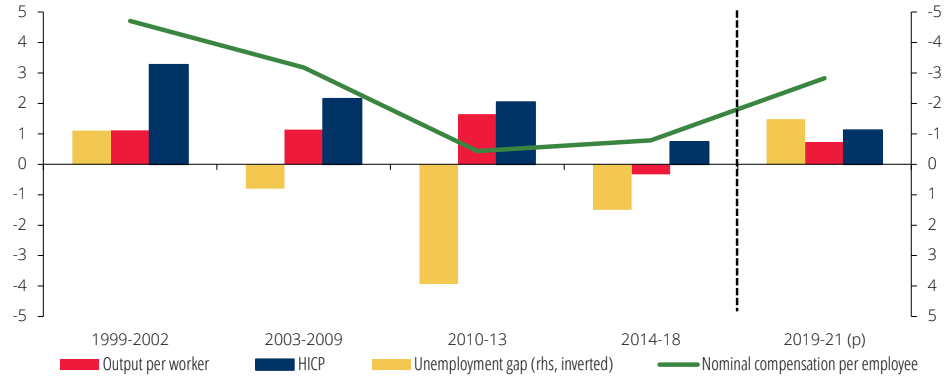
Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. Total employment is measured in number of persons, according to the national accounts concept.

Acceleration in nominal wages

The reduction of the resources available in the labour market, in Portugal as in the euro area, has reflected in higher wage growth in the most recent period. Over the projection horizon, acceleration of wages is expected, in a framework of negative unemployment gaps and increases in labour productivity (Chart I.3.18). In 2019 wage growth is influenced, on the one hand, by the minimum wage increase, an effect that fades out in 2020, and on the other hand, by expectations of more moderate price developments. In turn, wage developments in the public sector include the gradual reversal of general government wage freezes (which started in 2018 and whose effects extend over the projection horizon), as well as the technical assumption of wage updates in the public sector in line with inflation in 2020-21.

18. According to Statistics Portugal's Business Cost of Contexts Survey, the main unfavourable factors are the judicial system, licensing and the tax system.

Chart I.3.18 • Nominal compensation per employee, output per worker, inflation and unemployment gap | Annual rate of change, in percentage and level, in percentage points (period average)

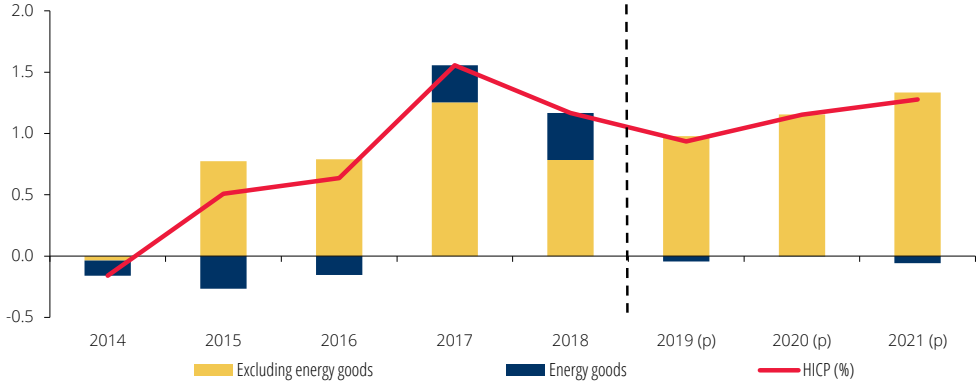


Sources: Banco de Portugal and Statistics Portugal. | Notes: (p) – projected. The unemployment gap is defined as the difference between the observed / projected unemployment rate and the underlying unemployment rate (NAWRU – Non-Accelerating Wage Rate of Unemployment). For more detail on the calculation method of the NAWRU see Duarte et al. (2019).

Moderate price developments in spite of some acceleration of wages

Inflation, as measured by the rate of change in the Harmonised Index of Consumer Prices, is expected to remain contained over the projection horizon, decreasing from 1.2% in 2018 to 0.9% in 2019, and rising gradually to 1.3% in 2021 (Chart I.3.19). The projected path for price developments is based on a gradual increase in inflation excluding energy goods over the horizon and marginally negative changes in energy goods prices, after the increases in the last two years. Compared to the latest projections for the euro area,[19] Portugal is expected to maintain a negative inflation differential vis-à-vis the euro area over the horizon (on average, -0.3 p.p.).

Chart I.3.19 • Contributions to the annual rate of change of HICP | In percentage points



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

In 2019 developments in consumer prices are conditioned by some specific temporary factors, namely the gradual unwinding of very substantial increases in the prices of tourism-related

19. See footnote 2.

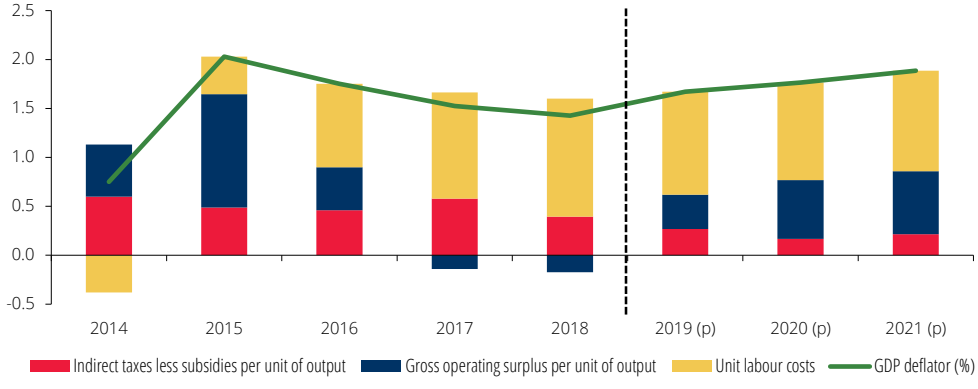
services in 2017-18 and reductions in some administered prices.[20] The figures already observed for 2019 support the maintenance of low inflation, even when the most volatile components are excluded.

The subdued price growth in the period 2019-21 reflects the maintenance of relatively moderate inflationary pressures. At the international level, on the one hand, a decline in oil prices is anticipated, while, on the other hand, increases in import prices of goods excluding energy and in non-energy commodity prices are expected to be higher than in recent years. The depreciation of the euro in the external assumptions in 2019 should also contribute to the increase in import prices valued in euro.

At the domestic level, unit labour costs growth is expected to stabilise at around 2% over the horizon, with a gradual increase in productivity being anticipated. The pass-through of wage costs to prices may be more limited, against a backdrop of slowdown in economic activity and inflation expectations anchored at subdued levels. Indeed, inflation expectations released in May by *Consensus Economics* stood at 1% for 2019 and 1.4% for 2020, and have been revised downwards since the beginning of the year. The weaker link between wage developments and inflation is also apparent in the euro area, with some evidence that this may occur against a background of a prolonged period of low inflation.[21]

Developments in profit margins may be an additional factor to consider when assessing the pass-through of wage costs to prices. In a scenario where the increase in labour costs is absorbed by firms through a reduction of profit margins, there may be no effects on prices. In this context, in the last two years there is some evidence of narrowing of the profit margins, measured by the operating surplus per unit of output. Over the projection horizon, a gradual recovery of profit margins is anticipated, which is expected to contribute to the acceleration path projected for the GDP deflator (Chart I.3.20).

Chart I.3.20 • Contributions to the annual rate of change of GDP deflator | In percentage points



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

20. Prices for school books, electricity and passenger transport services are included in this category.

21. For further details, see Bobeica, E., Ciccarelli, M. and Vansteenkiste, I., 2019, "The link between labor cost and price inflation in the euro area", Working Paper Series 2235, European Central Bank.

4 Uncertainty and risks

The projections presented in this Bulletin refer to the most likely scenario, based on the assumptions set out in Chapter 2. This central scenario may be affected by the materialisation of a set of risks and uncertainties, which involve deviations from the assumptions included in the current projections or the possibility of events occurring that due to their idiosyncratic nature were not considered in the projections. The quantified analysis of the risks and uncertainty surrounding the projections is presented below.

Downside risks to activity and slight upside risks to inflation

The set of risks identified is largely associated with the international environment. The risks considered include the possibility of a higher negative impact of tariffs on trade flows, of an escalation of trade tensions between China and the US, and of the US raising trade barriers to products from the European Union and Japan, particularly regarding cars. In addition, there is a risk of worsening geopolitical tensions, particularly in the Middle East and especially between the US and Iran. These risks may negatively affect global trade and activity and lead to a decrease in confidence and to an increase in risk aversion, translating into investments being postponed. The risk associated with the possibility of a no-deal Brexit was also taken into account. Box 3 describes the results of the simulation of this alternative scenario, quantifying its impacts vis-à-vis the central scenario.

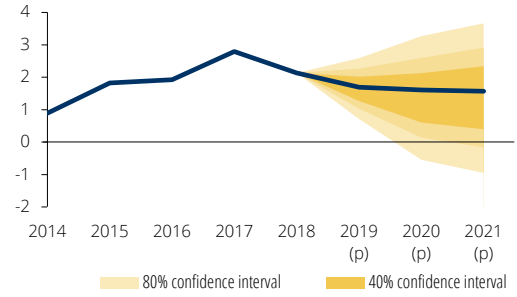
At the euro area level, there are risks associated with an upsurge in turbulence in the financial markets and an increase in political uncertainty in Italy, with the possibility of further contagion to other countries of the monetary union compared with that observed in 2018, in the current phase of a maturing business cycle. In contrast, an upside risk was identified for the activity related to the possibility of more positive developments, in a context of dissipation of uncertainties with a favourable impact on economic sentiment.

Regarding price developments over the projection horizon, a risk was considered regarding the possibility of de-anchoring of inflation expectations reflecting the current low inflation scenario and the reduction of inflation expectations in the recent period. In addition, a domestic risk related to the possibility of a minimum wage increase in 2020 and 2021 was identified.

Most of the risks identified translates into the probability of developments in external demand for Portuguese goods and services being less favourable than those considered in the projection. With regard to the price of oil and long-term interest rates, these risks imply higher levels than those anticipated in the central scenario. Finally, the possibility of a minimum wage increase translates into higher than projected wage developments in 2020-21.

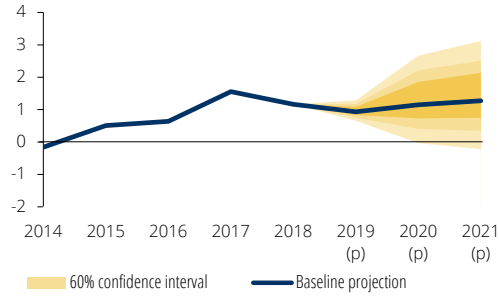
The combination of the risks described above implies downside risks to GDP growth, particularly in 2020, and a slight upside risk to inflation, especially in 2020-21 (Charts I.4.1 and I.4.2).

Chart I.4.1 • Gross domestic product | Annual rate of change, in percentage



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

Chart I.4.2 • Harmonised index of consumer prices | Annual rate of change, in percentage



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

5 Conclusions

The current projections point to the continuation of the Portuguese economy's expansion process in the period 2019-21, although at a slower pace than in recent years. These developments are sustained by the growth in private consumption, strong GFCF, particularly in the business component, and the increase in exports. Similar to 2018, domestic demand's contribution to GDP growth will be higher than that of exports over the projection horizon. This growth pattern results in a negative goods and services account balance from 2019 onwards, after a relatively long period of positive balances. These developments should be monitored closely, as the external indebtedness level remains high and is one of the major latent vulnerabilities of the Portuguese economy.

The growth projected for economic activity over the horizon reflects the maturing of the business cycle and constraints to higher potential growth. The maturation of the expansion process is also extended to the euro area, with growth in the Portuguese economy being slightly higher, on average, than the estimates available for the euro area. Despite these evolution, at the end of the projection horizon, GDP per capita in Portugal will continue to be close to 60% of the average per capita GDP of the euro area, which is slightly below the level observed at the beginning of the monetary union.

In this context, it is crucial to create conditions to increase the Portuguese economy's potential growth, particularly taking into account the risks posed by the high levels of indebtedness and the challenges associated with demographic developments, the low levels of capital per worker and the low qualifications of the labour force, and the weaknesses in market functioning, which led to an inefficient allocation of resources in the past.

The increase in the potential growth of the Portuguese economy will depend on the creation of conditions to promote productivity growth, through a better allocation of resources, well-functioning product and labour markets and investment in human capital and innovation. On the other hand, it will require the adoption of measures to mitigate the macroeconomic impact of reduction and ageing of the population.

Only by increasing the potential growth of the economy will it be possible to converge towards average income levels in Europe and to ensure the maintenance of an upward profile of private consumption and greater capital accumulation without compromising the necessary reduction in the indebtedness of the various sectors of the economy.

