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I Projections for the Portuguese economy: 2020-22

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1 Introduction

The projections published in this *Economic Bulletin* are strongly influenced by the very adverse context generated by the COVID-19 pandemic in most economies. The unprecedented nature of the current crisis – characterised by the interaction of mutually reinforcing supply and demand shocks – implies that current projections present a much higher degree of uncertainty than usual. The magnitude of the fall in economic activity in the short term and its subsequent recovery depend, among other factors, on the interaction between developments in the pandemic and the policies implemented. Containment measures, which directly involve the suspension of activity for many enterprises and restrictions on citizens' mobility, add to the negative effects of uncertainty on consumption and investment intentions. Conversely, it is necessary to consider the impact of the policy measures adopted by the authorities, which are aimed at mitigating these effects. These include greater monetary accommodation announced by the main central banks and government measures to strengthen social protection, safeguard workers' incomes and maintain enterprises' liquidity.

Table I.1.1 • Projections of Banco de Portugal for 2020-22 | Annual rate of change, in percentage (except where otherwise noted)

	Weights 2019	EB June 2020				EB March 2020 [d]			
		2019	2020 [p]	2021 [p]	2022 [p]	2019	2020 [p]	2021 [p]	2022 [p]
Gross domestic product	100	2.2	-9.5	5.2	3.8	2.2	-5.7	1.4	3.4
Private consumption	64.1	2.2	-8.9	7.7	3.0	2.3	-4.8	1.8	3.7
Public consumption	16.9	1.1	0.6	0.7	0.8	0.8	3.0	-2.0	1.1
Gross fixed capital formation	18.3	6.3	-11.1	5.0	4.5	6.4	-14.9	3.4	9.3
Domestic demand	99.9	2.8	-8.2	6.0	2.9	2.8	-5.5	1.4	4.2
Exports	43.9	3.7	-25.3	11.5	11.2	3.7	-19.1	7.4	5.6
Imports	43.8	5.2	-22.4	13.5	8.5	5.2	-18.7	7.5	7.4
Contribution to GDP growth, net of imports (in p.p.) [a]									
Domestic demand		1.5	-3.2	3.3	1.4	1.5	-1.5	0.2	2.4
Exports		0.7	-6.2	1.9	2.4	0.7	-4.2	1.2	1.0
Employment [b]		0.8	-4.5	2.0	1.5	0.8	-5.2	1.2	2.8
Unemployment rate		6.5	10.1	8.9	7.6	6.5	11.7	10.7	8.3
Current plus capital account (% of GDP)		0.9	0.3	0.3	0.3	0.9	2.0	2.9	1.4
Trade balance (% of GDP)		0.4	-0.5	-1.3	-0.5	0.4	1.0	1.0	0.3
Harmonized index of consumer prices		0.3	0.1	0.8	1.1	0.3	-0.1	0.5	0.7

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. (c) As a percentage of the labour force. (d) Figures relate to the adverse scenario of the March 2020 *Economic Bulletin*.

Uncertainty about the economic environment is intensified by the scarcity of real-time statistics available, as well as the greater difficulty in compiling and interpreting economic indicators. Against this background, the projections presented result from a combination of the usual methods based on the expenditure side with a short-term approach focusing on the output of the various sectors of activity. In addition to the usual economic indicators, this projection exercise was based on new, more frequent data sources, which allow for a more timely assessment of the current economic situation (Box 1). Within this set of information, the results of the Fast and Exceptional Enterprise Survey launched by Statistics Portugal and the Banco de Portugal are noteworthy:

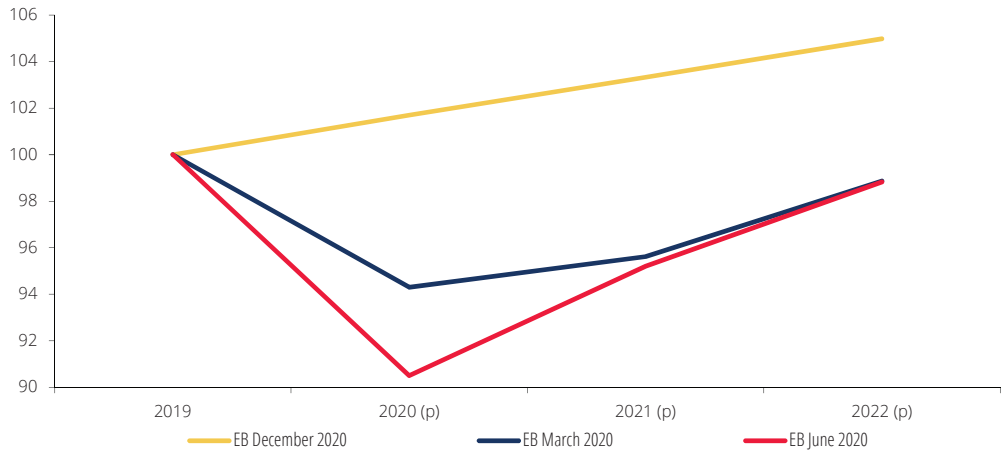
they enable an assessment of the impact of the pandemic on turnover and effectively working staff at sector level (Box 2). Given the complexity and global nature of the crisis, it is also important to use quantitative models that make it possible to explain projections based on a set of theoretical structural relationships, thus clarifying the underlying narrative. This analysis is developed in Box 3, using a dynamic general equilibrium model.

The projections in this Bulletin were drawn up in the context of the June 2020 Eurosystem projection exercise,[1] which involved a similar narrative about developments in the pandemic and associated containment measures, in addition to a set of technical and external environment assumptions common to all countries (Section 3). The external environment is characterised by a reduction in global Gross Domestic Product (GDP) and international trade flows, which is only comparable to that recorded in the Great Depression of 1929.

Current projections point to a 9.5% reduction in GDP in 2020, reflecting the very marked negative impact of the pandemic in the first half of the year. In the first quarter of 2020, GDP decreased by 3.8% from the previous quarter, the largest drop since quarterly series exist for the Portuguese economy. In the second quarter of 2020, more affected by the pandemic and the impact of the containment measures, the quarter-on-quarter activity rate of change is expected to decrease by an unprecedented magnitude. Despite being surrounded by high uncertainty, estimates point to a reduction that could reach a value of around 15%.

The gradual lifting of containment measures in a context of relative pandemic control is likely to result in the recovery of economic activity from the third quarter of 2020 onwards. Thus, GDP is estimated to grow by 5.2% in 2021 and 3.8% in 2022. At the end of the projection horizon, economic activity is expected to be at a level close to that observed in 2019, but considerably below that expected before the pandemic (Chart I.1.1). According to the Eurosystem's June 2020 projections, developments in economic activity for the euro area average are expected to be similar, albeit with considerable cross-country differences (Section 3).

Chart I.1.1 • GDP | Index (2019=100)



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

The strong downturn in activity in 2020 and the subsequent slow recovery will be reflected in the labour market. Employment is expected to fall significantly in 2020 and the unemployment rate

1. These projections were released on 4 June and are available at https://www.ecb.europa.eu/pub/projections/html/index.en.html.

should rise to around 10%. The impact of the crisis on the labour market will tend to be mitigated or lagged by policies aimed at preserving employment and enterprises' liquidity. The time profile of labour market variables depends on the impact and duration of these policies (Section 2). Over the remaining projection horizon, employment is expected to recover somewhat, but the unemployment rate is expected to remain higher than in 2019.

While for activity, the supply and demand shocks associated with the pandemic are mutually reinforcing, for prices these shocks have opposite sign impacts. According to the current projections, downward pressures on prices are expected to predominate, so inflation is likely to remain at very moderate levels over the projection period.

The economy's net lending is expected to decline in 2020 and remain relatively stable as a percentage of GDP in 2021-22. In 2020 the goods and services account is projected to post a deficit again – which has not been the case since 2011 – as a result of the reduction in the services account surplus, partially offset by a very significant terms of trade improvement in the goods account. The current and capital account balance as a percentage of GDP is expected to benefit from the European institutions' transfers over the projection horizon, in particular in 2020-21.

For the risk analysis on these projections, the possibility of adverse pandemic developments and corresponding consequences for the economy stands out. The materialisation of this risk is illustrated in Box 4, which describes an alternative scenario for the Portuguese and global economy in which a more intense spread of the virus is expected – including a possible second wave of infections by the end of 2020 – requiring that strict containment measures be maintained over a longer period of time. This scenario's economic effects are more severe and persistent, resulting in more bankruptcies, a higher unemployment rate and lower investment.

The projections released in the March issue of the *Economic Bulletin* already included the impact of the ongoing pandemic, assessed through two alternative scenarios (baseline scenario and adverse scenario). Developments after the cut-off date for this Bulletin – 12 March – were more negative in the first half of 2020 than those considered in the adverse scenario, something that had been indicated as possible. As such, current projections include a downward revision for the GDP rate of change in 2020 compared to the adverse scenario presented in the previous *Economic Bulletin*. Recovery from the second half of 2020 and in 2021 is more pronounced, so the level of activity expected in 2021 and 2022 is very similar to that implied in the adverse scenario of the March Bulletin (Chart I.1.1).

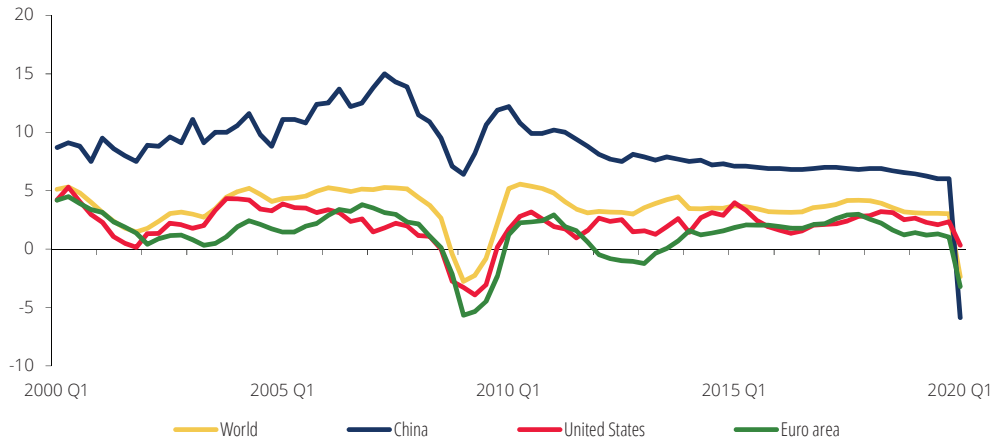
2 External environment and technical assumptions of the projections

Pandemic emergency causes an abrupt fall in global economic activity in 2020

The COVID-19 pandemic is a global shock with no recent precedent. The rapid spread of the outbreak forced authorities to adopt restrictive containment measures that paralysed a significant part of the economy, both in advanced economies and in many emerging market economies. As such, the effects of the pandemic have been passed on globally, heavily affecting world trade.

Initial estimates for GDP in the first quarter of 2020 point to a downturn in global economic activity, mainly reflecting an unprecedented drop in China, where containment measures affected activity as of January (Chart I.2.1). Most advanced economies also experienced a decline in GDP in the first quarter, but the greatest impact is likely to occur in the second quarter only. The available indicators point to an abrupt fall in activity in April, with a significant deterioration in confidence in most sectors and a sudden increase in unemployment, particularly in the US.

Chart I.2.1 • GDP in the world and main economies | Year-on-year rate of change



Sources: Eurostat, IMF and Refinitiv (Banco de Portugal calculations). | Note: World GDP estimated from GDP of 54 countries. Aggregation based on the GDP weight of these countries on world GDP, based on purchasing power parity (PPP).

With the progressive lifting of containment measures, allowing a gradual resumption of activity for the most directly affected sectors, recovery is expected in the second half of the year. However, this recovery will not be sufficient to compensate for the loss observed in the first half, and activity will probably remain below the level observed prior to the pandemic crisis for an extended period.

According to the Eurosystem's assumptions underlying the projections for the Portuguese economy presented in this Bulletin – with a cut-off date of 18 May – global GDP is expected to fall by approximately 4.5% in 2020 (Table I.2.1), the most pronounced recession since the Great Depression in 1929-32. The expected recovery in 2021 and 2022 will be relatively robust (6% and 3.8% respectively), but insufficient to achieve the level of activity projected before the pandemic crisis at the end of the projection horizon. In 2022, global GDP is still expected to be 4% lower than anticipated in the December 2019 projection exercise, which serves as a reference for a non-pandemic counterfactual scenario (Chart I.2.2 – Panel A).

In relation to world trade, a 12.7% drop in volume is projected in 2020, reflecting the especially negative impact of the crisis on global value chains for goods and on the trade in services. Transportation and tourism services are particularly affected by mobility restrictions and social distancing. In the following years, recovery of international trade flows is anticipated to occur at a pace only slightly higher than projected for global GDP.

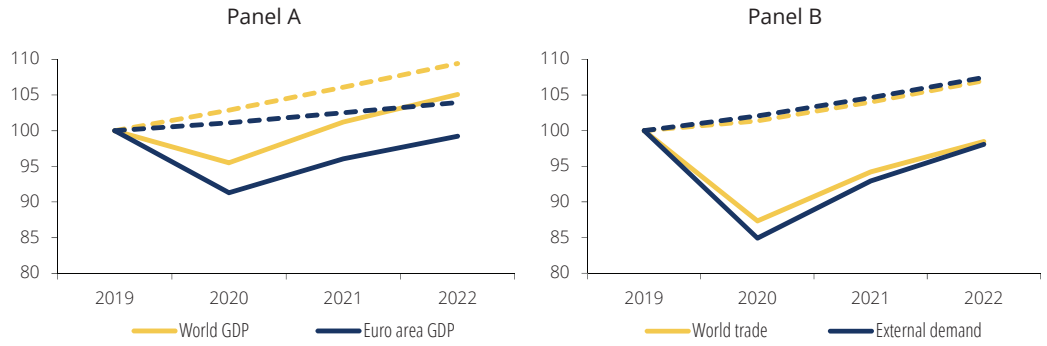
The 2020 fall in activity is common both to advanced and emerging economies, but it is particularly pronounced in European countries that are important trading partners for Portugal, particularly Spain. In this context, external demand for the Portuguese economy is expected to contract more than world trade in 2020 (-15,1%), recovering in 2021-22, but remaining at levels below those observed in 2019 and well below those projected for the same time horizon before the pandemic crisis (Chart I.2.2 – Panel B).

Table I.2.1 • Projection assumptions | Year-on-year rate of change, in percentage (except where stated otherwise)

		Economic Bulletin June 2020			
		2019	2020	2021	2022
International environment					
World GDP	yoy	2.8	-4.5	6.0	3.8
World trade	yoy	0.7	-12.7	7.9	4.5
External demand	yoy	1.6	-15.1	9.4	5.6
Oil price in dollars	aav	64.0	36.0	37.2	40.7
Oil price in euros	aav	57.2	33.1	34.4	37.6
Monetary and financial conditions					
Short-term interest rate (3-month EURIBOR)	%	-0.4	-0.4	-0.4	-0.4
Implicit interest rate in public debt	%	2.6	2.6	2.7	2.7
Euro effective exchange rate	yoy	-1.6	-0.3	0.1	0.0
Euro-dollar exchange rate	aav	1.12	1.09	1.08	1.08

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. The euro effective exchange rate is computed against a group of 19 partner countries. 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.

Chart I.2.2 • External environment | Index (2019 = 100)



Source: Eurosystem (Banco de Portugal calculations). | Note: Solid lines represent the scenario that supports the current projection, while dashed lines represent the scenario that supported the projection presented in the December 2019 *Economic Bulletin*.

Underlying these assumptions is a scenario in which the restrictions adopted are effective in flattening the epidemiological curve and in which the fiscal and monetary policy measures implemented in the meantime are capable of limiting the negative impact of the shock on the financial situation of households and enterprises. This scenario is subject to an abnormally high level of uncertainty with mainly downside risks associated with a possible worsening of the pandemic (Box 4).