Box 1 • The impact of the public sector purchase programme on euro area long-term yields

The goal of the public sector purchase programme (PSPP), announced by the Governing Council of the ECB in January 2015, was to provide an additional degree of monetary accommodation consistent with the macroeconomic situation and expectations prevailing at the time, in order to lead the inflation rate towards the price stability objective.[22] Net acquisitions of sovereign debt securities took place until the end of December 2018. At the time, the Eurosystem held around €2.1 trillion in sovereign debt securities in its balance sheet, corresponding to 18.2% of euro area GDP. In December 2018, the Governing Council decided to end the net purchases under the Eurosystem's asset purchase programme (APP, which includes the PSPP and other private sector purchase programmes), but announced that it would continue reinvesting, in full, the principal payments from maturing securities purchased under the APP.

As these policies were adopted, there was a continued reduction in sovereign debt yields in the euro area. Although it is very hard to establish a causal link between non-standard monetary policies and sovereign debt yields, there is already a significant number of research papers that seek to assess that effect. These contributions seek to quantify the impact of the announcement of the purchase programme (and subsequent recalibrations), which is the result of mechanisms related to signalling and anticipation of effects, and the impact related to the quantitative effect on the markets resulting from actual purchases, which stems mainly from the absorption of part of the duration risk that would have to be borne by private investors.[23]

Estimates of the impact of this set of asset purchase programmes have been obtained through two generic types of methodologies. On the one hand, using macroeconomic models that contain some of the mechanisms that describe the impact of the purchase of sovereign debt on activity and prices. On the other hand, taking a purely empirical perspective through event studies around monetary policy announcements and regression analysis with microdata or aggregated data.[24]

This box revisits the subject using a purely empirical method that seeks to answer the following question: in the absence of any significant disruption of the euro area sovereign debt market, what is the effect of the PSPP on the transmission of monetary policy to long-term yields?

The methodology uses panel data from ten euro area countries, incorporating variables that are likely to influence their respective sovereign debt yields.[25] The variables used serve as a control for different factors affecting this market: the international situation (ten-year yield of US treasury bonds; the VSTOXX risk indicator), the economic environment of each country (GDP growth rate; public debt as a percentage of GDP, including a quadratic term; and an indicator that seeks to identify sovereign debt crisis situations[26]), as well as the invariant features of each country. A similar specification was used in the Special issue "An interpretation of the low sovereign yields in the euro area", published in the Economic Bulletin of December 2015, which aimed

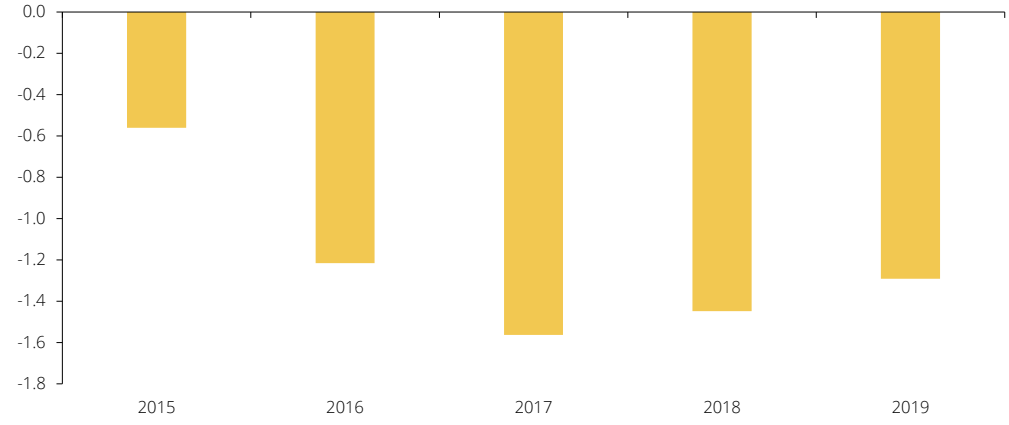
22. See the Special issue "ECB's unconventional monetary policy: what has been done and did it work?", *Economic Bulletin*, June 2015.
23. See Box 2 "Euro area monetary policy: recent decisions and future prospects", *Economic Bulletin*, October 2018 and Hammermann, F., Leonard, K., Nardelli, S. and von Landesberger, J. (2019), "Taking stock of the Eurosystem's asset purchase programme after the end of net asset purchases", ECB, *Economic Bulletin*, March 2019.
24. See the Special issue "ECB's unconventional monetary policy: what has been done and did it work?", *Economic Bulletin*, June 2015.
25. The countries included in the regression were Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal and Spain. The estimation regards the period of time between the beginning of 2000 and April 2019.
26. This indicator is triggered when the largest spread between six-month sovereign bond yields within the sample countries is higher than 200 basis points. See the Special issue "An interpretation of the low sovereign yields in the euro area", *Economic Bulletin*, December 2015.

to estimate the contribution of a set of macroeconomic factors in determining the levels of sovereign yields in different euro area countries. For the purpose of the analysis in this box, two variables related to the public sector purchase programme were included in the specification: the flow of net purchases in each month and the stock of securities held at any given time.

This methodology makes it possible to calculate the direct effect of the PSPP purchases on sovereign debt yields for the set of countries under analysis. The specification requires that this effect be identical in all countries. It should be noted that the methodology does not capture the indirect effects of mechanisms other than those already considered through the model's explanatory variables. Thus, results should be interpreted with caution, bearing also in mind the variability of estimates available in other research.

The results obtained using this methodology can be seen in Chart C1.1, which presents the PSPP's impact on the ten-year yields of government bonds. According to this metric, in the beginning the programme may have contributed to lower long-term yields in the euro area by around 60 basis points. In 2019 the programme's impact on long-term yields in the euro area stood at around 130 basis points, an effect associated with the stock of sovereign bonds held by the Eurosystem.

Chart C1.1 • Impact of the PSPP on euro area 10-year sovereign bond yields | In percentage points



Note: Annual average values. The average for 2015 corresponds to the period between March and December. The average for 2019 corresponds to the first four months of the year.

These results suggest that the PSPP had a significant impact on the decrease of long-term sovereign bond yields in euro area countries. The magnitude of these effects is comparable to those found in research using other types of methodologies.[27]

According to the announcement made by the Governing Council of the ECB, the Eurosystem will maintain the current level of sovereign bond holdings for an extended period of time past the date when the key ECB interest rates eventually start to rise. Thus, there are grounds for expecting that a downward and persistent pressure on sovereign yield curves in the euro area, including in Portugal, will continue over the next few years.

27. See Praet, P. (2018), "*Assessment of quantitative easing and challenges of policy normalization*", March 2018, available at https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180314_2.en.html.

Box 2 • Medium-term budgetary outlook

Last April, the Government updated the Stability Programme for the period 2019-23 (SP2019-23). This box presents the budgetary strategy outlined in the SP2019-23, highlighting the main implications in terms of compliance with the commitments under the Stability and Growth Pact (SGP).

Significant improvement in the budget balance and the public debt ratio between 2019 and 2023

The SP2019-23 expects the budget balance to increase by 1.2 p.p. of GDP, from -0.5% in 2018 to 0.7% of GDP in 2023 (Table C2.1). For 2019, despite the fact that the budgetary outcome for 2018 was better than foreseen in the State Budget for 2019, the SP2019-23 kept the target for the general government balance unchanged at -0.2% of GDP, as set out in that document. Compared to the State Budget for 2019, temporary measures are now expected to have a more adverse impact this year (in particular given the upward revision of the capital injection made by the Resolution Fund into Novo Banco, already executed), while the cyclical contribution remains broadly neutral. In addition, although no new policy measures have been presented, the effects of the measures included in the State Budget for 2019 were slightly revised, resulting in a more adverse budgetary impact.

Box C2.1 • Main fiscal indicators | Per cent of GDP

	2018	2019	2020	2021	2022	2023	Change 2018-23
General government overall balance	-0.5	-0.2	0.3	0.9	0.7	0.7	1.2
Excluding temporary measures	0.2	0.4	0.6	0.6	0.7	0.7	0.5
Interest expenditure	3.5	3.3	3.0	2.9	2.7	2.7	-0.8
Primary balance	3.0	3.1	3.3	3.8	3.4	3.4	0.4
Excluding temporary measures	3.7	3.7	3.6	3.5	3.4	3.4	-0.3
Structural balance (% of potential GDP)	-0.1	0.1	0.3	0.3	0.3	0.3	0.4
Change	1.1	0.2	0.2	0.1	0.0	0.0	–
Structural primary balance (% of potential GDP)	3.3	3.3	3.3	3.2	3.0	3.0	-0.3
Change	0.8	0.0	0.0	-0.1	-0.2	0.0	–
Public debt	121.5	118.6	115.2	109.0	103.7	99.6	-21.9
Memo items:							
Cyclical component of the balance	0.4	0.4	0.3	0.3	0.4	0.4	0.0
Temporary measures	-0.7	-0.6	-0.3	0.3	0.0	0.0	0.7

Sources: INE and Ministry of Finance.

For the remainder of the horizon, the SP2019-23 assumes a gradual improvement in the general government balance, in particular when the impact of temporary measures is excluded.[28] This is explained by the significant reduction in expenditure as a ratio to GDP, in particular due to the expected decreases in interest payments and capital expenditure other than public investment (Table C2.2). In the latter case, the reduction is largely driven by a significant decrease in the support to the financial sector over the horizon. As regards compensation of employees and transfers to households, growth lower than nominal GDP is expected, despite the unfreezing of promotions and progressions in general government (currently affecting the whole projection horizon) and increases in expenditure on social benefits (in 2021 and 2022). Public investment

28. The SP2019-23 includes temporary measures with significant negative impacts on the balance in the years from 2019 to 2021. These impacts mainly relate to the effects of triggering the contingent capital mechanism agreed under the sale of Novo Banco. In 2021, the corresponding effect is more than offset by the extraordinary income obtained from to the refund of amounts paid when the first tranches of the loans from the EFSF were received. The SP2019-23 does not project any temporary measures for 2022 and 2023.

is the only expenditure component for which an increase as a ratio to GDP between 2019 and 2023 is expected. Nevertheless, it remains below the level observed in the period prior to the crisis at the end of the horizon. In turn, the SP2019-23 foresees a decrease in the revenue-to-GDP ratio, largely linked to the reduction in revenue from taxes and social contributions. Underlying these developments is the net impact of two measures that were already included in the previous update of the programme. In particular, a measure to reduce income taxation of households is planned, with an impact from 2021 onwards which is slightly lower than the cumulative impact of tax credit cuts granted under taxation on production and imports.

Box C2.2 • General government accounts in National Accounts | Per cent of GDP

	2018	2019	2020	2021	2022	2023	Change 2018-23
Total revenue	**43.5**	**43.8**	**43.7**	**43.9**	**43.2**	**43.0**	**-0.5**
Current revenue	43.1	43.2	43.1	42.9	42.7	42.5	-0.6
Taxes on income and wealth	10.4	10.2	10.1	10.0	10.0	9.9	-0.5
Taxes on production and imports	15.3	15.3	15.2	15.2	15.1	15.0	-0.3
Social contributions	11.8	11.9	12.0	12.0	12.0	12.0	0.2
Other current revenue	2.1	2.3	2.3	2.2	2.2	2.2	0.1
Sales	3.5	3.4	3.4	3.4	3.4	3.4	-0.1
Capital revenue	0.4	0.6	0.6	1.0	0.5	0.5	0.1
Total expenditure	**44.0**	**43.9**	**43.4**	**43.0**	**42.6**	**42.4**	**-1.6**
Current expenditure	40.8	40.7	40.3	39.8	39.5	39.2	-1.6
Current transfers	21.1	21.2	21.2	21.1	21.0	20.9	-0.2
Social payments	18.2	18.3	18.3	18.2	18.1	18.0	-0.2
Subsidies	0.4	0.4	0.4	0.4	0.4	0.4	0.0
Other current expenditure	2.5	2.5	2.5	2.5	2.5	2.5	0.0
Interest	3.5	3.3	3.0	2.9	2.7	2.7	-0.8
Compensation of employees	10.8	10.8	10.7	10.6	10.5	10.4	-0.4
Intermediate consumption	5.4	5.4	5.4	5.4	5.4	5.4	0.0
Capital expenditure	3.2	3.2	3.1	3.2	3.1	3.1	-0.1
Investment	2.0	2.1	2.3	2.5	2.6	2.6	0.6
Other capital expenditure	1.2	1.1	0.7	0.6	0.5	0.5	-0.7
Overall balance	**-0.5**	**-0.2**	**0.3**	**0.9**	**0.7**	**0.7**	**1.2**

Sources: INE and Ministry of Finance.

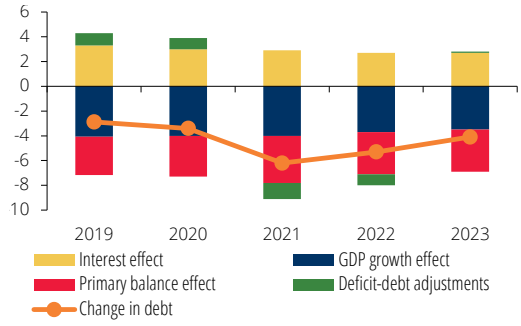
The SP2019-23 expects that the downward path of the public debt ratio will continue, entailing a decrease from 121.5% of GDP at the end of 2018 to 99.6% in 2023 (Table C2.1). The main contribution to this reduction comes from the maintenance of significant primary surpluses (Chart C2.1). In addition, the GDP growth rate is expected to remain above the implicit interest rate, also contributing to the reduction of the debt ratio.

Mild improvement in the total structural balance, despite a slightly expansionary fiscal policy stance

The Portuguese Public Finance Council considered the macroeconomic outlook for 2019 and 2020 included in the SP2019-23 as likely, but classified the scenario for the rest of the horizon as optimistic, emphasising the downside risks. Nevertheless, the contribution of the cycle to budgetary developments in this period should be neutral (Chart C2.2). As mentioned above, the improvement in the budget balance over the SP2019-23 period rests largely on the dissipation of the unfavourable impact of temporary measures and on the continuing downward path of interest expenditure as a ratio to GDP. Thus, the structural balance, i.e. the budget balance corrected for the contributions from the business

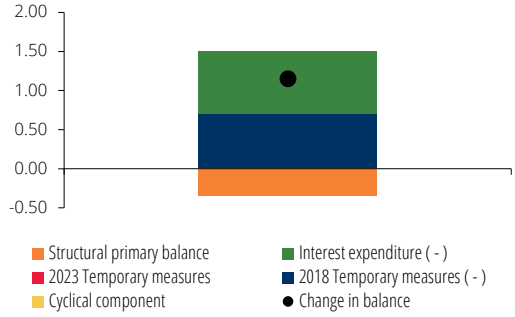
cycle and temporary measures, improves only moderately between 2019 and 2023 (0.4 p.p. of potential GDP, in cumulative terms). The structural primary balance, which excludes in addition the effect of developments in interest expenditure, is expected to deteriorate somewhat in the same period, resulting in a slightly expansionary fiscal policy stance.

Chart C2.1 • Contributions to the annual change in public debt: 2019-23 | In percentage points of GDP



Source: Ministry of Finance.

Chart C2.2 • Contributions to the change in the budget balance: 2019-23 | In percentage points of GDP



Sources: Ministry of Finance (Banco de Portugal calculations).

With regard to the requirements of the Stability and Growth Pact, the European Commission identifies risks of significant deviation in the projection horizon

In the context the EU budgetary surveillance framework, Portugal is currently subject to the SGP's preventive arm. In this context, it was stipulated that the structural balance should converge to the corresponding Medium-Term Objective (MTO) at a rate of at least 0.6 p.p. of potential GDP per year, in 2018 and 2019. In addition, growth in the relevant expenditure aggregate for evaluating the expenditure rule should not exceed 0.2% in 2018 and 0.7% in 2019 (in nominal terms).

According to the European Commission's spring forecast, Portugal complied with the requirement for the change in the structural balance in 2018, with estimates pointing to an increase of 0.9 p.p. of GDP compared to the previous year. With regard to the expenditure rule a significant deviation is expected. However, a more comprehensive analysis based on existing information on Portuguese public finances suggests the absence of a 'significant deviation' in 2018. For 2019, the European Commission expects the fiscal effort to remain below the requirements of the two criteria, pointing to risks of significant deviation, both as regards the change in the structural balance and the expenditure rule.[29,30]

29. In the case of the change in the structural balance requirement, the joint assessment of the 2019 forecast and the 2018 budgetary outcome points to 'some deviation' (i.e. an average deviation of less than 0.25% of GDP each year).
30. Currently, Portugal is in the second year of a three-year transition period during which it is expected to record a minimum linear structural adjustment consistent with the fulfilment of the debt rule from 2020 onwards. The change in the structural balance in 2018 should have allowed compliance with the required minimum linear adjustment during the transition period. However, the European Commission expects 'some deviation', albeit not significant, in 2019 and, in 2020, the Commission expects that the debt reduction criterion will not be met by a small margin.

Recent developments in the debt ratio resulted in a downward revision of the Medium--Term Objective for the structural balance as a percentage of GDP from 2020 onwards

Until 2019, the European Commission's assessment is made with reference to an MTO corresponding to a structural surplus of 0.25% of GDP, set for the period 2017-19. A new MTO, resulting from the recent revision of minimum MTOs, will be applied to Portugal from 2020 to 2022. These MTOs are revised regularly – every three years – following the update of the projections underlying the *Ageing Report*. In the case of Portugal, the new minimum MTO applicable from 2020 to 2022 corresponds to a structural balance of 0.0% of GDP. This figure is the result of the most demanding of the following three criteria:

- The 'minimum benchmark' corresponding to the minimum value which ensures that the budget balance remains above -3% of GDP over the economic cycle. The calculation method for this indicator has recently been modified by the European Commission with the aim of making it more stable, less sensitive to the occurrence of extreme values, and more correlated with the idiosyncratic cyclical fluctuations of each Member State.[31] In general, including in the case of Portugal, the new calculation formula leads to 'minimum benchmarks' that are more demanding than those underlying the minimum MTOs set for 2017-19 on the basis of the previous methodology.[32]
- The minimum value of a sustainability indicator resulting from three factors: the value of the budget balance consistent with stabilising the debt ratio at 60% of GDP; the additional effort which, in the case of countries with debt ratios above 60% of GDP, ensures convergence to this value; and the adjustment needed to offset one-third of the (present value of the) projected increase in ageing-related expenditure.
- The minimum value of -1% of GDP in the case of Member States within the euro area or participating in the Exchange Rate Mechanism II.

In the case of Portugal, given the high level of public debt, the most demanding criterion which has determined the minimum MTO is the sustainability indicator. In the most recent update, this indicator points to a structural balance of 0.13% of GDP, which, applying the rounding rule set in the SGP, results in a minimum MTO of 0.0% of GDP (Table C2.3). The downward revision of the minimum MTO results from the recent reduction in the public debt ratio, although the effort needed to offset the increase in the cost of ageing has increased.

In the SP2019-23, the Government set the MTO at 0.0%, adopting the minimum MTO value calculated by the European Commission.[33] The materialisation of the outlook included in that document implies that the structural balance reaches the new MTO in 2019, assuming its relative stabilisation from this

31. For each country i, the safety margin for -3% of GDP underlying the 'minimum benchmark' is obtained as the average of the standard deviations of the cyclical components of the budget balance of each country and the EU (calculated for the period from 1985 to 2017), multiplied by the average long-term value of the EU minimum benchmark (1.2% of GDP). In order to avoid 'minimum benchmarks' that are too demanding or lenient, a range between -1.5 and -0.7% of GDP was set. Therefore: $-0{,}7 \geq MB_i \geq -1{,}5$, with $MB_i = -3 + 1{,}2 \cdot \frac{standard\ dev.(\varepsilon_i * OG_i) + standard\ dev.(\varepsilon_{UE} * OG_{UE})}{2}$, where the cyclical components of the budget balances result from the product between semi-elasticities ε and output gaps.
32. Although the minimum MTOs are only revised every three years, the minimum benchmarks may be revised annually. In the case of Portugal, the minimum benchmark now obtained with the new methodology (-1.3%) is more demanding than that underlying the previous minimum MTO, set in 2016 for the period 2017-20 (-1.6%). However, it results in a less demanding criterion when compared with the minimum benchmark calculated for 2019 (-1.0%).
33. The minimum MTO calculated by the European Commission corresponds to a lower limit for the national MTOs, set by the Governments of the Member States and included in the respective Stability or Convergence Programmes.

year onwards.[34] On the contrary, the European Commission's spring forecast projects the structural balance to be -0.5% of GDP in 2020, thus remaining below the new MTO. In this scenario, the Specific Recommendations to Portugal advise that the MTO should be effectively achieved in 2020, which implies an additional structural adjustment of 0.5 p.p. of GDP[35].

Box C2.3 • Update of the Medium Term Objective for the structural balance in Portugal
| Per cent of GDP

		2017-2019	2020-2022
Minimum benchmark alowing for a safety margin ensuring a balance above -3% of GDP	(1)	-1.64	-1.30
Fiscal sustainability indicator	(2) = (3)+(4)+1/3*(5)	0.31	0.13
Budget balance that would stabilise government debt at 60% of GDP	(3)	-1.80	-1.71
Additional fiscal effort required to ensure convergence of the debt ratio to 60%	(4)	1.88	1.56
Additional fiscal adjustment to cover the projected increase in age-related expenditures	(5)	0.68	0.86
Lower bound of -1% of GDP for euro area Member-states and countries participating in ERM II	(6)	-1.00	-1.00
Maximum value out of (1), (2) and (6)		0.31	0.13
Minimum MTO		0.25	0.00
National MTO		0.25	0.00

Sources: European Commission (Banco de Portugal calculations). | Note: The minimum MTO corresponds to the maximum value among the 3 criteria, rounded to the less stringent 1/4 of a percentage point of the structural balance.

Overall, the strategy presented in the SP2019-23 implies an improvement in the budget balance and the continuation of a downward path for the debt ratio. The fiscal policy stance is slightly expansionary and the magnitude of the reduction in the debt ratio is based on the maintenance of significant primary surpluses and the materialisation of a favourable macroeconomic scenario. In addition, the fall in primary expenditure as a GDP ratio is not entirely explained by specified measures. Thus, the implementation of the strategy contained in the SP2019-23 poses non-negligible risks, as stated by the European Commission in its assessment of this document. These risks are particularly relevant in a context where the general government indebtedness level remains one of the highest in the euro area.

34. The structural balance underlying the SP2019-23 was recalculated by the European Commission and, in this case, the new MTO would be reached in 2020.
35. The structural adjustment of 0.5 p.p. of GDP in 2020 is consistent with a maximum growth of 1.5% for the relevant expenditure aggregate under the expenditure rule. The Commission identifies risks of significant deviation in 2020, both for compliance with the expenditure rule and for the criterion of change in the structural balance.

Box 3 • The impact on the Portuguese economy of a no-deal Brexit

The outcome of the United Kingdom's withdrawal process from the European Union (EU) remains uncertain. The uncertainty surrounds the timing of Brexit – the date has been postponed[36] – and the nature of the trade relations between the United Kingdom and the EU in the short to medium term.[37] The process may even be reversed.[38] The possibility of not reaching an agreement for withdrawal before the newly established deadline (31 October 2019) remains an important source of uncertainty and a downward risk for the economic projections presented in this bulletin.

This box therefore presents estimates for the possible effects on the Portuguese economy of a no-deal Brexit scenario. These effects are assessed in comparison with a soft Brexit scenario, which is the assumption underlying the projections presented in this bulletin. Most international institutions have also chosen to consider this assumption in their projection exercises.[39]

Scenario underlying the projections: soft Brexit

The baseline scenario of a soft Brexit assumes that the United Kingdom and the EU maintain a high level of access to each other's goods and services markets, after a gradual transition period. This follows a period of heightened uncertainty, reflected in high risk premia, the postponement of investment and consumption decisions, and a negative impact on firm productivity in the United Kingdom. This scenario may emerge as the result of several political developments, including a compromise among parties, multiple votes in Parliament leading to the elimination of other options, or a new referendum.

In this scenario, the United Kingdom withdraws from the EU on 31 October, and a transition period will start, extending up to the end of 2020,[40] during which the details of the future relationship will be negotiated, in particular the trade agreement.[41] Over the course of the transition period, all the EU rights and obligations continue to apply to the United Kingdom as if it were a Member State. This means that the United Kingdom continues to participate in the EU's Customs Union and in the Single Market as well as in all its policies. The transition period allows the EU and the United Kingdom to negotiate a future relationship, giving citizens and firms time to prepare. In this central scenario, it is assumed that the future relationship between the United Kingdom and the EU is based on a free trade agreement, with no tariffs on transactions in goods and cooperation at customs and regulatory level, but with a number of restrictions on trade in services.[42] There is no hard border between Northern Ireland and the Republic of Ireland. The free movement of persons is not considered.