Unfavourable impact on financial conditions partially offset by significant accommodative measures by the monetary authorities

The impact of the pandemic on financial markets began to be felt from the end of February, even before the adoption of many of the most restrictive measures in advanced economies, but was more marked during March. The major stock market indices recorded abrupt falls that month, with

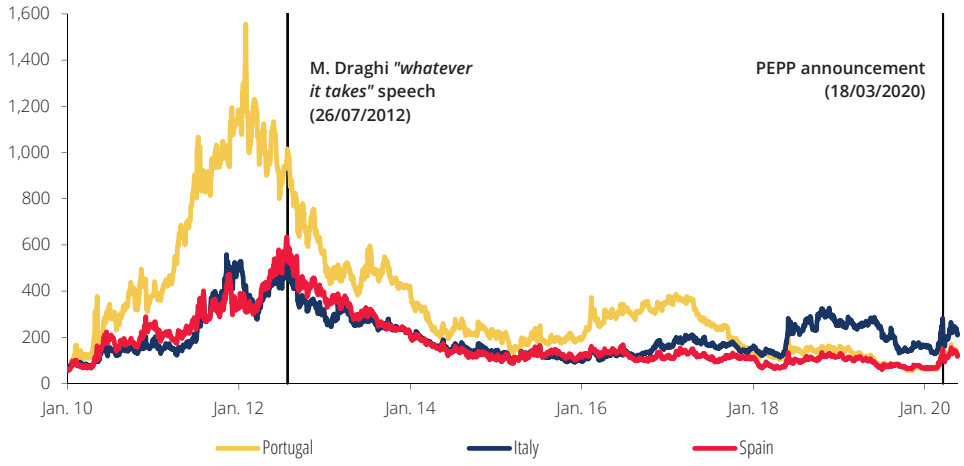
only a partial reversal in April. The context of great uncertainty was reflected in a very significant increase in financial market volatility.

The impact on oil prices was very pronounced and strongly influenced by the significant drop in overall demand, particularly in the transportation sector. The decline in demand was reflected in a significant increase in inventories, which quickly reached installed storage capacity so that, on the US futures market, negative prices for short-term oil delivery were briefly observed. On the Brent market, oil prices reached a minimum of USD 19 on 21 April, a decrease of about 70% from the end of 2019. After some initial disagreement among the main producers, OPEC members agreed to reduce the supply as of May, allowing a price recovery from the end of April. On 18 May, oil prices stood at USD 34 (close to 50% below those observed at the end of 2019), and a gradual recovery is expected over the projection horizon.

The euro effective exchange rate recorded a slight depreciation compared to the previous projection exercise, which was justified by a loss of value in relation to the main safe-haven currencies (namely USD and JPY), partly offset by an appreciation against the pound sterling and most emerging market currencies. Thus, in 2020 the effective exchange rate is expected to slightly depreciate compared to 2019 and then stabilise over the remaining projection horizon.

The sovereign debt market reflected an increase in risk aversion, especially in euro area countries with higher levels of public debt. In mid-March, the long-term interest rate differentials for Italy, Spain and Portugal compared to Germany increased sharply, despite remaining far from the maximum observed in 2012. The intervention of the European Central Bank (ECB) was rapid and decisive, particularly with the announcement on 18 March of a new securities purchase programme especially aimed at minimising the negative impact of the pandemic (PEPP). This programme made it possible to partially revert that trend and ensure some market stabilisation (Chart I.2.3). In a context of high uncertainty, interest rates on new public debt issues are expected to increase in 2020, gradually decreasing in the subsequent years, but remaining above 2019 values. Given the relatively long maturity of existing public debt stock and new financing needs, this increase results in a contained rise in the average interest rate on public debt until 2022.

Chart I.2.3 • 10-year interest rate spreads against Germany | Basis points



Source: Refinitiv (Banco de Portugal calculations).

Developments in public finances in 2020 conditioned by measures to mitigate the pandemic's impact

With regard to the assumptions for public finances, in 2020 the 0.6% growth projected for public consumption in real terms is affected by two significant yet opposing effects. On the one hand, strong growth in healthcare expenditure by the general government amid the current pandemic crisis, including expenditure on personal protective equipment, medicines, and diagnostic tests, implies an increase in public consumption. On the other hand, the pandemic containment measures led to a decrease in general government activity, which was reflected in the assumption of a reduction in the number of hours worked in this sector and which, given the same nominal expenditure, results in a decrease in public consumption volume. After the reversal of the 2020 one-off effects and in the absence of additional policy measures, in 2021-22 public consumption is expected to maintain a similar pace to that projected for 2020.[2] With regard to public investment, an acceleration is projected for 2020, as a result of the trajectory considered for the inflow of European funds, as well as a temporary and small increase associated with the acquisition of equipment for the health sector. Over the projection horizon, growth is expected to be higher than the one of nominal GDP, but with gradually lower rates of change, reflecting the maturing of the current European financing cycle.[3]

The current pandemic crisis was not only reflected in a significant increase in health-related expenditure but also triggered the adoption of a fiscal stimulus package aimed at mitigating the negative economic impact on firms and households. Most of these discretionary measures are temporary and have a concentrated impact in 2020.

The size of the extraordinary support for the maintenance of jobs in the most affected firms, known as 'simplified layoff', is noteworthy. It includes the partial subsidisation of wages, the payment of a one-off support for the recovery of business activity and contributory exemption for employers. In addition, a measure supporting vocational training was also announced and an extraordinary support was introduced for the self-employed most severely affected by the restrictions associated with the containment measures. With regard to social protection, mention should be made to the payment of sickness benefits, exceptionally not subject to a waiting period, the prophylactic isolation being equated to sick leave and the automated extension of unemployment benefits and other social benefits. Also for households, exceptional support for workers was established for reasons of family assistance, consisting of the partial payment of base compensation to those caring for children under 12 as a result of the suspension of school activities and with no possibility of teleworking. Finally, the suspension of all tax and contributory enforcement proceedings is also of note.

These measures are reinforced by an additional package without direct fiscal impact, which includes the possibility of access to moratoria on existing loan liabilities, access to credit lines guaranteed by the State (there is a special line for firms in the tourism sector), the deferral of rent payments and the extension of the deadline for compliance with tax obligations.

2. As for the public consumption deflator in 2020, in addition to an impact resulting from the effects mentioned above, it is affected by the measures contained in the 2020 State Budget, in particular the gradual unfreezing of general government career progressions, the subsidising of public transport monthly travel cards and expenditure related to a programme to support access to housing.
3. The current projection does not consider potential effects on public investment resulting from the new economic policy instruments agreed at European level.

The adopted policy measures, together with the effect of the so-called automatic stabilisers, inevitably result in a deterioration in the fiscal situation. In the context of the current pandemic crisis, the general escape clause of the Stability and Growth Pact was activated for the first time, to ensure sufficient flexibility in assessing compliance with fiscal rules without compromising the adoption of the necessary discretionary stimuli. The measures taken are the necessary response to the current crisis but, as soon as economic and social conditions permit, it is essential to continue to ensure a fiscal policy compatible with sustainable public finances in the medium term in Portugal.

3 The Portuguese economy in 2020-22

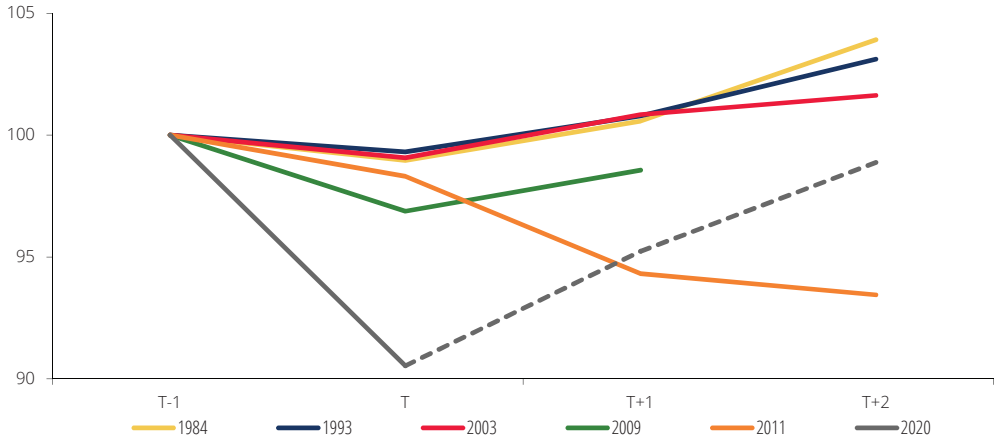
2020 is expected to see the biggest decline in economic activity in the last century

The projected decline in GDP in 2020 is very significant, largely exceeding the falls observed in the most recent recessions. In fact, it is necessary to go back to the 1920s to find a fall of this magnitude (Chart I.3.1).[4] Current projections also point to a relatively faster recovery than that observed in the wake of the 2011-13 recession. This recovery is characterised by a faster recovery in investment – assuming that the policy measures adopted limit the impact of the crisis on the corporate sector and that public investment remains relatively dynamic (Section 2). In contrast, the recovery expected in exports is slower than that observed as a result of previous recessions, reflecting existing trade tensions and, above all, the behaviour of tourism exports, whose weight has increased substantially over the past few years and which should be particularly and persistently affected by the pandemic crisis.

According to the projections presented, the most significant impact of the pandemic on economic activity occurred in the first half of 2020. The strict confinement measures adopted during the state of emergency implied a strong decrease in activity in most sectors – including almost complete shutdown in some cases – in March and more substantially, in April and May.[5] The impact in March was sufficient to cause a fall in GDP in quarter-on-quarter terms of 3.8% in the first quarter. The contraction in activity compared to the end of 2019 extends to all expenditure components, with the exception of public consumption. The decrease in exports, in particular of services, is noteworthy for its size, reflecting the collapse in tourism. As a result, the main contribution to the fall in Gross Value Added (GVA) was made by the services sector, with construction maintaining a positive variation. The impact on activity is expected to increase sharply in the second quarter, with estimates of a fall of about 15% fall compared to the first quarter (Box 1 and Box 2). The economy should recover progressively from the second half of 2020 onwards, more markedly in 2021 and 2022.

4. According to Batista, Dina; Martins, Carlos; Pinheiro, Maximiano and Jaime Reis (1997) *New estimates for Portugal's GDP: 1910-1958*. In: História Económica, 7. Lisbon: Banco de Portugal, GDP in Portugal fell by 9.7% in 1928.
5. For a brief chronology of the development of the pandemic in Portugal and the containment measures adopted, see Box 1.

Chart I.3.1 • Developments in GDP in recessions and subsequent recoveries | T-1=100



Sources: Statistics Portugal and Banco de Portugal. | Notes: The year T designates the first year of each cycle in which a reduction in GDP occurs in annual terms (recession year). The dashed line corresponds to the values projected in this Bulletin.

In annual average terms, GDP in Portugal is expected to decrease by 9.5% in 2020 and grow by 5.2% in 2021 and 3.8% in 2022. According to the baseline scenario of the Eurosystem's June projections, based on common assumptions for the development of the pandemic across the Member States, euro area GDP should present a path similar to that forecast for Portugal, with a reduction of 8.7% in 2020, followed by a recovery of 5.2% in 2021 and 3.3% in 2022.

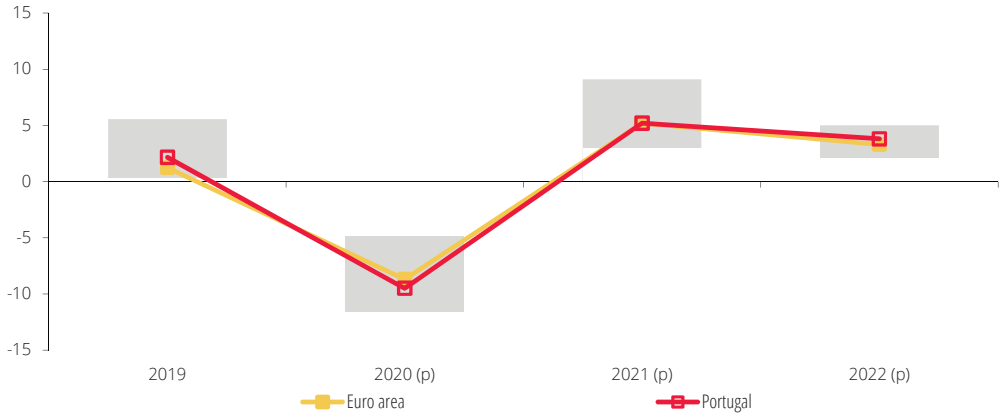
The underlying assumptions to the Eurosystem's exercise presume that the pandemic containment measures are relatively successful and gradually lifted. However, infections continue to occur and some measures will persist until the discovery of a vaccine or other effective treatment, presumed to take place in mid-2021. In a context of heightened uncertainty and insecurity, the recovery will be gradual and vary across sectors, being particularly slow in activities related with tourism, culture and entertainment. Economic impact is also influenced by political responses, which contribute partially to the differences in GDP developments across euro area countries (Chart I.3.2). The productive structure of the countries[6] and the stringency level of the containment measures adopted are other relevant factors to explain these differences (Chart I.3.3).

The magnitude and scope of the crisis will determine the intensity of the interruption in the accumulation of factors of production and in technological progress. This suggests the persistence of its effects, with a consequent reduction in the potential output of the economy. A destruction of installed productive capacity and job destruction are expected in all economies, but the financial situation of Portuguese firms is fragile given the reduction in liquidity as a result of the drop in activity associated with the pandemic.[7] In this context, the return of GDP to the path projected before the pandemic will be slow

6. In Portugal, tourism exports have a very significant weight in comparison with the euro area average. Based on balance of payments information, the weight of tourism exports on Portuguese GDP was approximately 8% in 2018, compared with about 3% in the euro area (based on a weighted average of weights for countries with available information). This contributes to a more significant and persistent impact of the pandemic on activity in Portugal.
7. See the Special issue entitled "The economic impact of the pandemic crisis", in the May 2020 issue of the *Economic Bulletin* of the Banco de Portugal.

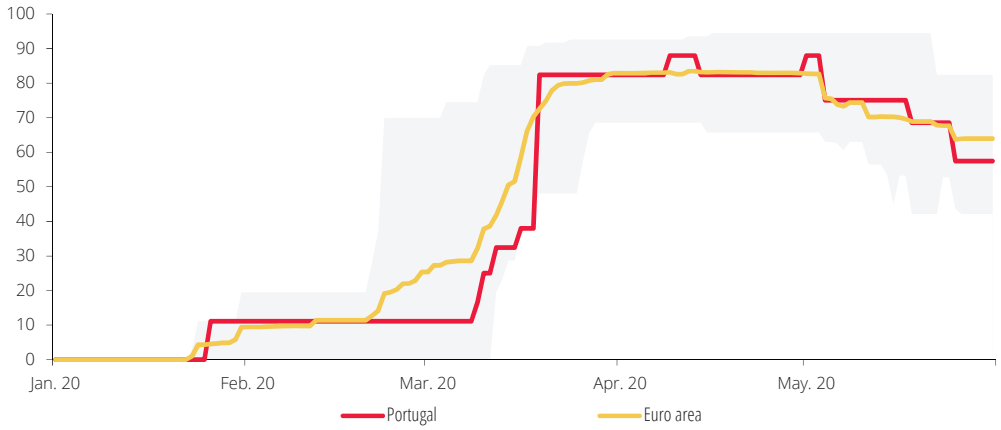
and incomplete. In fact, at the end of 2022 the level of economic activity is expected to be approximately 6% below a counterfactual level projected in the December 2019 issue of the *Economic Bulletin*.

Chart I.3.2 • GDP in Portugal and in the euro area | Annual rate of change in percentage



Sources: Eurosystem, Banco de Portugal and Statistics Portugal. | Note: (p) – projected. The shaded area marks the range between the maximum and minimum change in GDP of the euro area countries.

Chart I.3.3 • Indicator of stringency of containment measures in Portugal and in the euro area | Level



Sources: Eurostat and Thomas Hale, Sam Webster, Anna Petherick, Toby Phillips and Beatriz Kira (2020). Oxford COVID-19 Government Response Tracker. Blavatnik School of Government. Available at: www.bsg.ox.ac.uk/covidtracker. | Notes: The figures for the euro area are obtaStatistics Portugald as a weighted average of available indicators for Member States. The weights correspond to the weight of each country in the euro area total in 2018. The shaded area marks the range between the maximum and minimum for the euro area countries.

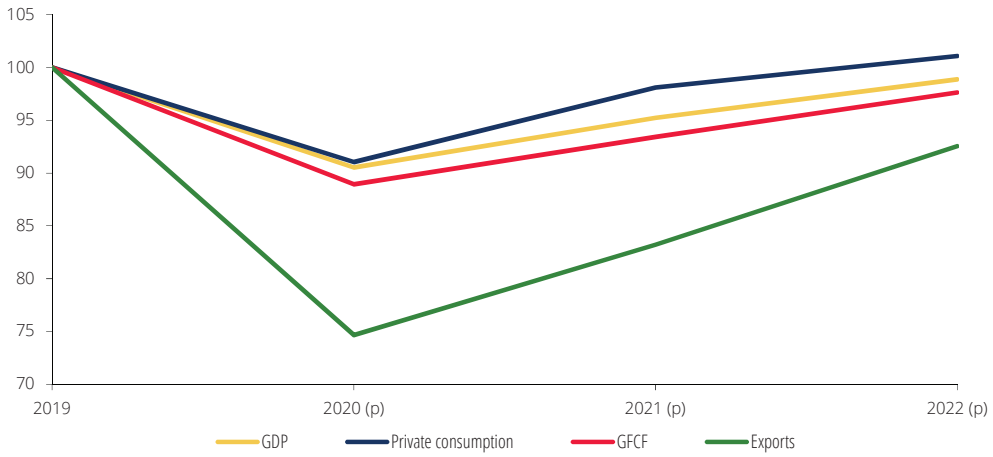
Very significant increase in the unemployment rate

Current projections point to a fall in employment of 4.5% in 2020. Despite this marked reduction, the impact of the contraction in activity on employment should be mitigated and slightly delayed considering the measures adopted, such as the simplified layoff. A recovery in employment is expected in 2021-22, which will however be insufficient to return to 2019 levels.