36. Upon request of the British Government, the European Council decided at its meeting on 10 April 2019 to postpone the deadline for the United Kingdom's withdrawal from the EU until 1 November 2019 at the latest. If the agreement is approved by the United Kingdom and the EU before this date, withdrawal will take place on the first day of the following month. The European Council will assess the developments at its meeting in June 2019.
37. The negotiations on the future trade relationship will start after the United Kingdom's withdrawal from the EU.
38. At the end of 2018 the EU Court of Justice considered that the United Kingdom's unilateral revocation of the notification of the intention to withdraw from the EU would be possible.
39. See IMF (April 2019 *World Economic Outlook*) and OECD (May 2019 *Economic Outlook*). The European Commission adopts the technical assumption that trade relations between the United Kingdom and the EU remain unchanged over the projection horizon (*Spring 2019 European Economic Forecast*).
40. The withdrawal agreement envisages the possibility of extending the transition period for one or two additional years.
41. Conditions will also be negotiated on many other aspects of the future relationship included in the political declaration (e.g. defence, security, data protection, fisheries, etc.).
42. The free trade agreement considered is similar to that established between the EU and Canada in 2016 (Comprehensive Economic and Trade Agreement – CETA).

In this context, some of Brexit's macroeconomic effects have already been taken into account in the scenario underlying the projections in this bulletin. The process of withdrawal has already produced discernible effects on the UK economy as a result of the exchange rate depreciation that followed the referendum and, more recently, heightened uncertainty and confidence loss among economic agents.[43]

Alternative scenario: no-deal Brexit

In the alternative scenario of a no-deal Brexit, an withdrawal agreement is not ratified by 31 October, and the EU-UK trade relations are from 1 November 2019 onwards governed by the rules of the World Trade Organization, with the setting of tariff and non-tariff barriers. There is no transition period in this scenario, but the withdrawal process is assumed to be orderly, with short-term contingency measures being adopted to avoid the collapse of trade relations and the movement of people and to safeguard financial stability. The United Kingdom is assumed to continue to have access to the existing trade agreements between the EU and non-EU countries or these are quickly replaced by equivalent arrangements.

The simulation of this scenario for the Portuguese economy involved two-steps. In the first step the impact of a no-deal Brexit on the United Kingdom and the rest of the world was considered – compared to a soft Brexit scenario – based on the simulations conducted by the National Institute for Economic and Social Research (NIESR) using the NiGEM model.[44] The international scenario simulated by the NIESR considers the following shocks: reductions in the UK-EU trade flows associated with an increase in tariff and non-tariff barriers on these transactions,[45] a decline in direct investment flows into the United Kingdom and a reduction in migration flows from the EU to the United Kingdom.[46] In the second step, the results of the impact of this exercise on the relevant variables of the Portuguese economy's external environment (imports from the main trading partners, exchange rates, interest rates, etc.) have been used jointly with the elasticities underlying the main medium-term projection model of Banco de Portugal, to obtain the impact on the Portuguese economy.

The simulation shows that a no-deal Brexit has significant effects on the UK economy. The increase in trade barriers has a negative impact on trade and investment flows. The United Kingdom's GDP will decline by 3.5% vis-à-vis the baseline scenario of soft Brexit in 2021. The level of imports in 2021 will stand around 18% below the baseline scenario. The pound sterling will record a significant depreciation – with the nominal effective exchange rate standing 15% below the baseline scenario in 2021 – which, combined with the effect of the rise in import tariffs, will lead to an increase in inflation relative to the baseline scenario levels (around 1.5 p.p., on annual average terms, in the period). The reduction in demand in the United Kingdom and the gradual increase in trade costs also has

43. Box 1 - "Developments in the United Kingdom's departure from the European Union (Brexit) and its impact on the British economy so far", Economic Bulletin, May 2019.
44. See *National Institute Economic Review* No 238, May 2019, "Prospects for the UK economy - Box A. Brexit assumptions and alternative scenarios". NiGEM is a multi-country macroeconomic model suited for simulating the United Kingdom's withdrawal from the EU, given the detailed modelling of the trade and financial linkages across the economies, in parallel with the various options in the simulations' design (for a detailed description of the model, please go to https://nimodel.niesr.ac.uk/).
45. This reduction was calibrated as a negative shock on the United Kingdom's export market shares in EU countries.
46. The calibration of these shocks in the simulation horizon takes into account the long-term impacts of a no-deal Brexit. Based on a summary of the empirical evidence, the long-term impacts underlying the NIESR's scenario compared to a scenario of remaining in the EU are the following: (i) EU-UK trade is 56% lower than it would be with continued membership of the EU single market and customs union as a result of the setting of tariff and non-tariff barriers; (ii) the EU's net migration flow into the United Kingdom is reduced by 100,000 persons/year; (iii) foreign direct investment falls by 24%; (iv) the combination of lower investment, lower levels of international competition and a potential lack of qualified foreign labour reduces labour productivity by 1.6%. For further details, see Ebell, M. and Warren, J. (2016), "The long term economic impact of leaving the EU", *National Institute Economic Review* No 236, May 2016, and Hantzsche, A., Kara, A. and Young, G. (2018), "The economic effects of the government's proposed Brexit deal", *NIESR report*, November 2018.

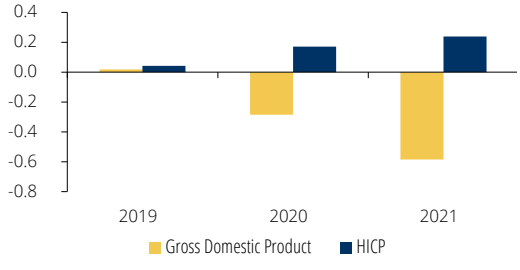
repercussions on economic activity in the euro area, but the impact is more subdued. The GDP level in the euro area in 2021 will stand 0.4% below the levels considered in the soft Brexit scenario. The impact on consumer prices in the euro area is slightly positive (0.3% in cumulative terms in 2021).[47]

The consequences of a no-deal Brexit for Portugal are primarily, but not exclusively, associated with changes in goods and services trade conditions, given that the United Kingdom is Portugal´s most important non-euro area partner (accounting for roughly 7% and 15% of Portuguese exports of goods and services respectively).[48] The impact on external demand reflects the direct effect via the decrease in the United Kingdom's imports and the indirect effect via the impact on economic activity in the euro area, and consequently via the reduction in euro area imports. With regard to the effective exchange rate of the euro, there is a minor impact, since the depreciation of pound sterling vis-à-vis the euro is largely offset by the strong appreciation of the US dollar and other safe-haven currencies vis-à-vis the euro.

In terms of GDP components, the most important impact results from a decrease in exports, due to lower external demand. The decrease in exports translates into a decline in the demand for inputs, leading to a reduction in investment and a slight decrease in employment and consequently private consumption. Furthermore, imports undergo a downward adjustment in the wake of lower global demand. The demand decline is not sufficient to offset the impact of the rise in custom tariffs on prices, and thus inflation increases slightly over the projection horizon. Against this background, the GDP level in Portugal in 2021 will stand 0.6% below the levels considered in the baseline scenario of soft Brexit underlying the projections, while the HICP level will rise by 0.2% (Chart C3.1). The impact on the goods and services account balance and consequently on the current and capital account balance is negative, since the reduction in exports is more significant than in imports. As a percentage of GDP, these balances will stand around 0.4 p.p. below the levels considered in the baseline scenario in 2021.

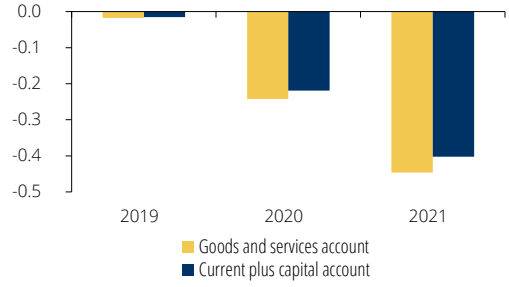
Chart C3.1 • Impact of a no-deal Brexit scenario on the Portuguese economy

Gross Domestic Product, in real terms, and HICP | Deviation from levels projected in baseline scenario (*Soft Brexit*), in percentage



Source: Banco de Portugal.

Goods and services account and Current plus capital account | Cumulative deviation from balances projected in baseline scenario (*Soft Brexit*), in pp of GDP



Source: Banco de Portugal.

47. The results for the United Kingdom and the EU/euro area are within the range of estimates considered in the empirical literature, when taking into account similar scenarios (no-deal vs. soft Brexit) and the uncertainty inherent to their design, as well as the horizon analysed. Overall, the results of these studies point to a negative impact on the UK economy and, to a smaller extent, on the EU/euro area economy. The negative effects are more severe the less close the future economic relationship is and the more abrupt the transition is, with a sudden withdrawal without an agreement being the most harmful of the scenarios considered. In most cases, the impacts presented in these studies refer to a scenario where the UK remains in the EU and a long horizon. For a summary of these results, see Bisciari, P. (2019), "A survey of the long-term impact of Brexit on the UK and the EU27 economies", *Working Paper* No 366, National Bank of Belgium.

48. In 2018 tourism accounted for 57% of total Portuguese exports of services to the United Kingdom.

Conclusion and caveats of the exercise

Overall, results suggest that a no-deal Brexit will result in costs, albeit limited, for the Portuguese economy compared to a soft Brexit, as assumed in the projections presented in this bulletin.

However, the results of this exercise should be regarded with caution for a number of reasons. Firstly, the economic impact is difficult to quantify, since there is no precedent of the withdrawal of an economy such as the United Kingdom from a strongly integrated area such as the EU. Secondly, the uncertainty surrounding the characteristics of a no-deal Brexit needs to be taken into account. The scenario considered is relatively benign, assuming there are no disturbances at the borders and that the impact on uncertainty and financial markets is contained. A scenario of disorderly Brexit, with significant disturbances at the borders that increase trade costs considerably for firms and households in the United Kingdom and the EU and with more significant impacts on financial conditions would have more serious effects on the UK economy and the EU economies.[49]

In addition, even in the orderly withdrawal scenario considered, the negative effects may be compounded by confidence effects on investment and consumption decisions, not fully captured by the instruments used. The effects stemming from disruptions in financial markets or from the loss of access to global production chains are likely also underestimated.

Conversely, although simulations consider the likely response of economic policies, the authorities' reaction may be more vigorous, which would mitigate the negative effects on economic activity.[50] The contingency measures that have been announced by the EU and the United Kingdom may also contribute to lessen the impact of a no-deal Brexit.[51]

49. To illustrate the sensitivity of the simulation results to different assumptions on the characteristics of a no-deal Brexit, note that in a scenario considered by the Bank of England in the context of the assessment of the financial sector's resilience – disorderly no-deal Brexit (including disturbances at the borders and in financial markets and loss of existing trade agreements between the EU and third countries) – the fall in the United Kingdom's GDP will amount to around 10% in 2023 (Bank of England (2018), "EU withdrawal scenarios and monetary and financial stability – a response to the House of Commons Treasury Committee").
50. In the simulation, monetary policy responds mechanically to inflation and the output gap based on NiGEM's policy rule. Budgetary automatic stabilisers are activated, but are not accompanied by additional discretionary spending.
51. Box 1 "Brexit: Risk and mitigating factors from the viewpoint of financial stability", *Financial Stability Report*, June 2019, presents an analysis of risks to financial stability and a summary of Brexit-related EU decisions in the field of financial services.

II Special issue

Demographic changes and labour supply in Portugal

Box 1 Effect of the increasing retirement age on labour force developments in Portugal

Demographic changes and labour supply in Portugal

Introduction

As in other developed countries, the labour market in Portugal faces the triple challenge of demographic changes, technological progress and globalisation. As to demographics, the reduction in the working-age population and the increase in the average age of the population stress the importance of the increase in participation rate and in employment, particularly among the older groups. A greater share of individuals attached to the labour market is an important contribution to the growth of output and GDP per capita and to the reduction of the old-age dependency ratio. In turn, technological progress leads companies to look for workers with new skills and knowledge. This challenge points to the importance of a labour force with qualification levels appropriate to the needs of firms and to the relevance of workers investing in their vocational education and training throughout their working lives. Finally, global market integration makes it easier for Portuguese firms to hire foreign workers, by fostering immigration flows, but also poses the challenge of creating internal conditions that reduce the incentive for young working-age people to emigrate.

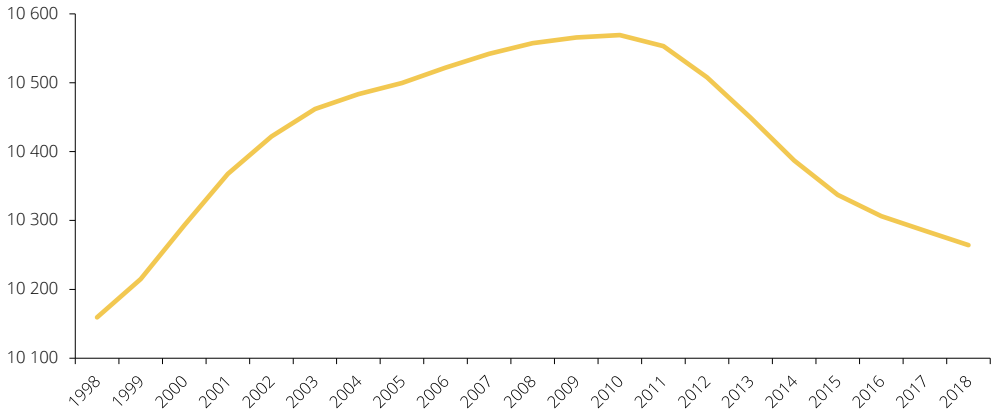
The first of these challenges will be analysed in this Special issue: the impact of the major demographic changes observed over the last two decades on the Portuguese labour market, with emphasis on the reduction and ageing of the resident population. These demographic trends have effects on other equally important economic dimensions, such as productivity, the sustainability of social security or the importance of policies to promote birth and immigration. However, these dimensions will not be analysed in this Special issue, which focuses on the impact of demographic change on the growth of labour supply in Portugal.