Against a background of a relatively unchanged labour force on average over the projection horizon, these developments should lead to an increase in the unemployment rate to levels slightly above

10% in 2020 and a progressive reduction to approximately 7.5% in 2022. Such developments in unemployment crucially hinge on the impact of measures to support firms and households and the duration of such measures, which are determinant in mitigating the destruction of installed capacity in the economy associated with the pandemic. The extension of these measures should help maintain activity and employment in firms considered viable, although in some cases it could lead to a delay in the exit from the market by uncompetitive firms, thus conditioning an endogenous process of economic activity. Furthermore, existing support measures are necessarily temporary and the adjustment margin they provide to firms does not alter the institutional framework governing the Portuguese labour market.

Chart I.3.4 • Developments in GDP and expenditure components | Index 2019=100



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

Greater fall in private consumption than in disposable income in 2020

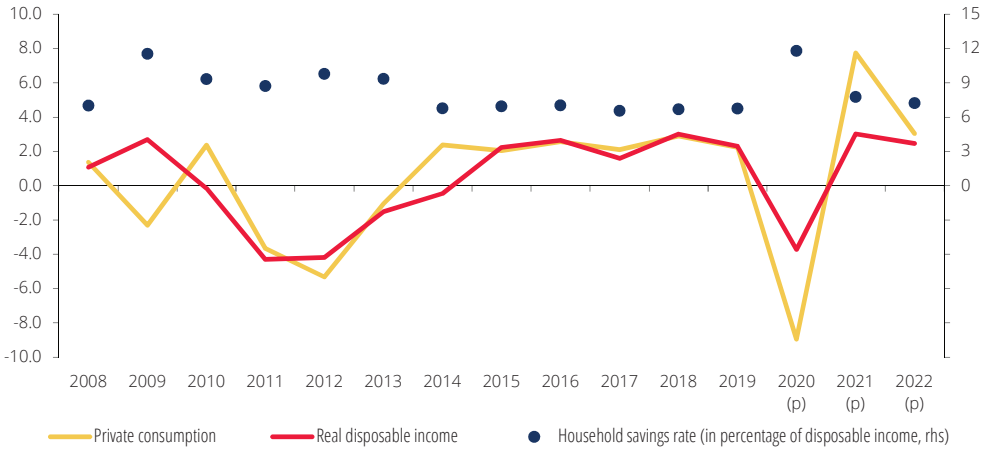
Private consumption is projected to fall by approximately 9% in 2020, which is more than forecast for real disposable income (Chart I.3.5). Households' real disposable income should decline in 2020, but such a reduction is mitigated by government measures, especially the support for job retention with the simplified layoff regime and income support for the self-employed (Section 2). The characteristics of the current crisis, namely the containment measures, the insecurity and heightened uncertainty are limiting the usual smoothed spending behaviour in response to income shocks.

In the short term, the constraints caused by the containment measures are predominant – especially the closure of the non-essential retail trade and the general lockdown – and lead to a forced increase in the savings rate. This effect is reinforced by greater uncertainty, causing an increase in precautionary saving, which should continue in the medium term. A significant increase in the savings rate is projected for 2020, to a level slightly above that reached during the 2009 financial crisis. In intra-annual terms, the peak savings rate should be reached in the second quarter of 2020, to values not seen since the early 1990s. Having reached a peak, there should be a gradual and partial reversal of the savings rate until the end of the projection horizon. This reduction in savings in 2021-22 – coupled with disposable income growth associated with a gradual improvement in the labour

market – should allow for a recovery in private consumption (to growth rates of 7.7% and 3% in 2021 and 2022 respectively).

The profile projected for developments in private consumption in 2020-22 is common to the durable goods and current consumption components. Expenditure on durable goods is expected to show greater volatility, as usual, being more conditioned by the effects of uncertainty, given the higher unit price of such purchases and the goods' longer lifetime. With the dissipation of uncertainty, the recovery of this component should also be stronger than the average for consumption, reflecting pent-up demand built-up in 2020.

Chart I.3.5 • Private consumption, disposable income and savings rate | Annual rate of change in percentage and level in percentage of disposable income



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

Rapid rebound of investment compared with previous cycles, following a significant fall in 2020

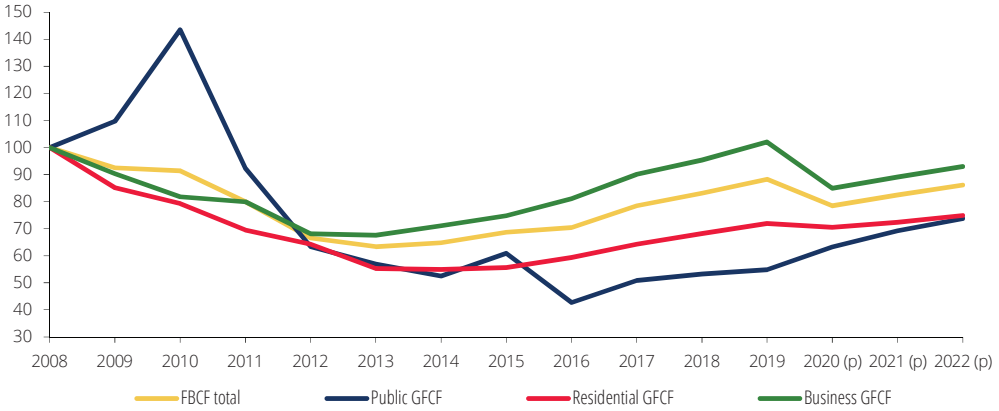
GFCF is expected to fall by about 11% in 2020. For 2021-22 average growth of total GFCF is projected to be around 5%, implying that this aggregate will reach the end of the projection horizon below its 2019 level. Nevertheless, the recovery projected should be faster than that which followed the two previous recessions, especially that seen following the sovereign debt crisis, reflecting the different behaviour of residential investment and public investment in the current environment (Chart I.3.6). Furthermore, the previous two crises brought about an increase in financing costs and a reduction in credit flows that particularly penalised the recovery of this expenditure aggregate.

The existing evidence suggests that GFCF in construction is being less affected by the effects of the pandemic (Box 1 and Box 2). The expectation is that the negative impact on residential GFCF is relatively contained against a background of continued favourable financing conditions and maintenance of some attractiveness of this type of asset for investing savings and in demand by non-residents. Public investment growth is expected to be dynamic, benefiting from the increase in European funds received, associated with the end of the current programming period, especially in 2020-21 (Section 2).

The effects of the current crisis will be more significant and persistent on corporate GFCF, which is expected to fall by approximately 17% in 2020. In the short term, some ongoing projects – including

investments co-financed by European funds – may yet sustain this GFCF component. However, the increase in uncertainty levels to historical highs (Chart I.3.7) – reflecting, inter alia, the uncertainty surrounding the duration of the pandemic and its impact on the outlook for domestic and external demand – will tend to significantly condition corporate investment decisions over a longer period. As activity gradually begins to normalise, corporate GFCF should recover, with annual rates of change close to 4.5% on average in 2021-22, although they will remain below the level observed in 2019 (Chart I.3.4).

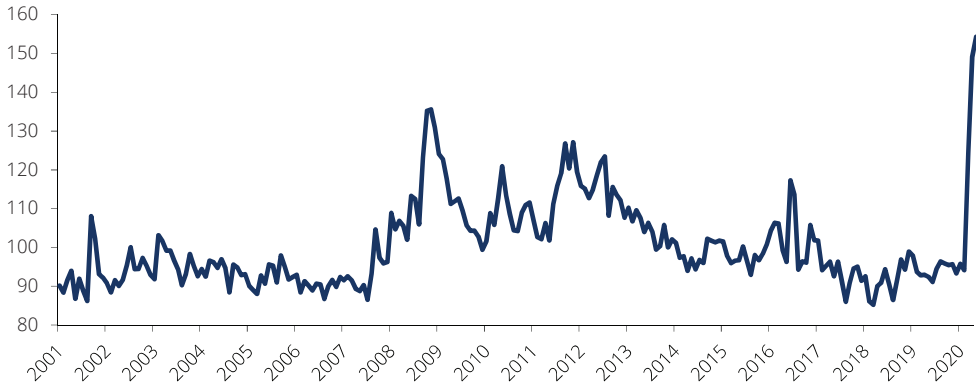
Chart I.3.6 • GFCF developments across institutional sectors | Index 2008=100



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

This projection assumes that government measures mitigate the impact of the shock on firms' financial position, avoiding a significant increase in bankruptcies and permitting relatively fast investment recovery. Likewise, the measures announced by the ECB should ensure that the credit standards for firms remain favourable, which will be reinforced by guarantees granted by the State (Section 2).

Chart I.3.7 • Synthetic indicator of uncertainty for the Portuguese economy | 100 = 2001-2019 average

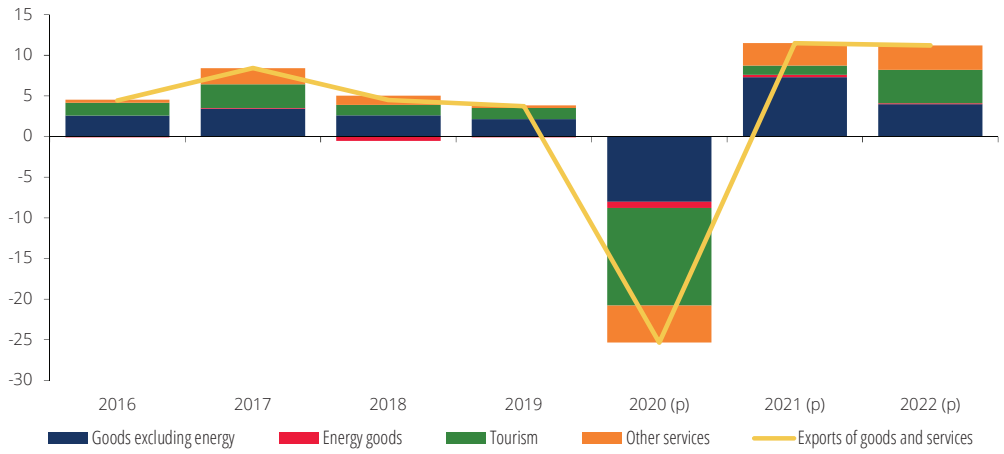


Source: Banco de Portugal. | Notes: For a more detailed description of these measures, see Manteu and Serra (2017), "Measures of uncertainty and their impact on the Portuguese economy", *Economic Research Review*, Vol. 3, No. 2, Banco de Portugal. Last observation May. In the case of the sub-indicator based on the recurrence in newspaper articles of terms related to uncertainty in economic policies, a value unchanged from April was assumed for May.

Significant and persistent impact of the pandemic on tourism exports

Projections for exports of goods and services point to an annual rate of change of approximately -25% in 2020, followed by growth slightly above 11% in 2021 and 2022.

Chart I.3.8 • Exports of goods and services | Annual rate of change in percentage and contributions in p.p.



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

Given the global nature of the pandemic crisis, external demand for Portuguese goods and services[8] should also fall significantly in 2020, followed by a recovery in the subsequent two years (Section 2). Developments in goods exports are expected to be generally in line with this indicator (Chart I.3.8). However, for services exports a much more accentuated drop is expected in 2020, reflecting the profile of the tourism component and other associated services exports. The specific constraints to travel created by the pandemic mean that the tourism sector has been particularly affected, with a drastic fall in international tourism flows expected in 2020.[9] The subsequent recovery should be very gradual, against a background of both high uncertainty and potential changes in the preferences and behaviours of consumers of such services, whilst also considering tourism's high income elasticity. Given the relatively considerable weight of tourism on total exports in comparison with other countries, Portugal is especially exposed, with a projected fall of this export component of over 60% in 2020.

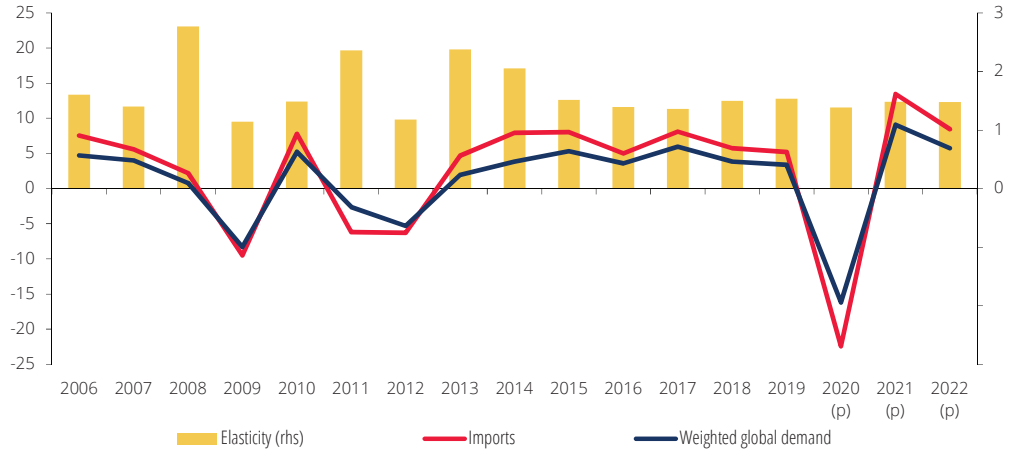
Considering developments in external demand, Portuguese exporters should lose external market share in 2020. This loss essentially reflects a composition effect associated with Portugal's relative specialisation in the tourism sector. The recovery of these exports is also expected to be slower, occurring more expressively only in 2022.

8. External demand for Portuguese goods and services is calculated as the weighted average of total imports of goods and services from the main destination markets for Portuguese exports.
9. According to the World Tourism Organization, the fall in the number of international tourists in 2020 should be approximately 60% to 80% (https://www.unwto.org/international-tourism-and-covid-19). Furthermore, the recovery of tourism indicators to 2019 levels may occur only in 2022 (OECD Tourism Policy Responses).

At the end of the projection horizon the level of real tourism exports is expected to be substantially lower than in 2019, implying that total exports of goods and services remain approximately 7% below the level for that reference year. Exports are the expenditure component with the most important contribution to the decline in economic activity in 2020 and will show the most persistent impact of the current crisis (Chart I.3.4).

Imports of goods and services are projected to follow a profile relatively close to that of exports, with a smaller yet very significant fall in 2020, followed by a recovery over the following two years, which will be insufficient to recover to the level registered in 2019. As usual, projections for imports of goods and services use the benchmark of developments in import-content weighted overall demand, considering that in the short term the elasticity between these aggregates may be lower than usual, in line with previous recessive periods (Chart I.3.9).

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



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

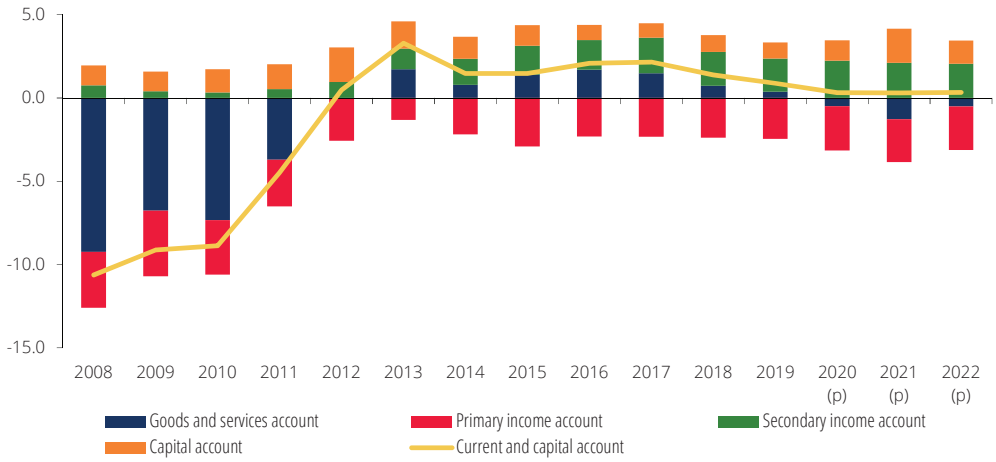
The economy's net lending capacity falls in 2020 and stabilises over the remainder of the projection horizon

The economy's net lending capacity, as measured by the combined current and capital account balances, should fall to 0.3% of GDP in 2020 (0.9% in 2019) and remain relatively unchanged during the period 2021-22 (Chart I.3.10). The goods and services account balance is expected to show a deficit in 2020. This reflects a negative volume effect, associated with a greater fall in exports compared to imports in real terms. In particular, this negative volume effect is a result of the services component, with an emphasis on tourism. This is partially offset by a positive terms of trade effect on the goods balance, resulting from the marked fall in oil prices. This results in a recomposition of the goods and services account balance towards a reduction in the goods deficit and a reduction in the services surplus, which should be partially reversed over the next two years.

The current and capital account balance as a percentage of GDP is expected to benefit in 2020 from the expected profile of transfers with the European Union, with an impact on the income and capital account balances. In the case of the primary income account balance, this effect is more than offset by the unfavourable developments in investment income already seen at the beginning of this year.

The income and capital account balances should remain relatively stable as a percentage of GDP in 2021-22, with the exception of a one-off effect on the capital account balance in 2021, as a result of the repayment by the European Financial Stability Facility of amounts paid by Portugal under the Economic and Financial Assistance Programme.

Chart I.3.10 • Current and capital account | In percentage of GDP



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

Inflation is expected to remain low, as a result of the downward effects of the pandemic crisis on prices

The response of prices to the pandemic crisis and subsequent recovery is very uncertain, reflecting the combination of shocks to both supply and demand that put opposing pressures on prices, as well as differentiated sectoral impacts. The supply limitations resulting from manufacturing interruptions, the lack of availability of certain services and disruptions to trade and transport may translate into temporary price increases. However, the crisis implies a strong decrease in demand, whose downward effects on prices should prevail.

Recent developments in inflation already provide evidence of some of these effects. In March and April the year-on-year rate of change in the Harmonised Index of Consumer Prices (HICP) was near zero, with emphasis on the significant drop in energy prices in April (-9.7% year-on-year) and, conversely, the acceleration in food prices, especially unprocessed food, which increased by 7.5%.

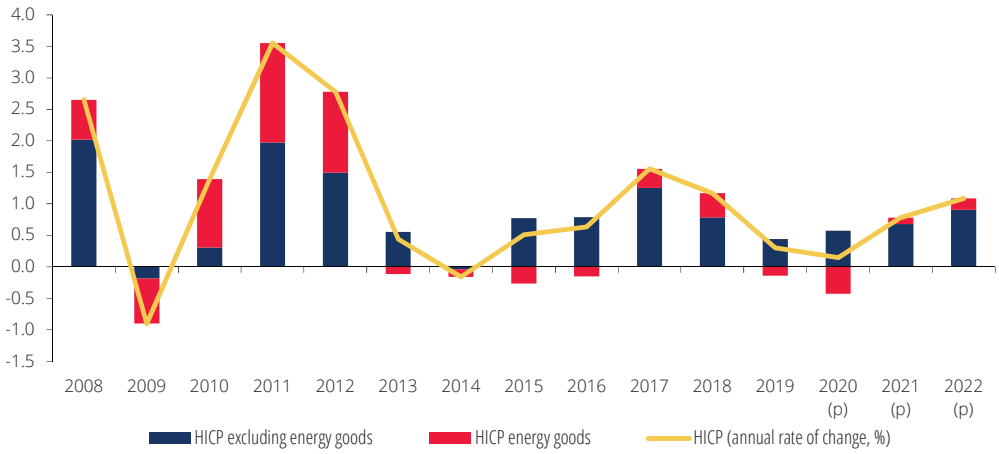
For the year 2020 as a whole, HICP price levels are expected to stabilise (annual rate of change of 0.1%, compared to 0.3% in 2019). This development reflects a significant drop in energy prices – resulting from the fall in international oil prices – and contained growth in other goods and services (Chart I.3.11). As far as the non-energy component is concerned, there is a positive base effect in 2020 resulting from the dissipation of the negative impact of certain specific measures on inflation in 2019.[10]

10. In 2019 a set of legislative amendments were reflected in falls in prices of certain goods and services, namely the reduction in the price of public transport monthly cards within the scope of the programme supporting tariff reduction, the imposition of price limits on communications to the European Union and, with the extension of the right to free school books to secondary education, the reduction in prices for school books.

In 2021 and 2022 inflation should present a very moderate rising profile, with rates of change projected to be 0.8% in 2021 and 1.1% in 2022. At external level, the technical assumptions point to a gradual acceleration in non-energy import prices. Oil price developments also suggest a modest increase in energy prices (Section 2). The gradual improvement projected for economic activity and the labour market should also contribute to the moderate increase in inflation.

According to Eurosystem projections, euro area inflation will also decline in 2020 (0.3% compared to 1.2% in 2019) and rise over the remainder of the projection horizon, reaching 1.3% in 2022, thus remaining below the price stability objective.[11] Low inflation rates in Portugal and in the euro area may prove to be longer-lasting if there are repercussions on inflation expectations. In contrast, the crisis may trigger a structural transformation process and regression of increasing globalisation trend observed over the last few decades, with a predominantly upward impact on prices.

Chart I.3.11 • Contributions to the annual rate of change of the HICP | Percentage points and percentage



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

4 Conclusion

This *Economic Bulletin* seeks to assess the impact of the pandemic crisis on the Portuguese economy at the present time and to project its future developments. Although several complementary analyses have been made, this is a difficult task, surrounded by great uncertainty, especially because this crisis has no recent precedent. While the crisis is projected to be short, its effects are expected to be persistent as a result of impacts on the accumulation of physical and human capital, and they strongly depend on the international environment eventually observed.

11. The price stability objective is currently defined by the European Central Bank as the maintenance of inflation at levels below, but close to, 2%. For a discussion of the monetary policy review launched by the ECB in January 2020, see the Special issue entitled "The ECB's monetary policy strategy: reasons for a review" in this *Economic Bulletin*.

Despite other pandemic crises that have already occurred in the past, strong globalisation and the integration of economies leed to very different current circumstances. The organisation of production in complex global value chains means that the interruption of activity in regions or countries that are central to the production of intermediate products echo and extend worldwide. In this context, strengthening the resilience of the global economy requires supra-national coordination of economic policies and entails an adjustment of global production chains by enterprises. However, these processes should not serve as a basis for the adoption of protectionist measures that imply a reduction in the welfare gains inherent to international trade in goods and services.

A scenario of greater resilience and stability in international economic relations is also essential to reducing the likelihood of further crises, particularly financial crises. As already observed in the past, this type of disturbances has a strong disruptive potential, affecting the financing costs of households, enterprises and States, which interact with the banking system's situation and have an impact on economic activity. In this context, international macroeconomic cooperation and the stabilising action of central banks are also essential.

Finally, in terms of the European economic framework, it is important to limit the potential negative impacts on real convergence associated with an expected asymmetric recovery, conditioned by the productive structures of the countries and pre-existing structural imbalances. In addition to the investment efforts announced, which remain aligned with sustainability concerns, the crisis recovery process at the European level will have as a desirable result the strengthening of the institutional mechanisms essential to the deepening of the Economic and Monetary Union.

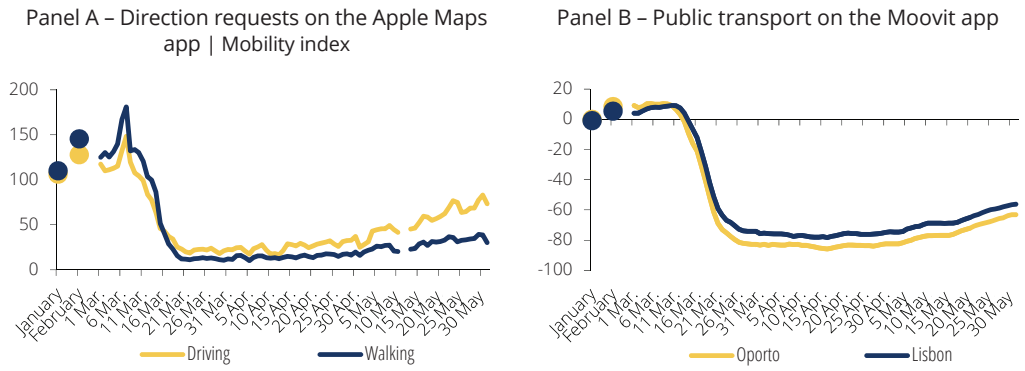
The Portuguese economy is fully integrated into this European and international context, but the need to adjust policies to the specificities of the productive sector and collective choices is always present.

Box 1 • Developments in economic activity in Portugal since early March

The recent evolution of the Portuguese economy has been strongly affected by developments in the COVID-19 pandemic and the measures required to contain it. This led to a sudden and sharp drop in activity at the end of the first quarter and to a profound deterioration in confidence and a significant increase in uncertainty. The purpose of this box is to characterise the evolution of the Portuguese economy between March and May 2020, by using the usual economic statistics and a set of higher frequency indicators that allow for a timely assessment of the effects of the outbreak.

The first cases of the novel coronavirus were reported in China in December 2019, but the outbreak quickly spread to the whole world. The COVID-19 pandemic was reported in Portugal on 2 March 2020, the date on which the first coronavirus cases were confirmed. Measures to contain the spread of the disease were quickly adopted, the most relevant being the closure of schools and universities, on 16 March, and the declaration of a state of emergency on 18 March, with only 642 cases confirmed. The state of emergency lasted until the beginning of May and resulted in restrictions to people's mobility within the country and across borders, the temporary closures of a number of economic activities[12] and the imposition of a lockdown. Since 3 May, with the transition to the disaster situation,[13] the containment measures have been gradually lifted, allowing for a progressive and incremental reopening of the economic activity, a process that is expected to continue over the coming months. The impact of those measures is visible in some mobility indicators, which recorded a steep fall from mid-March onwards, a stabilisation at extremely low levels in April and a very moderate recovery in May (Chart C1.1).

Chart C1.1 • Mobility indicators in Portugal – January to May 2020 | Change *vis-à-vis* the reference period



Sources: Apple and Moovit. | Note: Panel A: Index 13 January = 100; no information was collected for the 11th and 12th of May. Panel B: percentual change *vis-à-vis* the reference value for January 15.

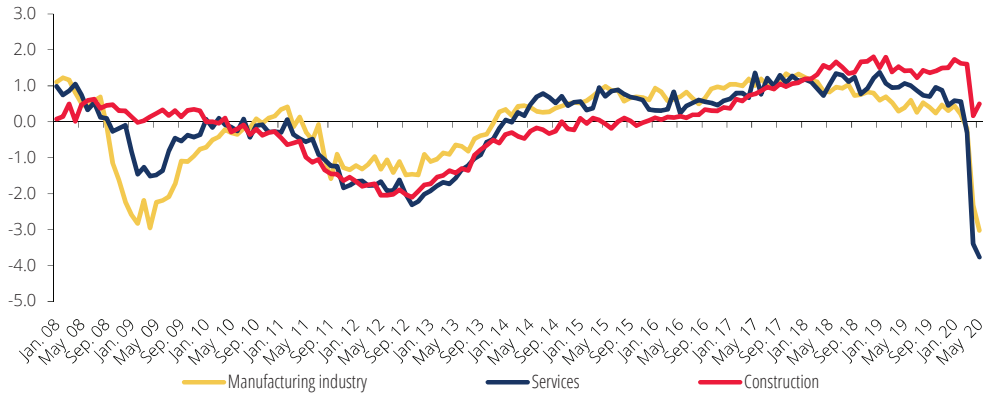
Supply and demand constraints associated with pandemic developments and containment measures had a strong impact on confidence among economic agents. In March, confidence fell in various sectors, and in April it reached or approached historic lows. The exception is the construction sector, where confidence, although dropping, remained at levels close to the average of the last ten years (Chart C1.2). In industry and services, the drop in confidence in April was broadly based across

12. During the state of emergency, the temporary suspension of a wide range of service activities, both public and private, was enacted. In particular, most commercial establishments were closed, with the exception of those selling essential goods (such as supermarkets), food services (take-away and home delivery services only), most recreational, cultural and sporting activities and events (such as bars, discos, gyms, cinemas, theatres, sporting games), as well as religious events. For more details, see Decree-law No. 2-A/2020, of 20 March.

13. See Resolution of the Council of Ministers No. 33-A/2020, of 30 April 2020.

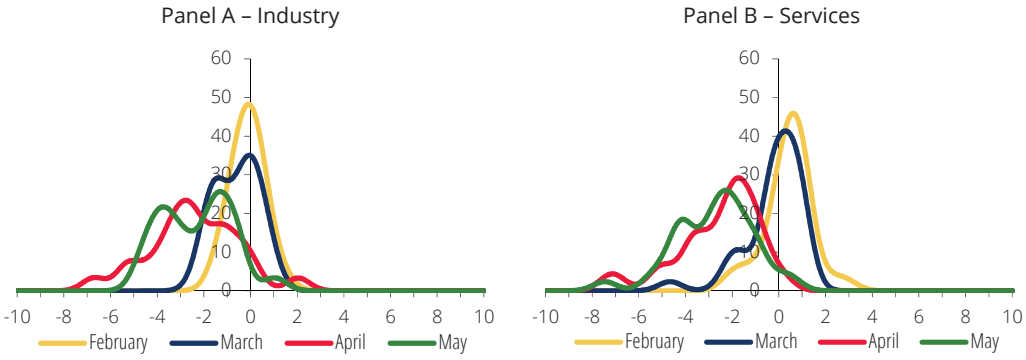
the various sub-sectors (Chart C1.3). In May confidence indicators in industry and services declined further, reflecting a more negative assessment on backward-looking questions, while on forward-looking questions there was an improvement. The information provided by confidence indicators, of a significant drop in activity in April, with a very limited recovery in May, is confirmed by the results of the Fast and Exceptional Enterprise Survey – COVID-19 (COVID-IREE) launched by Statistics Portugal and Banco de Portugal (Box 2).

Chart C1.2 • Confidence indicators by sectors | Standardized values



Source: European Commission (Banco de Portugal calculations). | Note: In standardization it was used the average and standard-deviation in the period 2008-2019.

Chart C1.3 • Distribution of sub-sectors confidence indicators in industry and services – February to March 2020



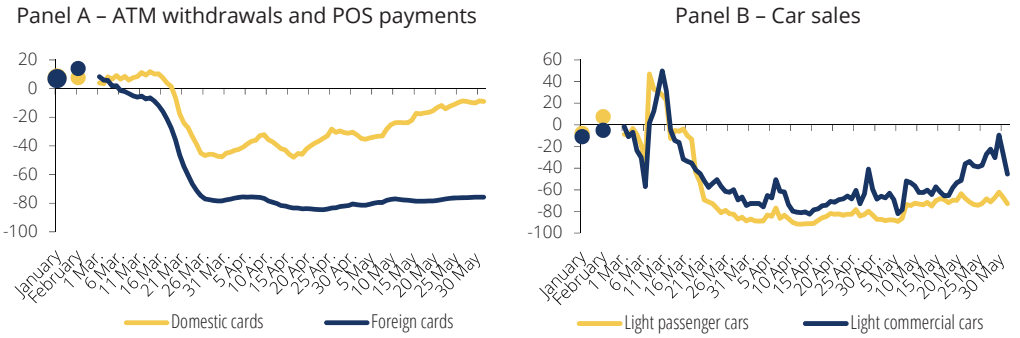
Source: European Commission (Banco de Portugal calculations). | Note: Kernel density estimation is a non-parametric way of estimating the probability density function of a variable, being preferable to histograms for smoothing the distribution (a smoothing parameter equal to 0.5 was used). The results show the distribution of sub-sector results (24 and 34 sub-sectors, respectively in industry and services) standardized considering the last 10 years.

The consumer confidence indicator fell sharply in March and particularly in April. This deterioration in sentiment was broadly based across the various consumer groups, by age group and income bracket.[14] In May consumer confidence recovered slightly. The high frequency quantitative indicators point to a significant reduction in household spending from March onwards, particularly the second

14. The information disaggregated by consumer characteristics can be found at https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys/download-business-and-consumer-survey-data/time-series_en.

half of the month, which contrasts with a globally favourable evolution in January and February. Consumption by resident households seems to have remained at extremely low levels in the first half of April, with indicators pointing to a recovery from mid-April and extended over May (Chart C1.4). In monthly average terms, the year-on-year growth rate of withdrawals and payments at ATM and POS terminals with domestic cards stood at -16.3% in March and -36.1% in April. In May, the year-on-year reduction was around 20% (Table C1.1). Expenditure on durable goods is likely to have been particularly affected, with sales of light passenger vehicles showing levels below those observed in the same period of the previous year by about 80-90% in the second half of March and throughout April (Chart C1.4). In May, these sales recorded a less negative but still very sharp variation.