A continuous reduction of the resident population in Portugal has been observed since 2010 (Chart 1).[1] Between 2010 and 2018, the Portuguese population decreased by 3%, to levels close to those observed in 2000. At the same time, the secular trend for population and labour force ageing has remained the same. Over the last 20 years, the median age of the resident population has increased from 37 to 45 years old, while the median age of the labour force has increased from 38 to 44 years old (Chart 2).[2]

From 2008 onwards, there was a decrease in the working-age population (from 15 to 64 years old), i.e. even before total population started to decline (Chart 3). Between 2008 and 2018, the working-age population recorded an unprecedented reduction of 5.9%. In turn, the labour force in 2018 was still 4.4% below the figure recorded before the economic and financial crisis. The increase in the labour force over the last few years partly reflected the usual pro-cyclical behaviour of the participation rate, which is also visible in the sharp falls observed in the last recession.

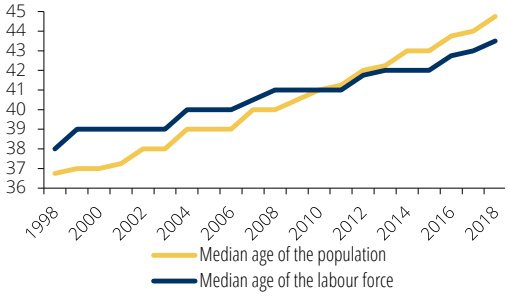
1. Unless otherwise specified, the analysis in this Special Issue is based on information from the *Labour Force Survey* carried out by Statistics Portugal.
2. Unless otherwise specified, labour force means the employed and unemployed population aged 15 or above.

Chart 1 • Total population | Thousands of persons



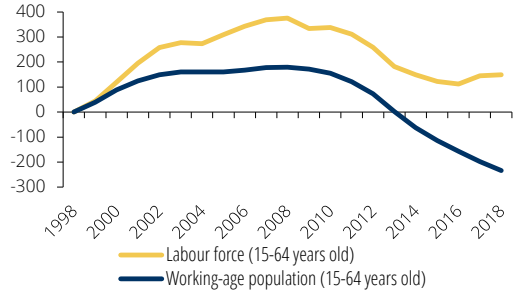
Source: Statistics Portugal – *Labour Force Survey* (Banco de Portugal calculations).

Chart 2 • Median age of the total population and the labour force (15 years old and over) | Years of age



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

Chart 3 • Cumulative change in the labour force (15-64 years old) and in the working-age population (15-64 years old) | Thousands of persons



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

In addition to the impact of the reduction in population on the labour force, their ageing has led to an increasing weight of the older cohorts, which typically have lower participation rates, reflecting a compositional effect that leads to a downward pressure on the participation rate. On the other hand, the extension of the period of schooling for the younger population and the consequent late entry into the labour market have also contributed to the ageing of the labour force. Conversely, there are structural dynamics contributing to an increase in the labour force, with an emphasis on the long-term upward trend of the female participation rate, the increase in the participation rate of older groups and the schooling shift to higher education levels, characterised by higher participation rates.

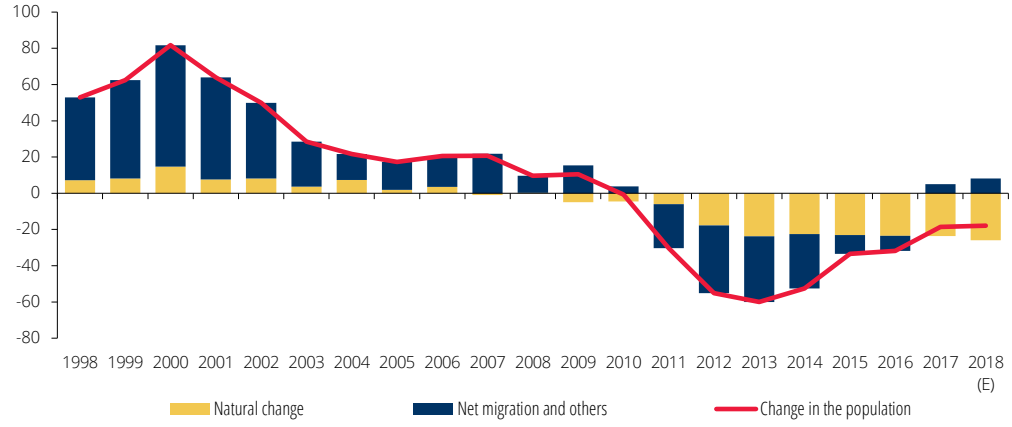
In this Special issue, evidence is provided on these demographic developments and the possible impacts on the growth of labour supply in Portugal are discussed. Some of them are common to most European Union countries, but they are particularly prominent in Portugal. This Special issue is organised as follows. The first part presents the main demographic trends observed in Portugal in the last 20 years, while the second part focuses on the evolution and characterisation

of the labour force. The third part describes how these demographic trends, by the way they affect the available labour supply, can contribute to exacerbate the fall in the level of labour underutilisation in the economy and increase hiring difficulties by firms, in a context of tightening labour market conditions. The fourth part seeks to assess how demographic and labour supply trends are projected for the future. Finally, some final considerations are presented.

Main demographic trends

Portugal is in a process of demographic transition characterised by the reduction and ageing of the population. The natural change has been gradually declining since the 1980s through the reduction of fertility. Increases in longevity have offset this effect for around three decades, but in the last ten years the natural change has been systematically negative (Chart 4). Migratory flows have been able to support population growth in the first decade of this millennium. However, given its sensitivity to the economic cycle, net migration became negative in 2011 and only returned positive in the last two years.

Chart 4 • Change in the resident population in Portugal | Thousands of persons

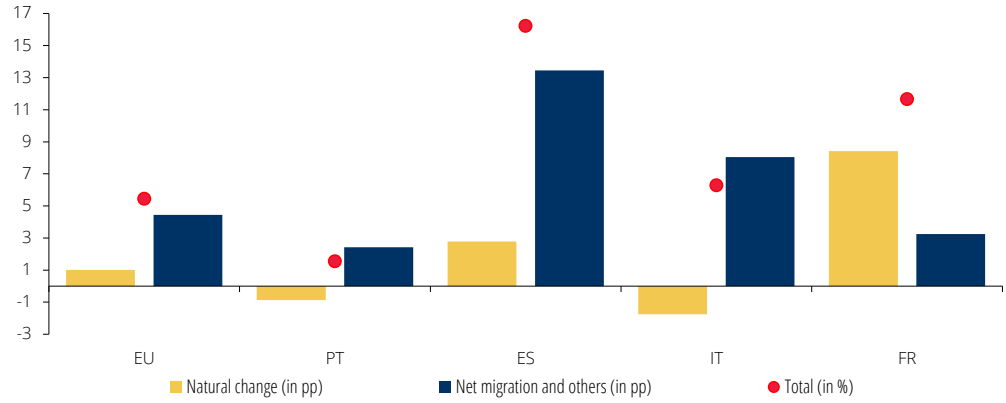


Source: Statistics Portugal – *Demographic Statistics* (Banco de Portugal calculations). | Note: The "others" refer to reclassifications or statistical discrepancies between the change in the population at the beginning of the year and the natural change and the net migration of each year.

In the past two decades, population growth in Portugal was very moderate (around 1.5%) and one of the lowest in the European Union (Chart 5). In the EU as a whole the population grew by 5.5% on average and the migratory flows contributed to about four-fifths of that rate. However, there is a considerable heterogeneity among the member states both in terms of population growth and contributions: for example, the natural change was negative in Portugal and Italy and very positive in France, while countries such as Spain or Italy benefited from highly positive net migration.

In Portugal, net migration made a contribution of around 2.5 p.p. to the growth of 1.5% of the population between 1998 and 2018, despite negative figures registered between 2011 and 2016. The recent recovery of net migration, in line with the economic cycle, reflected a reduction in the number of permanent emigrants and an increase in the number of permanent immigrants (Chart 6).

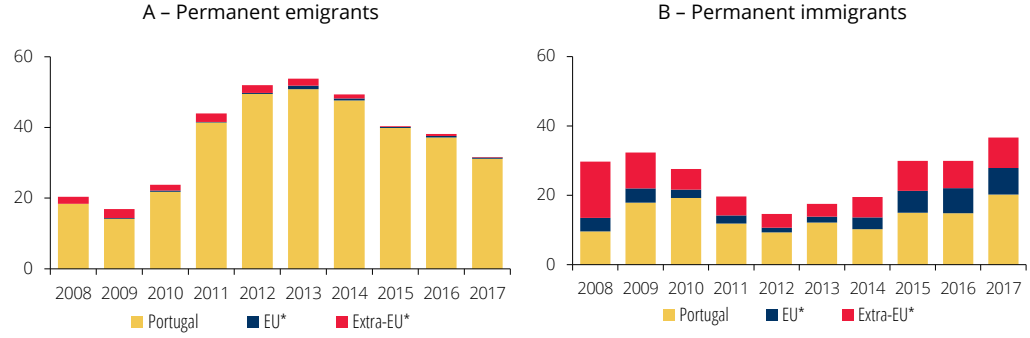
Chart 5 • Change in the resident population 1998-2018 | Percentage and percentage points



Source: Eurostat (Banco de Portugal calculations). | Notes: EU corresponds to the European Union with 28 countries. The "others" refer to reclassifications or statistical discrepancies between the change in the population at the beginning of the year and the natural change and net migration of each year.

By nationality, Portuguese individuals were predominant in the last decade, most noticeably during the last recession. However, the recovery of immigration flows since 2014 has shown similar contributions on the part of the Portuguese and foreigners. Among the latter, individuals with extra-EU nationality exceeded those of EU countries, as observed in previous years.

Chart 6 • Permanent emigrants and immigrants by nationality | Thousands of persons



Source: Statistics Portugal. | Notes: EU* corresponds to the European Union (changing composition). Immigrants with Portuguese nationality correspond essentially to return situations.

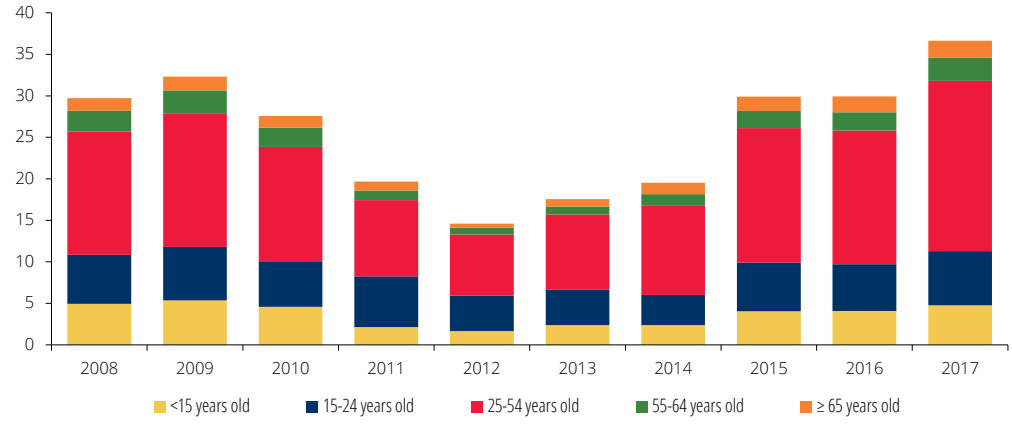
Regarding age, the 15 to 54 age group dominates immigration flows (Chart 7). However, in the last three years for which data are available, the importance of younger immigrants and also individuals over the age of 55 is growing.

The increase in younger immigrants was relatively widespread by nationality, whereas among the older groups such increase was more pronounced among the individuals coming from the EU. The income tax regime for non-regular residents, established in 2009, with the aim of attracting qualified professionals as well as retirees receiving pensions from abroad, also contributed to this result.[3] Still, the recovery of migratory flows has been relatively limited. It should also be

3. Investment Tax Code – Decree-Law No 249/2009 of 23 September 2009.

noted that the demand for individuals with specific qualifications, for example in areas linked to digitisation, has increased substantially overall, so that the Portuguese economy has the challenge of competing to attract these professionals and retain the nationals.