Chart C1.4 • Expenditure indicators – January to May 2020 | Year-on-year rates of change, in percentage



Sources: SIBS and ACAP. | Note: Daily data are moving averages of 7 days.

Table C1.1 • Daily frequency indicators of economic activity between January and May 2020 | Year-on-year rates of change, in percentage (except where otherwise stated)

	January	February	March	Second half of March	April	May
Apple Mobility Trends Reports – % change vis-à-vis the 13th January value						
Driving	7.0	28.9	-37.2	-74.0	-73.9	-44.4
Walking	10.2	49.1	-31.9	-82.1	-85.0	-71.2
Use of public transports – % change vis-à-vis the 15th January value						
Oporto	-0.1	8.4	-32.1	-67.2	-83.7	-73.9
Lisbon	-1.0	5.4	-27.4	-58.2	-76.5	-66.4
Daily Lisbon airport flights – average daily number			162	78	7	11
ATM withdrawals and POS payments – domestic cards	8.1	11.7	-16.3	-36.9	-36.1	-19.5
ATM withdrawals and POS payments – foreign cards	6.8	14.0	-40.3	-69.9	-81.0	-77.9
Sales of light passenger cars	-8.0	7.4	-57.4	-79.1	-87.0	-74.7
Sales of light commercial cars	-11.0	-5.2	-51.2	-61.3	-69.9	-51.3

Sources: Apple, ACAP, Moovit, SIBS, Flightradar and Banco de Portugal. | Notes: The data presented are not adjusted for seasonality or calendar effects. The mobility indicators from Apple and Moovit (public transport) refer to searches in the respective applications.

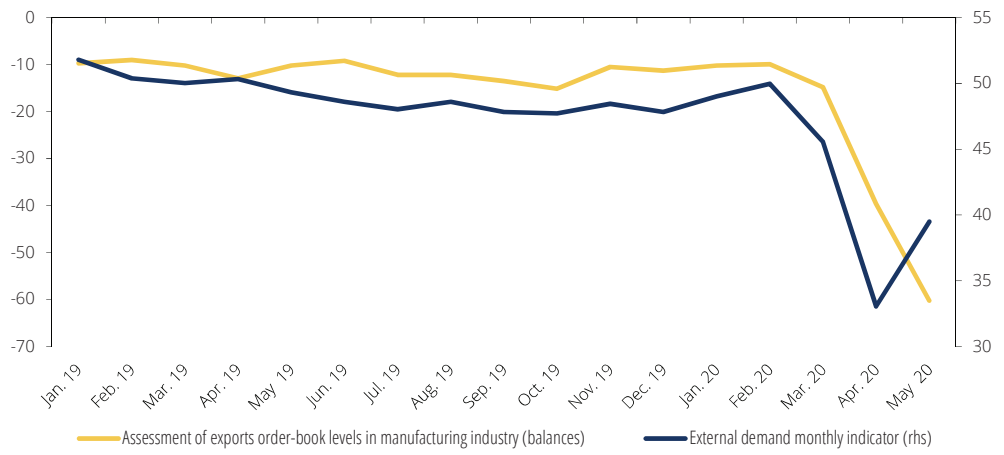
Investment indicators are scarcer, suggesting however a heterogeneous behaviour of the main components. On the one hand, investment in construction seems to have maintained some momentum. Cement sales increased by about 7% in March and more than 10% in April,[15] suggesting

15. The rates of change shown are calculated on the basis of seasonally and calendar adjusted cement sales figures.

that undergoing construction works continued. The construction sector seems to have been relatively less affected by containment measures in force in this period, as also evidenced by the evolution of confidence and the COVID-IREE results (Box 2). In contrast, investment in machinery and transport equipment seems to have declined in the period under review, in line with general economic activity.[16] In particular, the sales of light commercial vehicles in the second half of March and in April were around 60-70% below the levels reported in the same period of the previous year. The decrease in the year-on-year rate of change was mitigated in May (to about 50%).

The evolution of total exports in the period under review seems to have been affected by a rather negative contribution of the tourism component. Evidence of an unprecedented drop in this component is given by the amount of transactions at ATMs and POS terminals with foreign cards, which declined steadily from mid-March onwards, remaining at levels around 80% lower than normal in April and May (Chart C1.4). The number of flights at the main domestic airport presents a similar profile (Table C1.1). With regard to goods exports, following a huge drop in March, external demand indicators point to even more negative developments in April and May (Chart C1.5).

Chart C1.5 • External demand indicators | Balances and diffusion indices



Sources: European Commission and IHS Markit. | Note: The monthly external demand indicator was calculated by weighting the Purchasing Managers' Index in the manufacturing industry of 13 Portuguese trading partners by its weight in Portuguese exports of goods.

Overall, most indicators available for May point to a still very moderate recovery in activity from the extremely low levels recorded in April. This information suggests that the impact of the pandemic will be quite severe in the second quarter as a whole, with GDP expected to fall much more than in the first quarter, with no precedent in quarterly national accounts series (available since 1977).

16. In March (latest information available), the GFCF indicator in machinery recorded a 25% year-on-year fall.

Box 2 • Impact of the pandemic on Portuguese enterprises – analysis based on the results of the COVID-IREE

The economic impact of the coronavirus outbreak is difficult to quantify, given its unprecedented nature. With the aim of identifying, in a timely manner, the impact of the pandemic on the activity of non-financial corporations, Statistics Portugal and the Banco de Portugal launched in early April a high-frequency survey addressed to Portuguese firms, called the Fast and Exceptional Enterprise Survey – COVID-19 (COVID-IREE).[17] Statistics Portugal and the Banco de Portugal are grateful for the co-operation of enterprises, which has been instrumental in obtaining relevant information in this context, including for the implementation of appropriate public policies.

This box presents an estimate for the impact of the pandemic on the activity of enterprises based on the results of this survey, in particular the responses to questions related to developments in turnover and persons employed effectively working.[18,19] The sample of enterprises surveyed in the COVID-IREE (about 8,880 firms) is representative of the turnover in the sectors of activity covered, with a response rate above 60% on average during April and May (this rate exceeds 75%, when the answers are weighted by the turnover of the responding enterprises).[20] The analysis in this box illustrates the situation reported by responding enterprises and is undertaken at the sectoral level, focusing on the months of April and May.

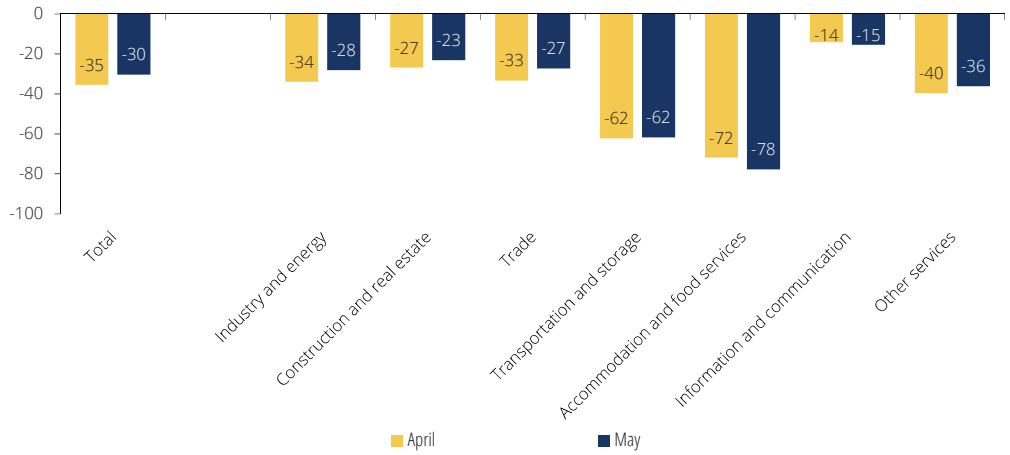
Key findings indicate that enterprises' turnover in April – the period of the state of emergency – was about 35% below the level expected without a pandemic, in the set of sectors covered by COVID-IREE.[21,22] In May – when the state of emergency ceased and the containment measures began to be lifted – the results suggest a very slight improvement, with enterprises' activity declining by 30% compared to a normal situation.

Restrictions during the state of emergency, in particular the shutdown of establishments open to the public and constraints to people's movements and travel, resulted in significant falls in enterprises' turnover in April, across the various sectors (Chart C2.1). The results show that more than half of the drop in activity during this period was associated with Trade, Transportation, Accommodation and food services, and Other services. The sectors most directly affected by the pandemic containment measures were: Accommodation and food services and Transportation and storage (in particular, Air transport), with reductions of 70% and 60%, respectively (however, the contribution of these sectors to the total change is relatively small). In the Trade sector, where turnover is estimated to have been 33% below normal in April, the greatest impact on the retail trade of non-essential

17. The survey started in the week of April 6-10, and during that month it was conducted on a weekly basis (4 weeks of results). In May, the survey was conducted every two weeks.
18. The enterprises responses to the COVID-IREE were weighted by their turnover in matters related to the evolution of this indicator and by the number of persons employed in questions associated with effectively working staff.
19. The option was to aggregate the weekly (or fortnightly) results using a simple average of responses collected every month. A sensitivity analysis, considering all enterprises that responded at least once to the survey, confirms the results reported. Additionally, the results of the COVID-IREE are, in general, corroborated by other types of information (reports from business associations, information from large enterprises, confidence indicators).
20. Weighting by the number of persons employed, the response rate averaged 66%. Considering all the enterprises that responded at least once to the COVID-IREE, the response rate reached 86% in number of enterprises, 93% weighted by turnover and 89% weighted by the number of persons employed.
21. In terms of turnover, the weights of the sectors of activity in the sample of surveyed enterprises are: Industry and energy, 40%, Trade, 36%, Transportation and storage, 6%, Construction and real estate activities, 4%, Information and communication, 4%, Accommodation and food services, 2% and Other services, 8%. These weights are maintained if we consider only the set of respondent enterprises.
22. Specifically, the COVID-IREE does not cover the following sectors: Agriculture, forestry and fishing (Section A of the CAE (the Portuguese acronym for economic activity classification), rev.3), Financial and insurance activities (Section K of the CAE rev.3), Public administration and defence (Section O of the CAE rev.3), Activities of households as employers of domestic workers (Section T of the CAE rev.3) and Activities of international organisations and other extraterritorial institutions (Section U of CAE rev.3).

goods[23] and on the trade and repair of motor vehicles stands out. According to the survey, these developments in the Trade sector seem to have mainly reflected the restrictions in the state of emergency and the resulting fall in demand, as well as some problems in the supply chain. Finally, in the Other services sector, the drop in turnover stood around 40%, but exceeded 70% in artistic, entertainment and recreational activities and 50% in human health activities.

Chart C2.1 • Impact of the COVID-19 pandemic on enterprises' turnover, by sector | Percentage change *vis-à-vis* a scenario without the pandemic



Sources: Banco de Portugal and Statistics Portugal (COVID-IREE). | Notes: The results are based on the survey responses to the question regarding the impact of the COVID-19 pandemic on turnover. For each enterprise, the mid-point of the reported interval was considered. Additionally, a -100% change was assumed for enterprises that reported being definitely closed. For each week, responses were aggregated based on each enterprise's turnover. Monthly results correspond to the simple average of the weekly aggregate responses.

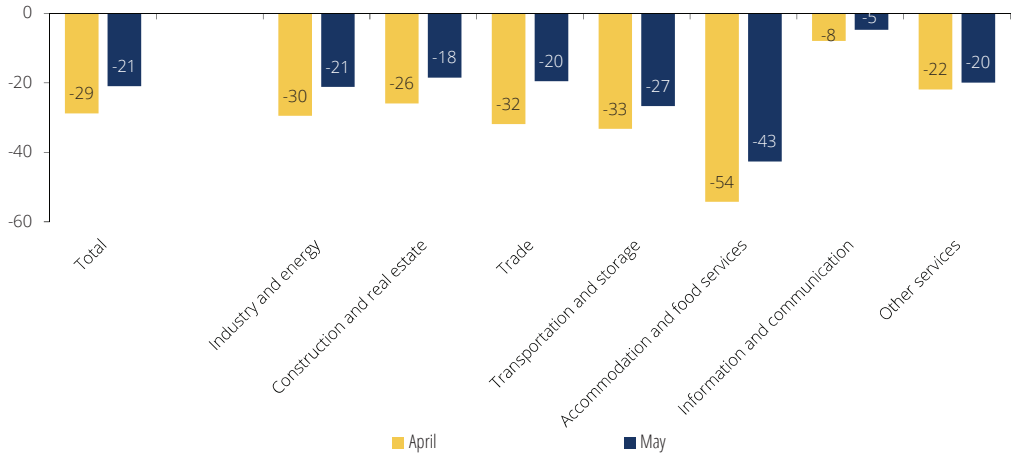
In the Industry and energy sector, turnover decreased 34%, close to the average loss of activity in the sectors covered by the COVID-IREE. This reduction was more significant in the manufacturing industry, where activity stood at around 60% of the normal level, mainly reflecting falls in the manufacture of transport equipment, the production of energy goods and the textile and footwear industry. In contrast, the pharmaceutical industry stands out for its negligible reduction. In addition to the restrictions in the context of the state of emergency, the negative evolution of industrial activity is explained by the reduction in domestic and foreign demand and, to a lesser extent, by supply problems, reflecting likely disruptions in global value chains.

The impact of the pandemic and the state of emergency seems to have been less significant in some sectors, notably in Construction and real estate activities, where activity remained at about 75% of the normal level, and the Information and communication sector, where turnover in April was close to 85% of the normal level. The less negative evolution of the latter sector reflected the contribution of the Telecommunications branch, where turnover dropped by about 8%.

23. Food products, pharmaceutical and hygiene products, and fuels were considered as essential goods.

The containment measures adopted during the state of emergency had also a negative impact on effectively working staff, with an estimated 29% decrease from the normal level for the total sectors covered (Chart C2.2). At sectoral level, reductions in effectively working staff are largely consistent with the declines in activity, although of a lesser magnitude. In the responses to the COVID-IREE, this evolution is often associated with the use of the simplified layoff, a support measure created by the Government in the context of the pandemic, which mitigates the risk of firms' closures and redundancies up against such a shock. The use of this measure has been particularly significant in Accommodation and food services, where effectively working staff was cut to less than half. On the contrary, in Information and communication and in Construction and real estate activities, staff cuts were smaller, and enterprises appear to have made less use of this support measure. Absences, under the state of emergency, due to illness or support to the family, were a further reason for reductions in persons employed effectively working during the month of April. In the context of the pandemic, the use of teleworking has made it possible to limit reductions in effectively working staff. According to survey results, about 30% of effectively working staff of the responding enterprises were in this situation in April.[24]

Chart C2.2 • Impact of the COVID-19 pandemic on enterprises' effectively working staff, by sector | Percentage change *vis-à-vis* a scenario without the pandemic



Sources: Banco de Portugal and Statistics Portugal (COVID-IREE). | Notes: The results are based on the survey responses to the question regarding the impact of the COVID-19 pandemic on the number of persons employed effectively working. For each enterprise, the mid-point of the reported interval was considered. Additionally, a -100% change was assumed for enterprises that reported being definitely closed. For each week, responses were aggregated based on each enterprise's number of persons employed. Monthly results correspond to the simple average of the weekly aggregate responses.

During the month of May, the gradual lifting of the containment measures started, including the lifting of restrictions on the operation of some economic activities.[25] The evidence gathered points to a very gradual rebound of the economic activity in the various sectors of activity (Chart C2.1). In this period, the improvement seems to be more remarkable in the Industry and energy (in particular,

24. The question concerning teleworking was raised in the last week of April and allows to quantify approximately the percentage of workers in this situation. The estimate presented was obtained by weighting the midpoint of the interval reported by enterprises by the number of persons employed effectively working.