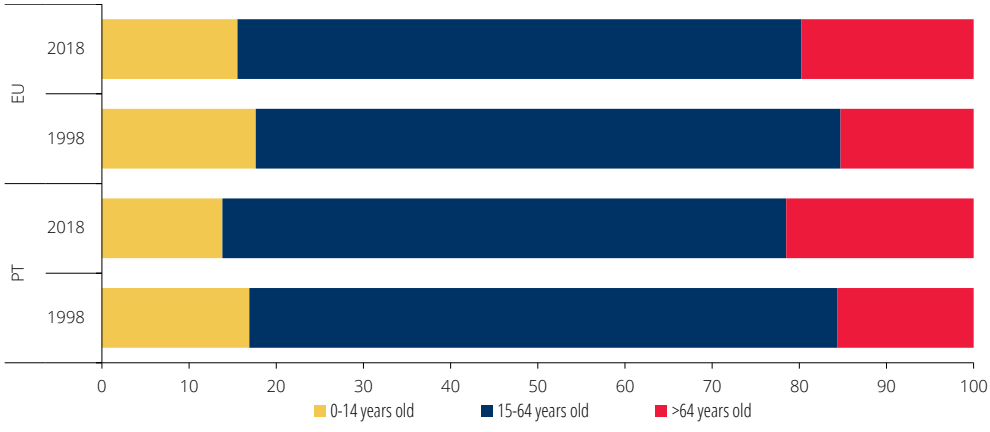
Chart 7 • Permanent immigrants by age group | Thousands of persons



Source: Statistics Portugal.

In the last 20 years, in addition to growing below the EU average, the Portuguese population has also become relatively older (Chart 8).

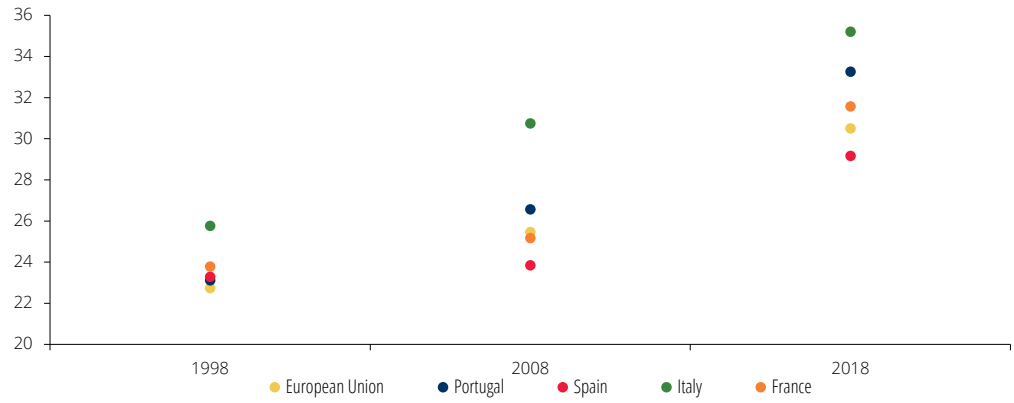
Chart 8 • Structure of the population by age group | Percentage



Source: Eurostat. | Note: EU corresponds to the European Union with 28 countries.

The youngest cohort, which already had a lower weight in Portugal at the beginning of 1998, decreased its relative importance more sharply than that observed on average in the EU, while the oldest cohort showed a greater relative increase. This is naturally reflected into an increase in the dependency ratio of older population on the working-age population (aged 15 to 64). In 1998, the dependency ratios in Portugal and in the other countries under analysis were relatively close to the EU average, but increased over the last two decades, and in a more intense and heterogeneous way in the last decade (Chart 9). In Portugal, the ratio increased by around 10 p.p. to around 33% at the beginning of 2018. This is one of the highest values among EU countries.

Chart 9 • Old-age dependency ratio (65 years old and over) | Percentage



Source: Eurostat. | Note: EU corresponds to the European Union with 28 countries.

Labour force and participation rate: trends and recent developments

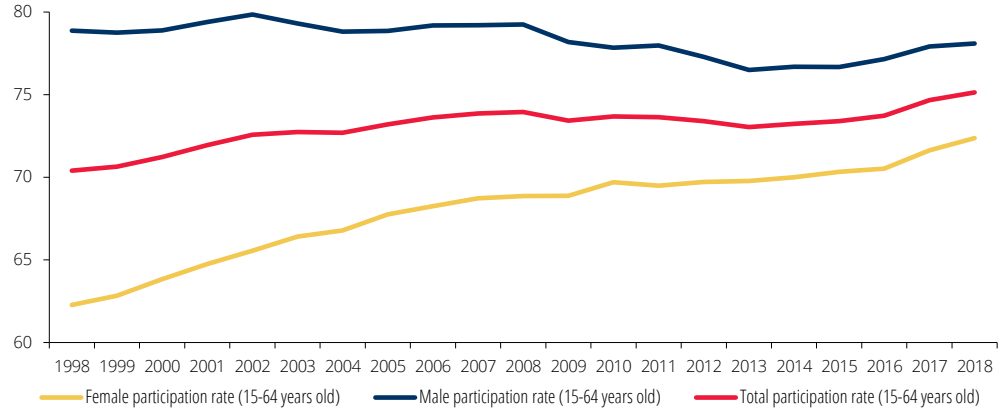
Such trend changes in the demographic structure of the population may have considerable effects on the labour market.[4] From a labour supply standpoint, measured by the labour force, the demographic developments of the last 20 years with the greatest impact are the low growth of the resident population and the increasing weight of the older age groups in the labour force. The impact of these dynamics on the labour force has been mitigated by an overall upward trend in the participation rate, which is largely due to the increase in female participation in the labour market (Chart 10). The participation rate in Portugal is above the EU average, although below that observed in several EU countries.

The impact of population ageing on the participation rate results from the usual life cycle of individuals (Chart 11). For example, in 2018, the participation rate in Portugal was 34.2% for the 15 to 24 age group, around 90% for the 25 to 54 age group, 63.4% for the 55 to 64 age group and 11.5% for the over 64 age group.

The change in the participation rate may be broken down between the effect of demographic changes in the population and the effect of the labour force dynamics within each age group. Chart 12 illustrates the breakdown of participation rate changes that result from the change over time in the relative weight of each age group on population (demographic effect) and the change in participation rate within each age group. These effects are still broken down into contributions by gender. From 2011 onwards changes in the demographic structure of the population have had a negative impact (ageing) on the change in the participation rate, reflecting the increasing weight of the older groups, with lower participation rates, and the reduction of the percentage of individuals aged 25 to 34.

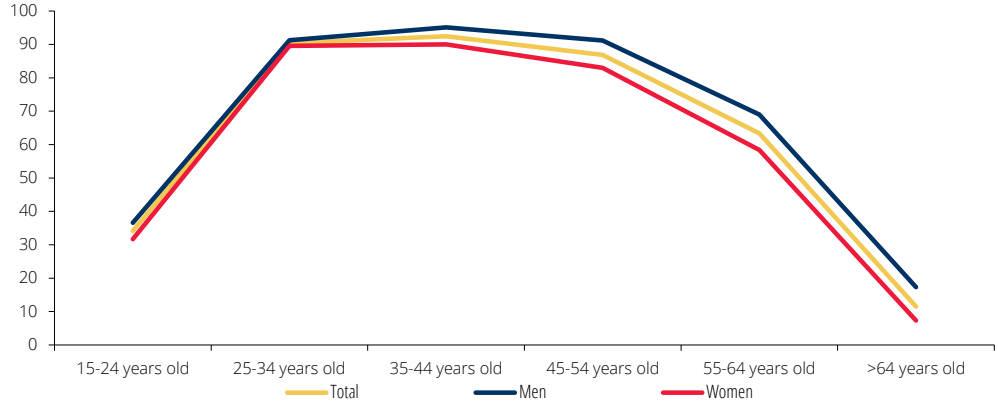
4. See, for example, Shimer (2001) or Aaronson et al. (2014).

Chart 10 • Evolution of the total participation rate and by gender | Percentage



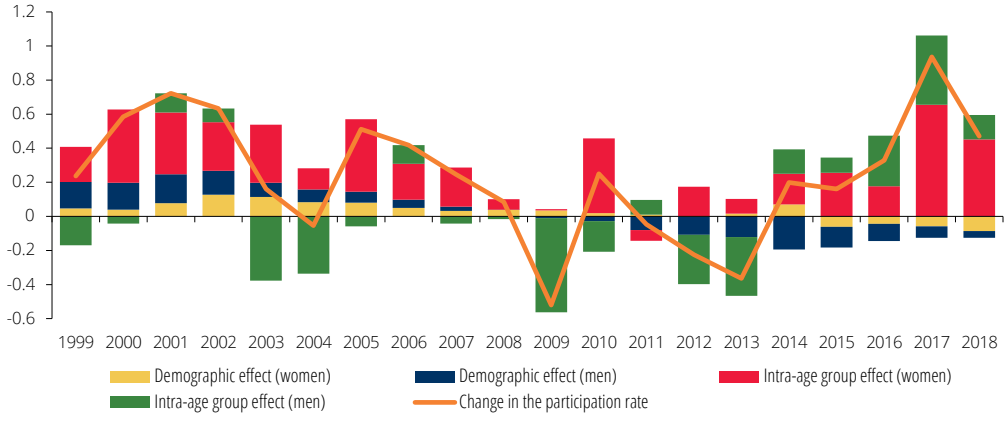
Source: Statistics Portugal – *Labour Force Survey* (Banco de Portugal calculations).

Chart 11 • Participation rate by age group in 2018 | Percentage



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

Chart 12 • Decomposition of the change in the participation rate by age group and gender between demographic effect and intra-age group effect | Contributions to the change in the participation rate, in percentage points

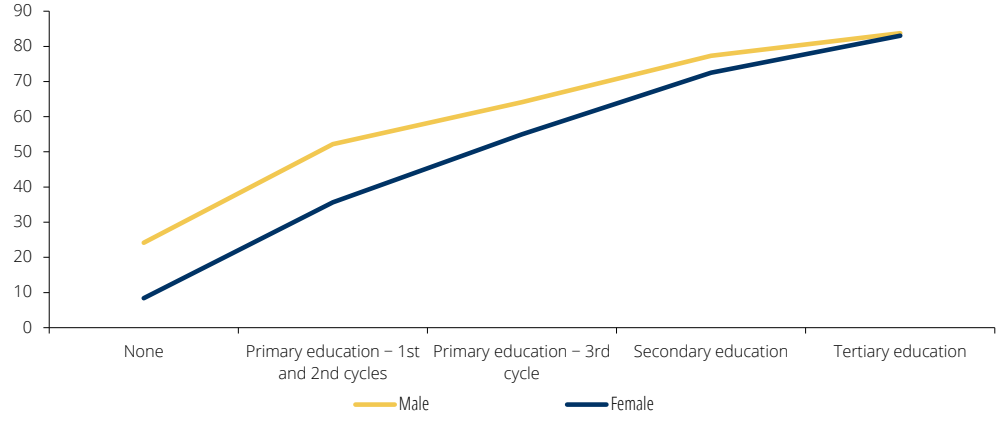


Source: Statistics Portugal – *Labour Force Survey* (Banco de Portugal calculations).

In contrast, there has been an increase in the participation rates across the different age groups, known as the intra-age group effect, which tends to evolve in line with the cyclical position of the economy. The women's contribution has been remarkable in the past two decades, in line with their increasing trend to participate in the labour market. In recent years, this effect has also been particularly marked in the case of men, reflecting the very sharp increase in the participation rate of individuals aged 55 to 64. In 2018, the participation rate for this cohort stood at 63.4%, up by 9 p.p. from 2008 and by 12 p.p. from 1998.

In addition to the impact of higher life expectancy and changes in the rules of public pension schemes to extend working life (Box 1), the increase in the participation rate of the older cohort may also reflect other effects. Among them, the possibility of returning to the labour market after retirement and possible composition effects associated with the significant increase in the level of education in these age groups, as participation rates tend to increase with the level of formal education of the population. In 2018 the participation rate of the population with tertiary education was 83.7% for men and 83% for women, with these figures decreasing to 77.3% and 72.5%, respectively, among the population with secondary education (Chart 13). Conversely, it should be noted that the secular trend for a declining participation rate of the population under the age of 24 remains the same, being associated with the extension of the schooling of the youngest population, which leads to a later entry into the labour market.

Chart 13 • Participation rate in 2018, by gender and educational attainment | In percentage of the male or female population at each level of education



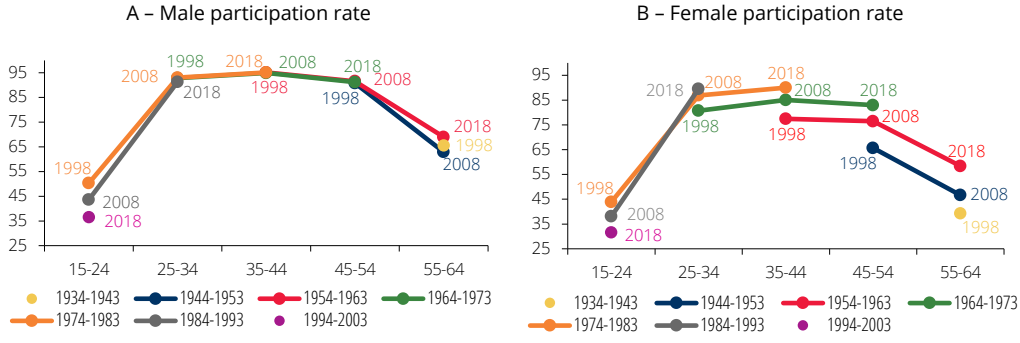
Source: Statistics Portugal – *Labour Force Survey* (Banco de Portugal calculations).

As highlighted in Charts 10 and 12, the long-term trend of increasing the female participation rate has significantly contributed to the considerable increase in the participation rate in recent decades. Between 1998 and 2018, the female participation rate among the population aged 15 to 64 increased from 62.3% to 72.4%, while the male participation rate decreased from 78.9% to 78.1%. Differences in households' composition, which tend to be ever smaller in size, are also probably connected to these developments.[5]

5. The increase in the female participation rate reflected the significant increase in the participation rate of single women, which increased from 27% in 1998 to approximately 41% in 2018. In the same period, the participation rate of married women stayed almost unchanged at around 59%.

Chart 14 shows the evolution of the participation rate of men and women over the last 20 years, evidencing the behaviour of the different generations. A number of structural features are noteworthy. Regarding male participation rate (Chart 14A), the major differences between the generations are found at the beginning of the life cycle (with a decrease in the participation rate of the younger generations, associated with higher education levels) and at the end of the working age (with a longer working life for younger generations). In all other age groups, no major differences between the generations standout. In the case of the female participation rate (Chart 14B), the evidence suggests a marked generational transition in terms of labour market participation. The female participation rate has been growing continuously from generation to generation, converging on younger ones (born after 1974) to levels close to the participation rate of men. In 2018, the participation rate of women born between 1984 and 1993 was 89%, a figure that compares with a participation rate of 91% for men born in the same period. This increase in the female participation rate should be linked to a number of structural factors, including cultural or social factors. This momentum is set to continue to contribute to an increase in the total participation rate in the coming decades, as younger generations of women are replacing the older ones over the whole life cycle. As observed in men, there is also a decline in the female participation rate for the cohort 15 to 24 years old. The main factor contributing to this development is the increase in the schooling level among the female population. Between 1998 and 2018, the share of women aged 15 or over with tertiary education increased from 11.4% to 32.9%, a more striking increase than that of men (from 6.6% in 1998 to 19.8% in 2018).

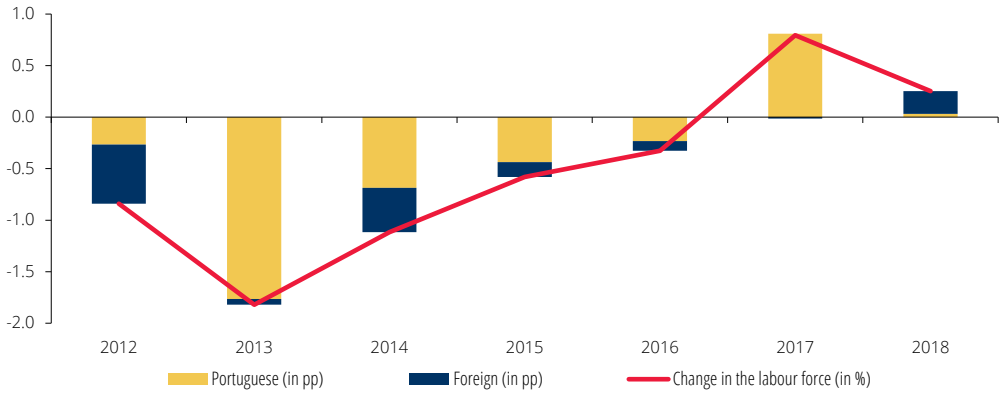
Chart 14 • Participation rate by gender and year of birth cohorts | Percentage



Source: Statistics Portugal – *Labour Force Survey* (Banco de Portugal calculations). | Note: Each line in the chart represents the participation rate across the seven generations considered, at different age groups. For instance, for the generation of men born between 1974 and 1983, the value of 2018 corresponds to their participation rate when they are aged between 35 and 44.

A development that has most recently contributed to the increase in the participation rate in Portugal is the contribution of the foreign population. In fact, immigration flows appear to be a potential channel to mitigate the negative impact on labour supply resulting from other demographic trends mentioned above. Therefore, it is noteworthy that in 2018 the foreign labour force contributed 0.2 p.p. to the growth of 0.3% of the labour force in Portugal (Chart 15). This reflects the higher participation rates of the foreign population compared to the Portuguese population, a difference that is particularly marked for individuals under the age of 35.

Chart 15 • Evolution of the labour force by nationality | Contribution to the growth of the labour force, in percentage points



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

Labour supply and underutilisation in the labour market

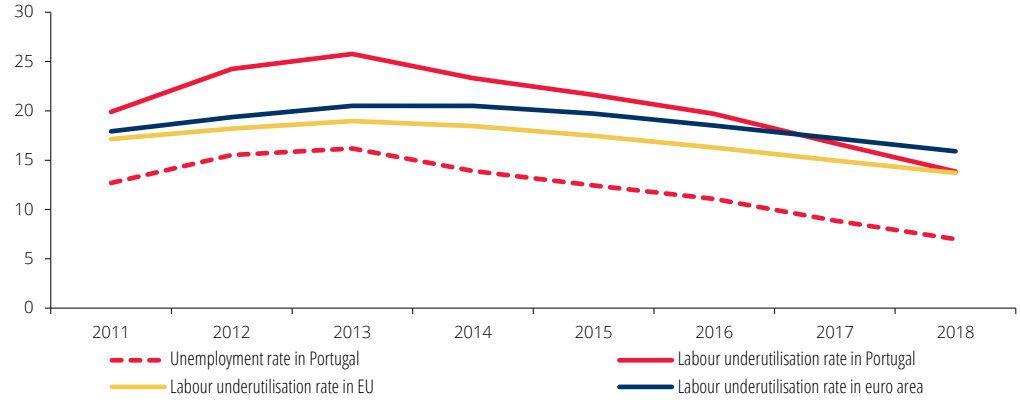
In 2018 the labour force aged 15 and over was at a level close to that observed in 2000, reflecting a reduction of almost 6% compared to 2008. In a context where the participation rate has shown a fairly significant recovery path, reaching historically high values, the lowest level of labour force in Portugal should be reflecting mainly structural factors, including those related to demographic developments.

In this sense, it is understandable that the debate around the potential growth of the labour force in Portugal takes increased interest in the current context, especially against a backdrop where the economy's cyclical position is reflected in a tightening in the labour market. Recent years have witnessed very favourable labour market developments in Portugal, with significant employment growth and a fall in the unemployment rate to figures that had not been recorded since 2004. Simultaneously, some indicators suggest the existence of difficulties in Portuguese firms to hire workers, particularly with higher levels of qualification. According to Statistics Portugal's Business Cost of Contexts Survey, released at the end of July 2018, the firms identified the difficulties in hiring workers and the access to skilled technicians as the areas that increased the most between 2014 and 2017. On the other hand, the latest European Commission's Opinion Surveys reveal that the percentage of firms indicating lack of workers as a factor adversely affecting production has increased since the beginning of 2017, while sectoral indicators on job prospects maintain an upward path and stand above the levels observed prior to the international financial crisis.

In addition to population growth and participation rate, the labour supply growth also depends on structural changes as to the number of working age individuals without a job who have not sought employment, but show a desire to work and who will possibly start actively seeking work. Thus, it is important to assess the overall level of underutilisation in the labour market by considering broader measures than just the unemployment rate, particularly by taking into account those working age individuals without a job who are excluded from the official definition of unemployed, by not actively seeking employment, but that remain attached to the labour market, in particular by expressing their desire to work.

In this context, a number of alternative indicators also point to the substantial reduction in underutilisation in the Portuguese labour market. The number of individuals without a job claiming they want to work but do not actively seek work has decreased substantially. This includes the sub-group of individuals currently available for work (usually known as discouraged).[6] This has been reflected in the labour underutilisation rate calculated by Statistics Portugal, which has presented a steeper downward path than the unemployment rate, standing at a level close to the EU average in 2018 (Chart 16).[7]

Chart 16 • Labour underutilisation rate (15-74 years old) and unemployment rate in Portugal | Percentage



Source: Eurostat (Banco de Portugal calculations). | Note: The changes made in the Labour Force Survey from 2011 onwards resulted in a more rigorous determination of the number of discouraged individuals and led to an increase in their number compared with the previous survey. For this reason, the values of the current series are not comparable to those previously calculated and the underutilisation rate is only presented from 2011 onwards.

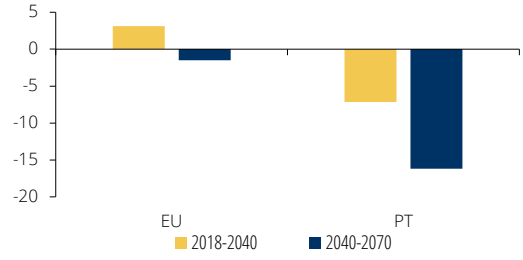
These indicators suggest that the room for the labour force growth by the inclusion of inactive individuals still attached to the labour market has narrowed over the most recent period. A more intensive use of the existing workers provides additional margin for firms to expand their productive capacity. In fact, while the labour force growth constitutes the main determinant for the increase in labour supply, the adjustment in the number of working hours also offers a relevant margin. In this context, the number of part-time workers who cannot find a full-time job (involuntary part-time workers) 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 claiming to be available to work longer hours and higher pay fell by 8%.

6. In literature, these individuals are known as marginally attached workers. In 2018 the number of individuals in this situation fell by 12%, to stand at 293 thousand.
7. The labour underutilisation rate is an indicator calculated by Statistics Portugal that aggregates unemployed individuals, involuntary part-time workers, individuals seeking work but not immediately available and individuals available to work but not seeking work (discouraged).

How are these trends projected for the future?

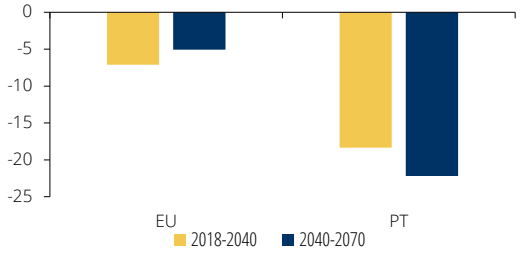
According to the latest Eurostat demographic projections (EUROPOP2015), the resident population in the EU is expected to continue to grow over the next two decades, albeit moderately, and a reduction is expected in the following three decades (Chart 17). In the case of Portugal, the expected demographic decline is significant over the same period.[8] This reduction is particularly marked for the working-age population (Chart 18). Combining demographic trends with the European Commission's projections for the participation rate, a very sharp reduction in the labour force (15 to 64 years old) is expected in Portugal in the long term, despite the increase in the participation rate above the EU average over the next two decades (Charts 19 and 20).[9] The expected increase in the participation rate in Portugal is essentially the result of an ongoing convergence of the female participation rate and the male participation rate over the next two decades, with the male participation rate being expected to stabilise over the whole horizon. This is an expected convergence for the various age groups, but more sharply for the cohort over 55 years old. The exercise allows for a gradual increase in the effective age of exit from labour market over the projection horizon, but with a more striking effect in the case of women. The underlying assumption is that, in a scenario of unchanging policies, i.e. assuming the conditions to access to retirement in 2016 (baseline year for the exercise), the effective age of retirement is expected to increase by about three years for women and about two years for men until the end of the projection horizon.

Chart 17 • Change in total population | Percentage



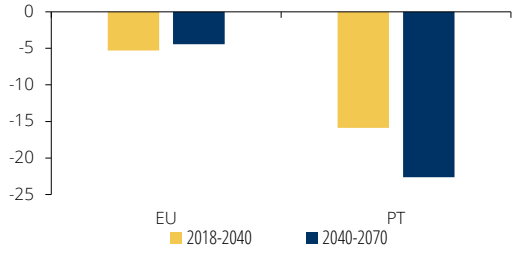
Source: Eurostat.