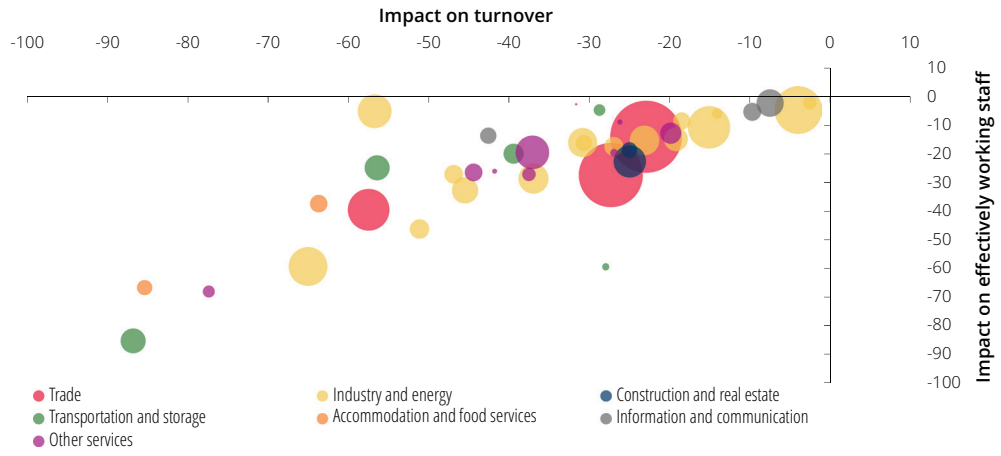
25. Shopping areas (first the smaller ones and in the second half of May the medium-sized ones), some non-essential services and restaurants (previously limited to take-away/home delivery) were able to resume their activity with limitations on space capacity and compliance with other requirements.

in sectors linked to the production of energy goods and transport material) and Trade sectors. In contrast, recovery is not yet visible and may be slower in some sectors – namely those with sharper falls during the state of emergency and where active restrictions still remain in place – with particular emphasis on air transport, accommodation and food services and those related to artistic and recreational activities.

As regards effectively working staff, the signs of recovery are more perceptible and generalised in the various sectors covered by the survey (Chart C2.2). As would be expected – in the post-state of emergency period, the Government allowed the phased reopening of wholesale and retail businesses and restaurants – the most significant improvement occurred in the Trade and Accommodation and food services sectors (despite this development, effectively working staff in this sector in May still remained at levels close to 60% of normal).

The analysis presented points out that the negative shock of the COVID-19 pandemic has reached the various sectors of activity in a differentiated manner, with a high sectoral dispersion (Chart C2.3). This characteristic (slightly more evident in April than in May) reflects, as previously described, the different ways in which the containment measures affected the various sectors. The results also suggest a strong relationship between activity and employment, with the most affected sectors recording the steeper falls in both turnover and effectively working staff.

Chart C2.3 • Relationship between the impacts of the COVID-19 pandemic on enterprises' turnover and on effectively working staff, by sector | Percentage change *vis-à-vis* a scenario without the pandemic (average of April and May)



Sources: Banco de Portugal and Statistics Portugal (COVID-IREE). | Notes: Each sector was divided in the respective A38 branches of activity, except for Trade, Transportation and storage and Accommodation and food services, for which the A82 branches were considered. Each circle size represents the weight of corresponding branch in the total turnover of responding enterprises. The results are based on the survey responses to the questions regarding the impacts of the COVID-19 pandemic on turnover and on effectively working staff. For each week, responses were aggregated based on each enterprise's turnover/ number of persons employed. Monthly results correspond to the simple average of the weekly aggregate responses.

At a time when the information available for the second quarter of 2020 is still very scarce, the results presented in this box are quite relevant for the analysis and understanding of the impact of the pandemic on the Portuguese economy. However, some caveats should be considered. First, the estimates presented are subject to some inaccuracy as they are based on the midpoint of the range reported by enterprises. Additionally, part of the non-response to COVID-IREE may reflect

enterprises that shut down, which would worsen the results presented.[26] Finally, the information collected does not allow for extrapolation to the total economy since the analysis does not cover all sectors. In particular, the public sector, the financial sector and the agriculture and fishing sector are missing and the impact of the pandemic in these sectors was likely less deep.

In conclusion, the evidence gathered in this box points to a highly negative economic impact of the COVID-19 pandemic, which will be reflected in a very significant drop in the economic activity in the second quarter of 2020. Despite the improvement profile started in May, the uncertainty is still elevated regarding the evolution and duration of the measures to contain the pandemic and their impact on Portuguese enterprises. In this sense, the results of the COVID-IREE will continue to be an important piece of information in the timely monitoring of business activity developments.

26. According to the technical note included in the press release of COVID-IREE, a more significant probability of non-response was detected in micro and small enterprises.

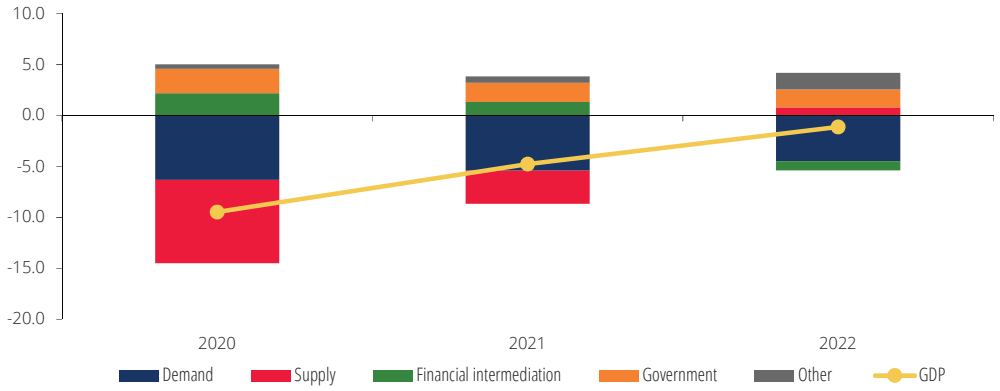
Box 3 • A general equilibrium view on GDP projections

This box identifies the macroeconomic determinants underlying the projections published in this *Economic Bulletin*, namely regarding GDP developments in the period 2020-22, in the light of the general equilibrium PESSOA model. This model, designed and estimated for the Portuguese economy, allows for an identification of the factors associated with the sharp fall in activity in 2020 and partial recovery in subsequent years, strongly determined by the effects of the COVID-19 pandemic.

General equilibrium models have played an increasing role in the set of instruments of analysis of the main international institutions.[27] In the PESSOA model, optimising agents – firms and households – interact with each other in the markets, leading the economy to an equilibrium between demand and supply at each moment of time. This equilibrium is disturbed by forces exogenous to the model – the determinants – which, considering some key features, are aggregated in this box into five categories: supply, demand, government, financial intermediation and, finally, a residual aggregate. A determinant belongs to the supply category if production is directly affected, although it may also have demand effects due to the link between production and income. Similarly, a determinant classified as demand can give rise to supply side effects as firms adapt production to market conditions. Government corresponds to the general government sector in the National Accounts and the associated aggregate encompasses the fiscal policy contained in the model, including public consumption and investment, while the financial intermediation category is related to credit availability and developments in interest rate differentials.

Chart C3.1 shows the decomposition of real GDP in the period 2020-22, measured against the level recorded in 2019. This decomposition was computed, firstly, by introducing 24 macroeconomic series published in this Bulletin into the PESSOA model, including GDP. Secondly, the structural relationships of the estimated model were used to identify the combination of determinants underlying these projections. Finally, the contributions of each determinant were aggregated using the five categories mentioned above.

Chart C3.1 • GDP | Deviations from the 2019 level in percentage and contributions in percentage points



Source: Banco de Portugal. | Notes: The aggregate identified as "Supply" is driven primarily by the common factor shared by both Portugal and the euro area, which corresponds to temporary shocks on the growth rate of technology.

27. Estimation details can be found in Júlio, P. and J. Maria (2017), "The Portuguese post-2008 period: a narrative from an estimated DSGE model", *Working Paper* 15, Banco de Portugal. For a similar exercise on the decomposition of the euro area GDP growth rate see "How the pandemic shaped the forecast" European Commission (2020), *European Economic Forecast*, Spring, p.65-72.

The results obtained suggest that the decrease in GDP in 2020 is mainly driven by disturbances originating from both supply and demand. Among the shocks aggregated in the supply side, the fall in global productivity – a common factor shared by Portugal and the euro area – should be highlighted, reflecting the global nature of the pandemic. This factor captures situations such as the partial or total closure of firms and forced shutdown of economic activity at the global level, the virtual impossibility of producing certain types of goods and services (especially tourism services), or of maintaining global efficiency levels prior to the crisis situation (affecting both labour and capital), as well as the strong disruption of production processes. The fall in this common factor, unparalleled in history, triggers a strong reduction in production and consequently a sharp reduction in household wealth and corporate profits. Endogenously, consumption and investment levels are also affected, with negative consequences on labour demand and capital accumulation. Although it is a supply shock, the effect on demand via income is quite important.

The recessive effects associated with the above common factor are partially offset by the positive contribution in 2020 of a substitution effect between imports and domestic production. This component of the supply aggregate reflects the very sharp fall in imports of goods and services, which exceeds the import content usually used in the production of final goods.

On the demand side, the negative disturbance on the demand for domestic goods and services by external agents should be highlighted. This disturbance determines, to a large extent, highly negative developments in exports, in particular exports of services associated with tourism – which have a relatively high weight in Portuguese exports. The fall in this determinant is much larger than the one registered in 2008, amid a world trade collapse.

Chart C3.1 shows a positive contribution of the government aggregate to GDP developments in 2020, partially offsetting the other recessive effects. The financial intermediation category also makes a positive contribution, suggesting that the current projections for the Portuguese economy do not envisage an increase in the financial restrictions in which firms will operate. On the contrary, developments in the differential between interest rates on credit to non-financial corporations and the three-month EURIBOR, as well as bank credit, are assumed to remain broadly favourable. This trajectory is largely associated with the monetary accommodation measures adopted by the ECB.

In 2021-22 the recovery of GDP included in the projections of this *Economic Bulletin* mainly reflects a clearly less recessive contribution of supply factors, namely due to developments in global productivity, suggesting a gradual normalisation of production on a global scale. It is also worth stressing the successively less recessive contribution of the shock affecting the demand for domestic goods and services by external agents, indicating nevertheless that the recovery of the domestic export sector will be progressive and that the operating conditions of international trade, prior to the crisis, will not be restored immediately. The recovery of Portuguese exports in the current projections is highly conditioned by tourism exports, which will be particularly and persistently affected by the pandemic crisis. Finally, the results indicate that government maintains a positive contribution over the whole horizon.

Box 4 • A more severe scenario for the Portuguese economy

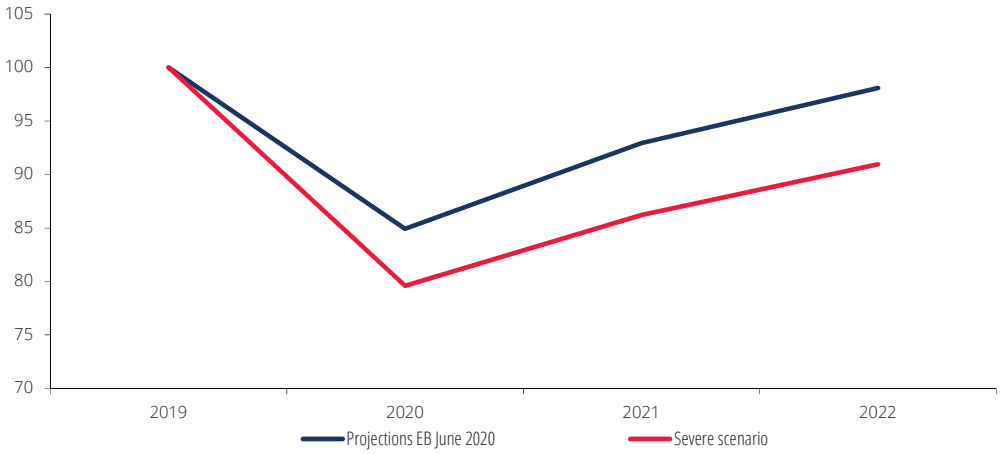
The economic projections presented in this bulletin are subject to a high degree of uncertainty. The main source of this uncertainty concerns the evolution of the pandemic and the extent of the measures needed to contain it, in terms of duration, restrictiveness and sectoral composition, as well as its impact in the short and medium term. The possibility that a more adverse scenario regarding the spread of the virus materializes – in Portugal and in the rest of the world – is a risk whose potential consequences on the Portuguese economy must be assessed. In this respect, this box presents the scenario for the Portuguese economy underlying the severe scenario for the euro area published in early June by the ECB within the scope of the Eurosystem exercise, thus sharing its assumptions.[28]

This more severe scenario assumes that a second wave of infections occurs at the global level, requiring the reintroduction of strict containment measures, including the possibility of a new lockdown period.[29] The measures to contain this second wave of the virus would imply further significant activity losses in the various sectors of the economy, although eventually smaller than those observed in the recent state of emergency period.[30] In this adverse scenario, after these major disruptions in activity, the recovery is expected to occur in a more contained manner than assumed in the projections presented in this bulletin. The measures, as well as the high uncertainty and insecurity, will persist for longer, affecting production processes, investment decisions and consumption patterns. This implies that more firms will be forced to close down permanently. Against a background of high levels of public and private borrowing, this more severe scenario also foresees that the increase in insolvencies will have an adverse impact on the financing costs of economic agents, only partially mitigated by policy measures. It is also assumed that the budgetary response is more significant in this scenario.

This scenario encompasses a more unfavourable external environment, assuming that the containment measures are maintained for longer or are reintroduced in most countries due to an escalation in infections. This implies a more negative impact on worldwide activity and international trade flows.[31] In the euro area, which concentrates Portugal's main trading partners, GDP will fall by 12.6% in 2020 (against an 8.7% fall in the Eurosystem's baseline projections). This implies a slightly stronger fall in the first half of this year and a weaker subsequent growth compared to that assumed in the baseline scenario, with GDP in the second half of 2020 standing at levels below those estimated for the first half. In the following years, economic activity in the euro area grows at an average pace lower than assumed in the baseline scenario (3.3% in 2021 and 3.8% in 2022), implying that at the end of the horizon GDP levels are still about 6% below those observed in 2019. External demand for the Portuguese economy presents a similar profile, significantly limiting its performance (Chart C4.1).

28. Eurosystem staff macroeconomic projections for the euro area, June 2020 (Box 3 – Alternative scenarios for the euro area economic outlook).
29. The outbreak is assumed to resurface in the last quarter of 2020 in Portugal, but it could happen at any other time. This possibility cannot be dismissed until a vaccine or other effective medical solution is discovered, which is expected in mid-2021.
30. It is assumed that, given the measures imposed during the state of emergency, there may be learning effects on the authorities' response in terms of the effectiveness of the measures and the behaviour of economic agents, which are reflected in lower economic costs.
31. As regards the remaining assumptions, the same evolution is assumed for the oil price, the short-term interest rate, and the effective exchange rate as in the baseline scenario (Section 2).

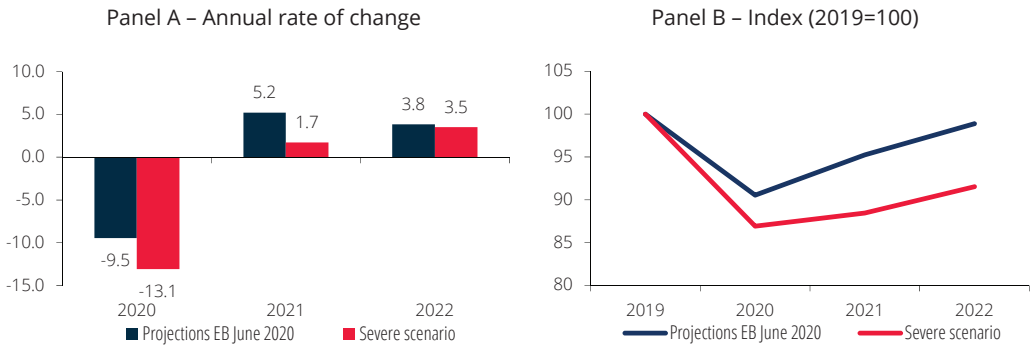
Chart C4.1 • External demand directed to the Portuguese economy | Index (2019=100)



Source: Eurosystem (Banco de Portugal calculations).

In this more severe scenario, the shocks described above determine a sharper fall in activity in Portugal in 2020 and a subsequent more gradual recovery than assumed in the projections presented in this Bulletin (Chart C4.2 – Panel A). The level of economic activity falls significantly in the first half of 2020, slightly more than assumed in the baseline projection. In the second half of the year, the emergence of a new wave of the virus and the consequent imposition of public health measures imply a further fall in economic activity. The subsequent economic recovery is more gradual than assumed for the euro area, given the structural fragilities of the Portuguese economy and the greater relative weight of tourism-related sectors. In 2022, the GDP level in Portugal stands 8.5% below that observed in 2019 (Chart C4.2 – Panel B).

Chart C4.2 • Portuguese GDP | Annual rate of change, in percentage, and index (2019=100)



Sources: Statistics Portugal and Banco de Portugal.

In terms of expenditure composition and compared with the projections in this Bulletin, all aggregates show a sharper fall in 2020, with the exception of public consumption, which shows a higher growth. It should be noted that the evolution of investment is much more negative, extending into 2021, recovering only at the end of the horizon. In this scenario, investment plans should be significantly revised downwards, reflecting a backdrop of greater uncertainty and reduced confidence among

economic agents. The forced closure of some activities and the reopening at lower capacity levels, as well as changes in consumer preferences and behaviour, mean that there are more business failures.[32] This destruction of installed capacity prevents a stronger recovery of the economy, including in the period post-discovery of an effective medical solution. The larger rise in financing costs in this scenario, reflecting an increase in insolvencies, is a financial amplification mechanism that also contributes to a further contraction in consumption and investment. It should also be noted that difficulties in containing the pandemic and the extension of restrictive measures in this scenario translate into a more lasting negative impact on exports, particularly in tourism.

The deterioration of labour market conditions is more significant in this more severe scenario. Compared with the projections presented in this Bulletin, employment declines more significantly in 2020 and the pace of the subsequent recovery is weaker, reflected in higher unemployment rates over the whole horizon. It is important to note that labour market developments are very uncertain, being greatly influenced by the impact of economic policy measures. As regards consumer prices, this scenario assumes a slightly weaker inflation profile than that considered in projections in this Bulletin.

The results presented are indicative, reflecting the degree of arbitrariness of the assumptions underlying the exercise and the impossibility of capturing all the relevant factors.[33] In any case, they illustrate how the economic costs of the pandemic on the Portuguese economy may prove even more significant and persistent than assumed in the baseline projections of this Bulletin. This more severe scenario would require a stronger and internationally coordinated reaction from economic policy authorities to limit the scale and persistence of economic and social damage.

32. For a simulation-based analysis of the impact of a temporary drop in activity on corporate liquidity and consequent risks of closure, see the Special issue "The economic impact of the pandemic crisis", *Economic Bulletin*, May 2020.
33. In particular, the financial amplification channels of the crisis may be more significant, constituting an additional downside risk for the economic activity projections presented in this bulletin.

II Special issue

The European Central Bank's monetary policy strategy: reasons for a review

The European Central Bank's monetary policy strategy: reasons for a review

Introduction

The macroeconomic and institutional changes of the past decade have transformed the environment where the European Central Bank (ECB) operates. These changes have required adjustments to several elements of monetary policy and justify an in-depth review of the strategy, set to take place during 2020-21 for the first time since 2003.

The ECB defines the euro area monetary policy in order to achieve the objectives established in the Treaty on the Functioning of the European Union (TFEU) and the Treaty on European Union (TEU). The primary objective of the ECB is to maintain price stability (Article 127(1) of the TFEU). Without prejudice to the objective of price stability, the ECB must contribute to the achievement of the objectives of the European Union (EU) as laid down in Article 3 of the TEU, including balanced economic growth, full employment and a high level of protection and improvement of the quality of the environment. In addition, the ECB must contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system (Article 127(5) of the TFEU).

The TFEU establishes a hierarchy of objectives and not merely a single objective. The primary objective of price stability reflects modern economic thinking on how monetary policy can best contribute to the welfare of citizens, as well as theoretical arguments and ample evidence in favour of a low and stable level of inflation (Adão, 2019). The secondary objectives reflect the desirability of the central bank acknowledging the trade-offs it faces when conducting monetary policy, as these also have repercussions on the welfare of society.

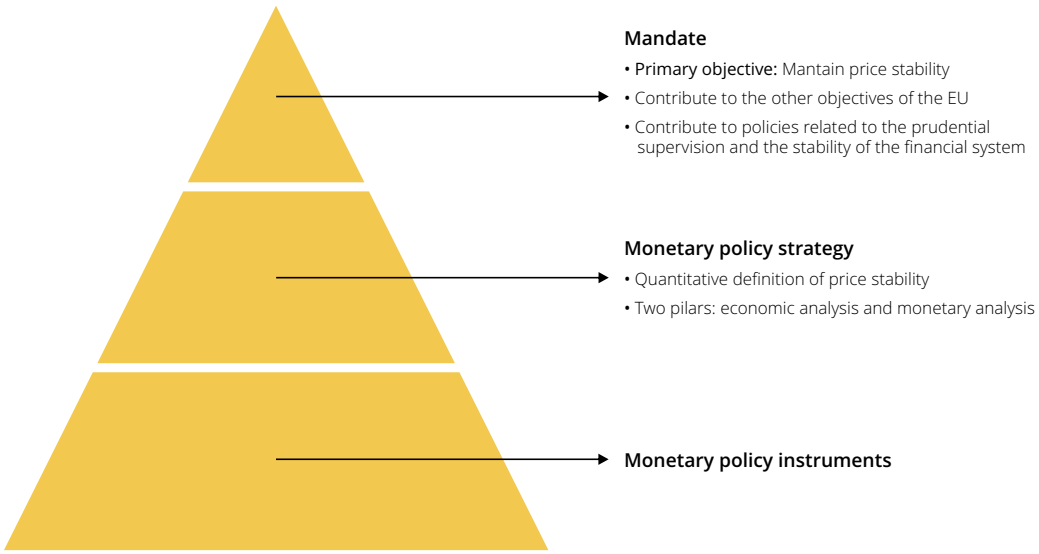
The ECB does not have the authority to change its mandate, but it has the autonomy to specify it and ample operational independence to choose the strategy and instruments to achieve its objectives[1] (Figure 1). This institutional independence is offset by accountability and transparency obligations.

The monetary policy strategy is the framework that ensures a consistent and systematic approach to decision-making by the central bank to achieve its statutory objective and to communicate with the public.

In October 1998, the ECB announced its monetary policy strategy, which included two key elements: a quantitative definition of price stability and a two-pillar approach (monetary and economic) to assess the outlook for inflation and the risks to price stability.

1. Although with a few limitations, such as the prohibition of monetary financing (Article 123 of the TFEU) and the application of the principle of an open market economy with free competition (Article 127(1) of the TFEU) and the principle of proportionality (Article 5(4) of the TEU).

Figure 1 • The ECB's monetary policy framework



Sources: ECB and EUR-Lex. | Note: The ECB has operational independence to choose its strategy and instruments to attain the objectives defined in the Treaties (TFEU and TEU).

The adopted strategy aimed at addressing the complexities faced by the ECB in the transition to stage three of Economic and Monetary Union (EMU): (i) to secure the credibility of a newly-established institution and (ii) to define a strategy that would be robust to the change in regime resulting from the transition. The means used to give credibility to the ECB included the option for continuing with the most successful strategies used by euro area national central banks (NCBs) and establishing a communication policy that attempted to explain to the public the reasoning behind monetary policy decisions based on the strategy. The transition to the euro involved a particularly high level of uncertainty about the characteristics and evolution of the monetary policy transmission mechanism, worsened by the lack of statistical information comparable over time. The option for a strategy based on a monetary pillar and an economic pillar helped ensure the robustness of decisions and reduce risks of policy errors by incorporating different perspectives into the analysis.

Alongside the strategy, the ECB established an operational framework (a set of instruments and procedures) to implement monetary policy decisions. However, the instruments were seen as separate from the strategy. In accordance with the separation principle, the strategy determined the policy stance – the level of the official interest rate – needed to ensure price stability, and the provision of liquidity ensured that money market interest rates were in line with the level decided by the Governing Council of the ECB.

In May 2003, the monetary policy strategy was reviewed based on the experience acquired and taking into account an ample set of views and criticisms, including from academics, market participants and other observers. The Governing Council considered that the initial strategy had worked satisfactorily and confirmed its main elements, but made several clarifications mostly to increase the effectiveness of communication.

Since then, several elements of the ECB's monetary policy have evolved in response to emerging challenges. Following the global financial crisis and the euro area sovereign debt crisis, the two-pillar

analysis of the strategy was deepened and communication tools and practices were significantly changed. The instruments used by the ECB were expanded and became an integral part of the strategy, to the extent that they brought credibility to the pursuit of the primary objective. As monetary policy became more complex, there was greater need for communication, which became a policy instrument in itself.

Since 2003, both the euro area economy and the global economy have undergone profound changes, partly as a result of the crises. These changes include a protracted environment of low inflation, low potential growth and a low natural rate of interest, as well as other structural dynamics. Against this background, the Governing Council launched an in-depth, comprehensive and inclusive review of its monetary policy strategy in January 2020. The aim is to understand which strategy best delivers the mandate, both now and in the future. The review was postponed in April due to the need to reallocate resources to the response to the COVID-19 pandemic crisis and will likely be concluded in mid-2021.

Several other central banks had reviews of their monetary policy strategy under way when the COVID-19 pandemic emerged. In November 2018, the Federal Reserve began a comprehensive review of its strategy, tools and communication practices. In January 2020, the Bank of England announced it would conduct a research programme dedicated to reviewing the monetary policy framework. The Bank of Canada, which conducts reviews of the inflation target every five years, is assessing a broad set of alternative monetary policy frameworks for the review set to take place in 2021.

The first part of this Special issue summarises developments in the monetary policy strategy, instruments and communication practices since the ECB assumed the responsibility for defining the euro area monetary policy. The second part assesses the main macroeconomic and institutional changes that occurred in the past decade and the challenges faced by different elements of the ECB's current strategy. The third part addresses the objective, scope and format of the strategy's review launched by the ECB at the start of 2020 and the potential implications of the pandemic crisis to this reflection. Finally, a number of final considerations are presented.

The ECB's strategy over the last two decades

The initial strategy

On 13 October 1998, the ECB announced a quantitative definition of the primary objective of price stability established in the Treaty.[2] Quantifying the objective helps coordinate medium to longer-term inflation expectations and provides a clear reference for the public to assess the policy's performance. The Governing Council defined price stability as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2% and indicated that price stability was to be maintained over the medium term.

The choice of total HICP for the euro area reflected the fact that this was the only price index that was sufficiently harmonised across countries and closest to the price of a representative basket of goods and services consumed by households. In addition, it made it clear that decisions on the single monetary policy would be taken from a euro area-wide perspective and not on the basis of specific national developments.

2. https://www.ecb.europa.eu/press/pr/date/1998/html/pr981013_1.en.html.

The definition adopted clearly established an upper bound for the inflation rate consistent with price stability. Opting for an inflation below 2% was justified by theoretical and empirical arguments in favour of a low level of inflation (Adão, 2019) and was in line with the practice of most euro area NCBs. In contrast, the lower bound was not explicit, although the reference to increases in the HICP signalled that persistent price decreases (deflation) would not be consistent with price stability (Duisenberg, 1998). This option was justified by existing uncertainties, in particular regarding the magnitude of the HICP's measurement bias[3] and how it might change over time.

The medium-term orientation acknowledged that monetary policy actions are only fully transmitted to prices after a long period of time of varying length (typically from one and a half years to two years). This is the reason why monetary policy is not capable of actively controlling inflation in the short term. The other reason for the medium-term horizon – as opposed to a fixed horizon – was to introduce flexibility in response to shocks affecting the economy. After a supply shock (where inflation and output are typically affected in opposite directions), a more gradual reaction from monetary policy prevents generating additional volatility into the real economy.[4] The medium-term orientation indirectly allowed the ECB to contribute to the achievement of the other EU objectives, such as balanced economic growth and full employment.

In addition to the definition of price stability, the ECB's strategy contained two other elements: a prominent role for money and a broadly-based assessment of the outlook for inflation and the risks to price stability. The role of these two pillars was to provide a framework for analysing and interpreting a wide range of information guiding the decisions of the Governing Council. In addition, it ensured transparency in the decision-making process and public accountability of decision-makers. The two pillars corresponded to different approaches in the analysis of the inflation process: one assigning an important role to money in future price developments and the other highlighting the interaction between supply and demand in goods and services markets and in the labour market.

The prominent role given to money reflected the essential monetary origins of inflation over the medium to long term. This relationship (observed until then across countries, periods and monetary regimes) suggested that money might be particularly useful in a situation where information on the structure and functioning of the economy was limited.[5] This option also ensured some continuity with the strategy previously pursued by the Bundesbank. The Governing Council decided to announce a quantitative reference value for growth in a monetary aggregate and clarified that, under normal circumstances, substantial or prolonged deviations from the reference value would signal potential risks to price stability.[6] Any deviations would be carefully analysed and explained to the public, but would not trigger an automatic reaction of monetary policy, i.e. there was no commitment to correcting them in the short term.

3. Inflation measured by a price index typically overstates the rate of inflation that reflects changes in the general price level, mainly due to changing spending patterns and quality improvements in those goods and services included in the basket that are not captured appropriately.
4. Based on a small macro model estimated for the euro area, Smets (2003) shows that the optimal monetary policy horizon becomes longer, the greater the weight on secondary objectives, such as stabilising output.
5. Available evidence pointed to the existence of a stable relationship between the broad monetary aggregate M3 and price developments over longer horizons and to leading indicator properties of this aggregate for price developments over the medium term (Issing, Gaspar, Angeloni and Tristani, 2001).
6. In December 1998, a reference value of 4.5% was announced for annual M3 growth, to be reviewed in one year. This value was determined assuming trend growth in euro area real GDP of 2% to 2.5% and a trend decline in the velocity of circulation of M3 of -0.5% to -1% per annum. This suggests that the ECB was aiming at inflation standing within a range of 1% to 2%.

Together with monetary analysis, the strategy included a comprehensive analysis of risks to price stability. The assessment of these risks required a perception of the type of shocks affecting the economy which the analysis of the monetary pillar alone does not reveal. The wide range of indicators under analysis included economic and financial variables and inflation projections by the Eurosystem (ECB and euro area NCBs) and other institutions. Initially, the Governing Council decided not to publish inflation projections, in particular given the increased difficulties arising from the transition to the euro.

The hybrid strategy adopted in 1998 departed from the more common practices of other central banks (inflation targeting or monetary targeting) and reflected a pragmatic choice that ensured flexibility and robustness in view of the heightened uncertainty characterising the transition. Regardless of the strategy chosen, monetary policy decisions are based on a broad range of information. However, unlike inflation targeters, who use inflation forecasts as a focal point for communication, the ECB opted for giving special emphasis to the monetary analysis, which at that juncture was considered a better way of influencing the expectations of economic agents.

Two other complementary aspects, but directly relevant to the monetary policy strategy, are the operational framework and the communication policy adopted by the ECB.

In terms of the operational framework, the monetary policy stance decided by the Governing Council was implemented through open market operations mainly aimed at keeping very short-term money market rates close to the official interest rate. The toolkit also included the deposit and marginal lending facilities and minimum reserve requirements.

Since the beginning, the ECB has opted to communicate its assessment of the economic situation and its decisions in a timely and transparent manner. The communication policy helps make the central bank credible and accountable. Communication is crucial to an effective conduct of monetary policy, as it helps anchor inflation expectations and reduces uncertainty surrounding monetary policy.[7] The ECB opted to use the press conference following the monetary policy meetings of the Governing Council (which included an introductory statement and Q&A session) as its main means of communication. Other important communication channels were the Monthly Bulletin and the speeches and interviews of the members of the Executive Board. The President's regular reporting to the European Parliament was one way of holding the ECB accountable.

The review of the strategy in 2003

On 8 May 2003, the Governing Council of the ECB confirmed the initial definition of price stability[8] and clarified that it intended to keep inflation close to 2% over the medium term.[9]

By identifying a focal point at the upper bound of the range – below, but close to, 2% – the Governing Council implicitly indicated that not all inflation rates below 2% are equally desirable. Although the Governing Council was not explicit as regards the objective's level, it was suggested that this would be consistent with what had been achieved until then, namely maintaining inflation expectations in

7. Expectations of interest rates at longer horizons and the premia required due to uncertainty also affect the transmission of monetary policy. Evidence suggests that financial markets have been increasingly able to correctly anticipate interest rate decisions of main central banks, including the ECB (Blattner, Catenaro, Ehrmann, Strauch and Turunen, 2008).
8. The Governing Council agreed that the definition adopted in 1998 should be maintained for credibility reasons, although views differed among its members (ECB, 2003).
9. https://www.ecb.europa.eu/press/pr/date/2003/html/pr030508_2.en.html.

a range of 1.7 to 1.9% (ECB, 2003). The clarification aimed at ensuring a sufficient safety margin to guard against the risks of deflation. In addition, it accommodated a possible positive measurement bias in the HICP and the implications of inflation differentials across euro area countries.

Although this clarification brought the ECB's strategy a little closer to the strategy of many central banks that had adopted an explicit inflation target, in reality it did not completely extinguish previous criticisms and perceptions that the objective was asymmetric, given that the definition still did not make clear the lower bound that was considered close to 2% (Hartmann and Smets, 2018).

The Governing Council confirmed in 2003 that monetary policy decisions would continue to be based on a comprehensive analysis of the risks to price stability, organised around two pillars, but clarified how both perspectives should complement one another. Economic analysis identifies short to medium-term risks to price stability, while monetary analysis serves to cross-check, from a medium to long-term perspective, the indications coming from economic analysis.