Chart 18 • Change in the working-age population (15-64 years old) | Percentage



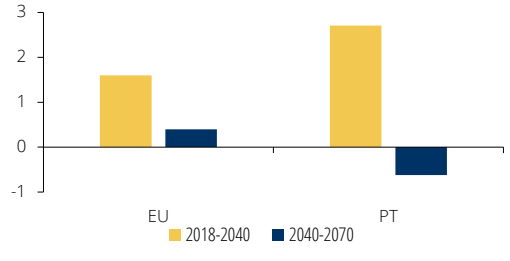
Source: Eurostat.

Chart 19 • Change in the labour force (15-64 years old) | Percentage



Source: European Commission (Banco de Portugal calculations).

Chart 20 • Change in the participation rate (15-64 years old) | Percentage points



Source: European Commission (Banco de Portugal calculations).

8. Uncertainty exists in all demographic scenarios, particularly in the net migration component, which is more volatile, more difficult to establish statistically and therefore more difficult to project. In any event, the contribution of net migration to the projected change in population in Portugal (PT) is close to that of the European Union (EU).
9. The projected reduction in the participation rate in Portugal between 2040 and 2070 reflects the reduction in the youngest age group, which is no longer offset by an increase in the oldest age group.

However, the outcome of the projections for developments in the labour force is controlled by the demographic effect of population ageing and reduction in Portugal, which results not only from longevity gains across all European countries, but also from the low fertility rates in Portugal and for which, in the projection exercise, only a very moderate recovery is expected. Thus, in the projections for the EU as a whole, Portugal has one of the highest old-age dependency ratios and one of the sharpest reductions in the working-age population.

Final considerations

Evidence presented in this Special issue highlights the importance of structural factors to developments in the labour force. Some of these factors are noteworthy, especially those related to demographic changes that occurred over the last two decades, including the reduction and ageing of the resident population.

These developments limit the potential growth of the labour supply in Portugal. Simultaneously, emphasis was placed on some factors that could mitigate this, including: (i) the increase in the participation rates in the various age groups, especially in the oldest cohort, where the growth margin is higher and boosted by a gradual increase in the retirement age; and (ii) the maintenance of the secular trend of a rising female participation rate, which is expected to remain in the process of convergence with the male participation rate over the next few decades. These two factors are trends that have a positive impact on the labour force within an extended horizon. In addition, the increased net migration flows, despite their pro-cyclical nature, may also contribute to mitigate the unfavourable demographics. Yet, labour supply constraints and the dynamics of demand are likely to increase pressure on wages in the short term. In this context, the last two years witnessed an acceleration of wages in Portugal, with compensation per employee in the whole economy growing by 1.6% in 2017 and 2.2% in 2018.

The supply conditions of the economy are determined not only by the available labour supply, but also by its level of qualifications, which is reflected in productivity developments. In this context, the very significant increase in the average level of qualifications of the labour force in recent years is noteworthy. In 2018, the percentage of individuals with tertiary education in the labour force was 26.3%, 17 p.p. higher than in 2000, when the labour force was at a similar level. Thus, the ageing trend and the higher average level of qualifications are two characteristics of the labour force operating in opposite directions to explain future developments in output in Portugal.[10]

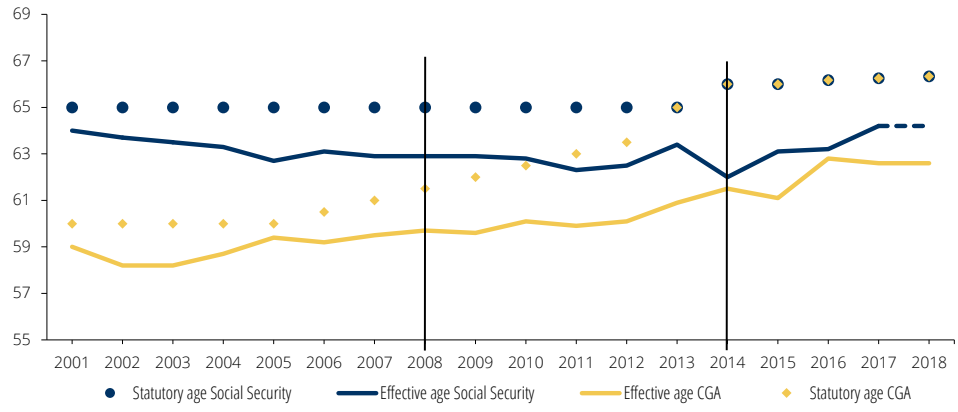
Finally, the trend of increasing automation and robotisation in production processes is expected to have a very strong impact on the labour market, with a reduction in labour demand, particularly for less skilled workers. Thus, this may make quantitative labour supply constraints in Portugal less urgent, but will reinforce the importance of increasing the labour force skills, both general and specific skills.

10. This was analysed under the Special Issue entitled "Demographic transition and growth in the Portuguese economy", *Economic Bulletin*, Banco de Portugal, October 2015.

Box 1 • Effect of the increasing retirement age on labour force developments in Portugal

One of the reasons for the higher participation rate in the age group over 55 is the increase in the statutory age of retirement. The public pension schemes in Portugal have been subject to consecutive reforms and additional measures, also with a view to extending working lives. From the analysis carried out in this box, the conclusion is that there was actually an increase in the effective average retirement age over the last decade and more continuously since 2015 (Chart C1.1), and this trend is expected to remain in the future.

Chart C1.1 • Evolution of the statutory and of the average effective retirement ages | In years of age



Sources: CGA, Pordata (MTSSS) and legislation. | Notes: The dashed observation corresponds to an estimated value. The vertical lines indicate the dates of introduction of the sustainability factor (initial in 2008) and the revised one applied to early retirement pensions (in 2014).

Until 2013 under the Portuguese general Social Security scheme,[11] the statutory retirement age remained at 65, while under Caixa Geral de Aposentações scheme (CGA) the statutory retirement age converged gradually from 60 to 65.[12] Notwithstanding this background, until 2011 the effective average retirement age showed a downward trend in the general scheme, reflecting a higher share of early retirement, with only a slight increase in the case of the CGA.

These developments were interrupted in 2012 with the entry into force of measures restricting access to early retirement, excluding exceptional regimes, which limited the individuals' decisions and resulted in an increase in the effective average retirement age and some volatility in the following years.

At the end of 2013 it was decided that the statutory age of retirement – designated as 'normal retirement age' – should depend on developments in longevity gains. Meanwhile, in 2014, the financial penalty (via the sustainability factor) to be applied to early retirement became more pronounced, thereby discouraging this option.[13] Unlike the 2007 scheme which sought to

11. It covers all private sector workers and civil servants hired from 1 January 2006 onwards. The CGA scheme, covering civil servants, has been closed to new admissions since that date.
12. The increase in the statutory retirement age from 60 to 65 years and the length of the total contributory record from 36 to 40 years was laid down in the 2005 revision of the Retirement Statute, together with other measures to further enhance convergence with the general scheme.
13. The Decree-Law No 167-E/2013 of 31 December 2013 specifies these rules, including the formulas for calculating the normal retirement age effective each year and the sustainability factor to be applied in case of early retirement.

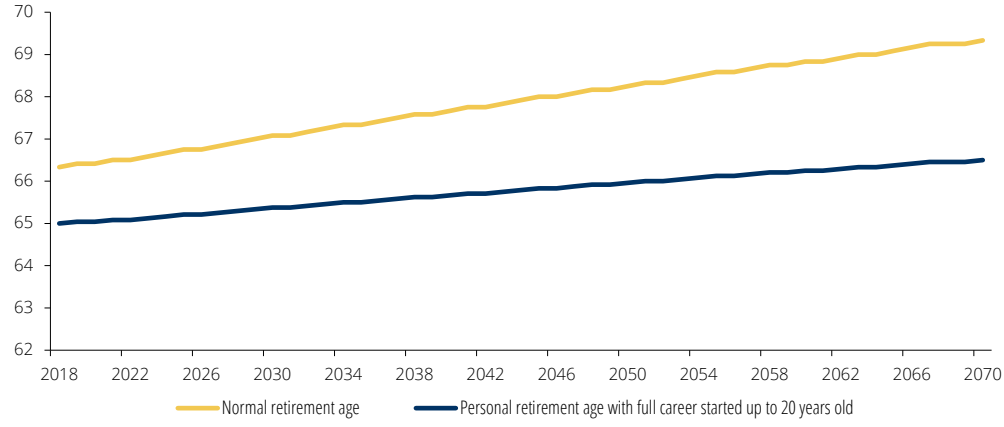
promote the extension of working life, but with no significant results in this aspect, these new rules have resulted in an increase in the effective average retirement age.[14]

According to the current legislation, nearly two-thirds of the longevity gains (with a two-year lag) are transferred to the increase in the retirement age. In the transition period – 2014 and 2015 – the retirement age was 66 and since then it has increased approximately by one month per year up to the age of 66 and four months in 2018. However, since 2015 the increase in the effective average retirement age has been greater than these four months of the statutory age: about one year in the general scheme and 1.5 years in the case of the CGA, which may also have resulted from the more restrictive scheme for early retirement.

For 2019 and 2020 the normal retirement age is set at 66 years and five months, therefore new extensions to working life are expected.

Assuming that the rules in place are maintained, and using Eurostat's demographic projections (EUROPOP2015), in particular for developments in the gains in average life expectancy at the age of 65 for Portugal, it is possible to project the trend towards future developments in the retirement age (Chart C1.2). Based on these assumptions, the expected nearly five years of average gains in longevity between 2018 and 2070 result in a three-year increase in the normal retirement age over this period.

Chart C1.2 • Projection of the retirement age according to longevity gains | In years of age



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

The new flexibility scheme for the 'personal age' of retirement in place since 2019 entitles individuals with a contributory record of at least 40 years at the age of 60 to advance their retirement age by four months for each additional year of contributions.[15] This bonus makes it possible to halve the increase in the normal retirement age that would result from future longevity

14. The 2007 reform provided for the introduction of a sustainability factor which reduced the value of the new old-age pensions on the basis of the gains in average life expectancy at the age of 65 (statutory retirement age), but individuals could avoid this financial penalty with an extended working life bonus (Decree-Law No 187/2007 of 10 May 2007). However, in practice the first option prevailed, with the majority of individuals accepting a financial penalty instead of postponing retirement. This financial penalty of the sustainability factor ranged from 0.56% in 2008 to 4.78% in 2013. Under the new 2013 rules, the sustainability factor cut applied only to early retirement was initially 12.34% in 2014 and then 14.5% in 2018 and 2019.
15. Decree-Law No 119/2018. Under these conditions, the value of the new old-age pension is not subject to the cut resulting from the sustainability factor applied to early retirement, nor is it reduced by 0.5% for each month in advance of the personal retirement age.

gains, which would be 1.5 years at the end of the projection horizon. In practice, with this rule individuals are currently allowed to retire at the age of 65 in most of these cases where flexibility applies. However, this scheme potentially applies only to a limited share of future pensioners. Indeed, in order to be eligible, the minimum age to start the contributory record is 20 years and the participation rate of the youngest age group is relatively low and will tend to decrease, given the expected increases in actual schooling.

This means that, according to the current rules, the upward trend in the effective retirement age is likely to continue in the future, albeit more moderate if individuals are willing to accept a financial penalty instead of extending their working lives. The stabilisation and transparency of the legal framework of pension schemes will be crucial for individuals to make informed decisions on savings and consumption, with a view to ensuring an appropriate income after retirement.

References

Aaronson, S., Cajner, T., Fallick, B., Galbis-Reig, F., Smith, C. and Wascher, W.L. (2014), "Labor Force Participation: Recent Developments and Future Prospects", *Working Papers 1410*, Federal Reserve Bank of Cleveland.

Banco de Portugal (2015), "Demographic transition and growth in the Portuguese economy", Special Issue, *Economic Bulletin*, October.

CGA, *Relatório e Contas* (various editions of annual reports, in Portuguese only).

European Commission (2017), "The 2018 Ageing Report: Underlying Assumptions & Projection Methodologies", *European Economy Institutional Paper 065*.

Shimer, R. (2001), "The Impact of Young Workers on the Aggregate Labor Market", The Quarterly *Journal of Economics*, Oxford University Press, 116(3), 969-1007.

European Commission (2018), "The 2018 Ageing Report: Economic and Budgetary Projections for the EU Member States (2016-2070)", *European Economy Institutional Paper 079*.

Eurostat Database (Last update: 17-01-2018): http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=proj_15nalexp&lang=en

Instituto da Segurança Social (2019). "Pensão de velhice – Guia Prático" available at: http://www.seg-social.pt/documents/10152/14521673/7001_pensao_velhice.pdf/003416f8-5c4e-44e6 -a502-844a423a9396 (in Portuguese only)

OECD (2019), "Reviews of Pension Systems – Portugal".

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