This clarification meant a less prominent role for money, which was one of the more controversial features of the initial strategy. Monthly monetary policy decisions were in practice mostly driven by economic analysis (Hartmann and Smets, 2018). In addition, the short-term disturbances seen in the monetary aggregate M3 and emerging evidence of some instability in money demand led the ECB to rethink the role of money in its official communication.[10] The previous hierarchy, where monetary analysis took precedence, was reversed and reflected in the structure of the introductory statement presented at the press conference following the Governing Council meetings. The Council also decided to no longer conduct an annual review of the reference value for money growth to underscore its medium-term nature and eliminate the perception that there was a normative annual value for the indicator. In any case, the ECB continued to publicly reaffirm its commitment to deepening the monetary analysis.

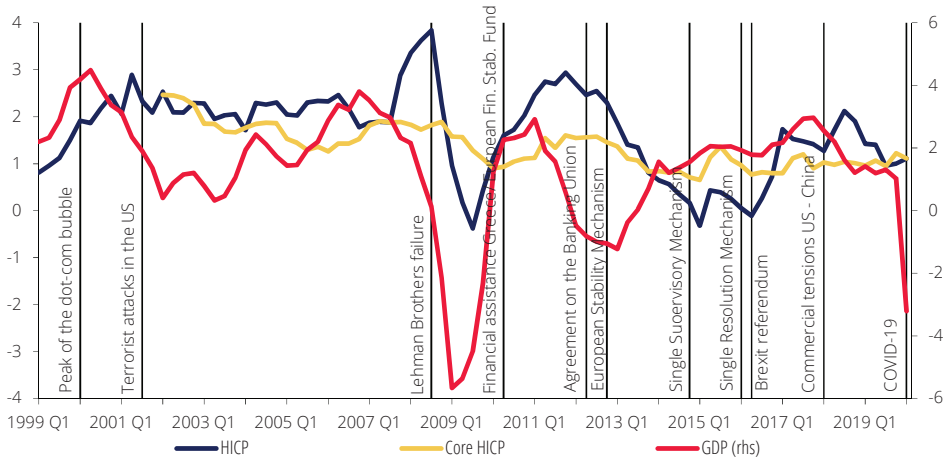
The strategy since 2003: what has changed in practice?

Since 2003, the euro area was hit by several shocks that have significantly altered the economic environment in which the ECB operates and made it necessary to adapt the various elements of monetary policy.

Until 2007, the euro area had lived through a period of continued economic expansion, with inflation slightly above 2% and stable inflation expectations, despite some upward pressure on prices (Chart 1). The period that followed was characterised by a double-dip economic recession, in 2008-09 and 2011-13, following the global financial crisis and the subsequent euro area sovereign debt crisis. The moderate recovery in activity from mid-2013 onwards was accompanied by low inflation levels (at around 1%) and a slight downward revision to longer-term inflation expectations. Since 2018, the economic situation has weakened again amid uncertainty concerning global trade, only to deteriorate in a sharp and abrupt manner in 2020 due to the COVID-19 pandemic.

10. Alves, Marques and Sousa (2007) present evidence of a deterioration in the empirical properties of the aggregate M3 for the euro area from 2001, particularly in the properties that had justified the prominent role of money in the ECB's strategy (see footnote 5).

Chart 1 • Inflation and activity in the euro area | Year-on-year rate, percentage



Source: Eurostat. | Note: Core HICP excludes food and energy.

Over the past two decades, the ECB's initial concern in establishing an anti-inflationary reputation (like the Bundesbank) shifted to a concern in assuring economic agents of its commitment and ability to avoid a low inflation or deflation regime.

As such, ECB officials have highlighted the symmetry in the inflation objective on a number of occasions over the past few years, attempting to dispel perceptions that the ECB had a higher tolerance for low inflation than for high inflation.[11] In July 2019, the Governing Council of the ECB clarified in the introductory statement that it was determined to act in line with its commitment to symmetry in the inflation objective.

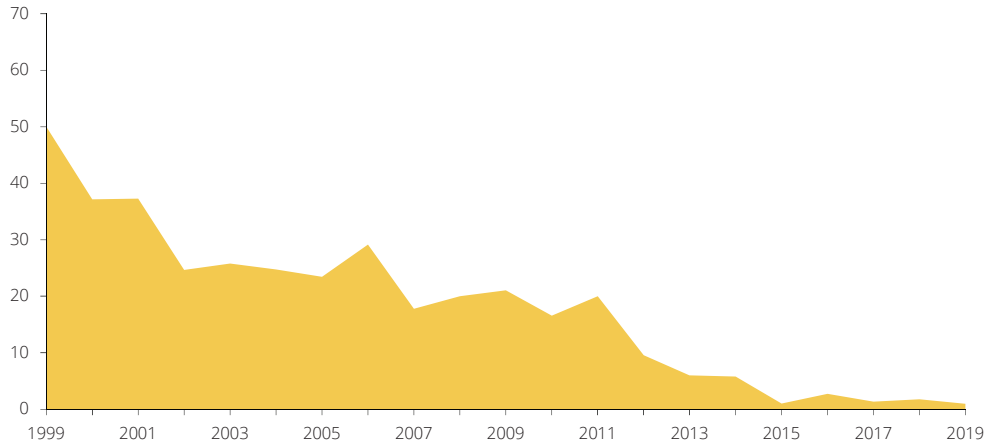
The analysis of the inflation outlook and of the risks to price stability based on the strategy's two pillars has been deepened and extended since 2003.

Economic analysis has benefited from progress in terms of the availability and processing of euro area data and the development of models to support the assessment of the economic situation and outlook. Eurosystem staff projections (published since December 2000) have become more prominent in monetary policy decisions, although they do not exhaust the Council's assessment and their limitations are broadly acknowledged.

Monetary analysis has been enriched since 2003, namely by placing greater emphasis on credit and the role of financial intermediation, developments in asset prices and on identifying risks to financial stability. The crises have intensified this process due to their financial origin. The focus has shifted towards the functioning of monetary policy transmission, including macro and microeconomic analysis of the financial system and, in particular, of the bank lending channel. The distinction between economic and monetary analysis has become even less clear, given the strong interaction between financial and real factors, and references to the strategy's monetary pillar have lost prominence in the public communication of ECB officials (although both pillars were kept in the structure of the introductory statement) (Chart 2).

11. Since 2014, President Mario Draghi clarified the symmetry of the objective and of the ECB's reaction on several occasions. In a speech in 2016, he mentioned that it was particularly important to pursue the inflation objective symmetrically in an environment where interest rates were close to the lower bound and debt was high (Draghi, 2016). However, it is not clear that the objective was originally understood as symmetrical by all decision-makers (Hannoun et al., 2019).

Chart 2 • Speeches by ECB's Executive Board members that make reference to the monetary pillar of the strategy | Percentage of total speeches per year

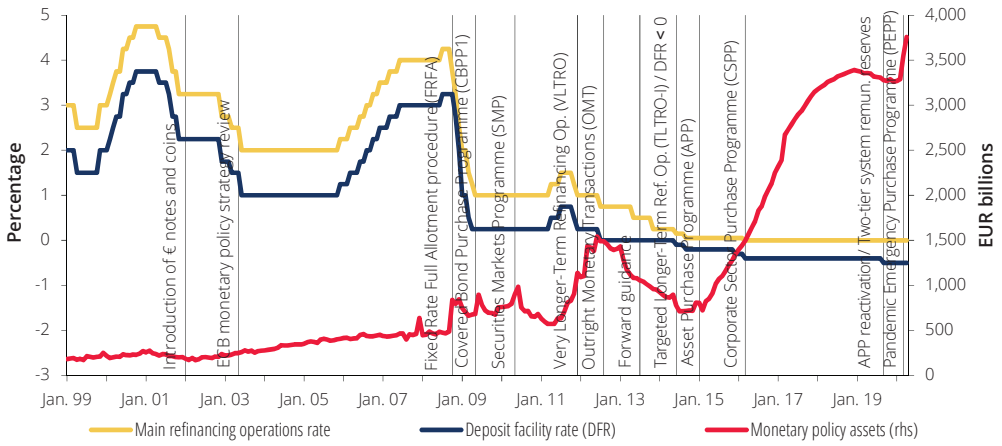


Sources: ECB and Banco de Portugal. | Notes: Speeches that make reference to the monetary pillar were identified based on boolean searches that combine keywords and logic operators and count the expressions searched in each document (implemented in Python). Analysis of 2152 speeches in English.

Disruptions associated with the global financial crisis and the sovereign debt crisis have forced the ECB to change and diversify its instruments.[12] At an initial stage, the ECB acted as lender of last resort for a banking system with liquidity problems, but continued to rely on the separation principle.[13] A wide range of liquidity-providing measures – refinancing operations with unlimited amounts and longer maturities, and initial outright asset purchase programmes – focused on ensuring the functioning of dysfunctional markets, solving difficulties in the transmission mechanism and supporting bank lending to the economy, in parallel with the standard interest rate policy.[14] In a subsequent stage of the crisis, this separation became blurred. Non-standard measures were also designed to provide further monetary accommodation and offset the limited room for interest rate cuts. The main instruments used – negative interest rate policy, forward guidance, expanded asset purchase programme and targeted longer-term refinancing operations – were recalibrated on several occasions, complementing each other (Rostagno et al., 2019). In response to the pandemic crisis, the ECB adopted a set of measures to mitigate risks to monetary policy transmission and the outlook for the euro area. In addition to strengthening a number of already existing instruments, the ECB launched a new temporary asset purchase programme of private and public sector securities. Non-standard measures adopted since 2015 have led to a very significant increase in the ECB's balance sheet (Chart 3).

12. For a review of the main measures adopted since the start of the crisis, see Special issue "ECB's unconventional monetary policy: what has been done and did it work?", *Economic Bulletin*, June 2015.
13. For instance, the decision to sterilise the purchases of the first Securities Markets Programme (SMP) signalled that the programme was not aimed at changing the monetary policy stance. The interest rate rises in 2011, in the midst of the sovereign debt crisis, are another example of the distinction between policy stance and liquidity provision.
14. The rate on the deposit facility became the relevant benchmark for developments in money market interest rates, against a background of abundant liquidity, in contrast to the previous corridor system established by the rates on the marginal lending and deposit facilities.

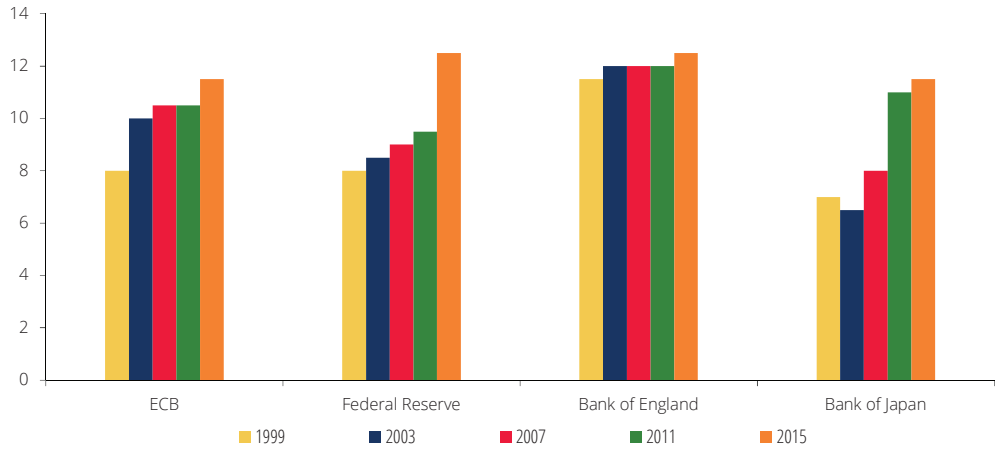
Chart 3 • ECB official interest rates and balance sheet



Sources: ECB and Refinitiv.

Like other central banks, the ECB has stepped up its communication efforts and further increased its transparency following the global financial crisis (Chart 4). The ECB reviewed its main communication channels: it began disclosing more detailed information on economic projections and the new policy instruments, increased the number of public interventions by the members of the Executive Board and started publishing the accounts of the Governing Council monetary policy meetings in 2015. At the same time, the ECB reduced the frequency of these meetings from a monthly to an eight-meeting schedule per year, in order to better align it with the disclosure of relevant new information and to reduce the times when expectations could cause volatility in financial markets (Hartmann and Smets, 2018). The frequency of the *Economic Bulletin* (formerly the Monthly Bulletin) was adjusted accordingly. In addition, the emergence and development of social networks in the past decade have led the ECB's communication to reach out to wider and less specialised audiences by exploring new formats and new communication channels.

Chart 4 • Monetary policy transparency index | Index (min=0, max=15)



Source: Dincer, Eichengreen and Geraats (2019). | Note: The index is the sum of the scores (between 0 and 1) of the answers to 15 questions that evaluate transparency about monetary policy objectives, relevant economic information, procedures, decisions and implementation.

Following the crises, communication was used on several occasions as a monetary policy instrument. One such example is the speech "Whatever it takes" by President Mario Draghi, on 26 July 2012, signalling the ECB's commitment to do whatever necessary to preserve the euro (Draghi, 2012).[15] The adoption in July 2013 of forward guidance on interest rates marked a clear departure from previous communication practices. Until then, the ECB had privileged transparent communication that would clarify its reaction function and increase the predictability of its actions, but had always avoided committing to future actions.

Macroeconomic and institutional changes over the past decade and reflections on the future strategy

The period following the global financial crisis and the euro area sovereign debt crisis saw marked economic changes, which may have changed the monetary policy transmission mechanism and the inflation dynamics itself. Some of these changes are of a cyclical nature, while others are structural and persistent and, therefore, relevant to the monetary policy strategy in the future.

Low inflation, decline in the natural rate of interest and the lower bound on interest rates

- Decline in and low level of the natural rate of interest

The natural rate of interest can be commonly defined as the short-term real interest rate prevailing at times when the economy is growing at its potential and inflation is stable and in line with the central bank's objective.[16] This concept plays a key role in economic literature and its importance is acknowledged by policymakers, given the link between the level of the natural rate of interest and the degree of monetary policy accommodation. In practice, the use of the natural rate of interest as a benchmark for monetary policy is challenging, as it is unobservable and changes over time.

The fact that short-term real interest rates have followed a decreasing trend in major advanced economies over the past few decades, particularly after the global financial crisis, suggests that the natural rate of interest has also declined during this period (Chart 5). There is extensive empirical evidence in support of this conjecture, although estimates for level of the natural rate of interest are inaccurate and vary considerably across the methods and models used in the estimation. Recent estimates point to a marked and persistent reduction in the natural rate of interest in the euro area, similarly to other advanced economies (Chart 6). On average, the natural rate of interest in the euro area decreased from around 2.5% in the early 2000s to levels close to zero, or even negative, over the past few years.

Explanations provided in the literature for the downward path followed by the natural rate of interest include real and financial factors affecting saving and investment decisions by households and firms.

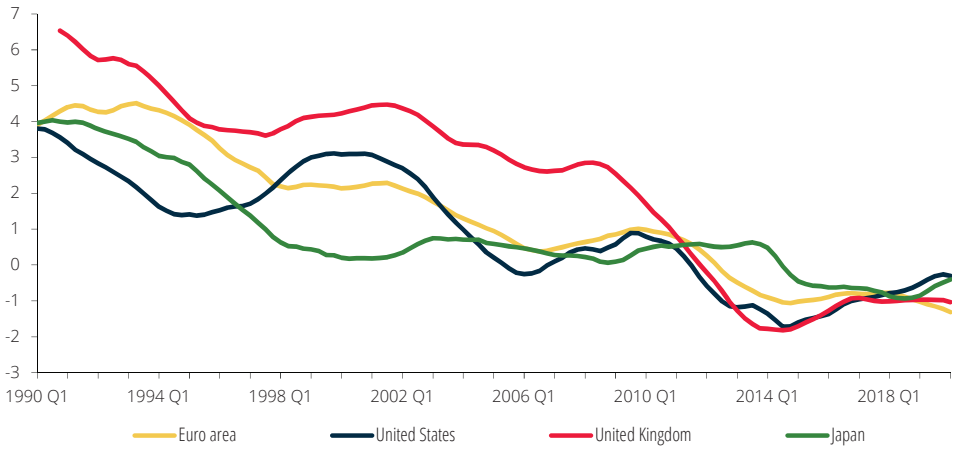
The rise in average life expectancy and the reduction of fertility rates over the past few decades have led to an increased propensity to save during working life to prepare for longer retirement. These demographic developments lead to an increase in the supply of funds, which, for the same

15. Following this speech, the ECB announced a programme of outright purchases of public debt in unlimited amounts subject to appropriate conditionality (Outright Monetary Transactions – OMTs).

16. For a more detailed discussion, see the Special issue "The natural interest rate: from the concept to the challenges to monetary policy", *Economic Bulletin*, Banco de Portugal, March 2019.

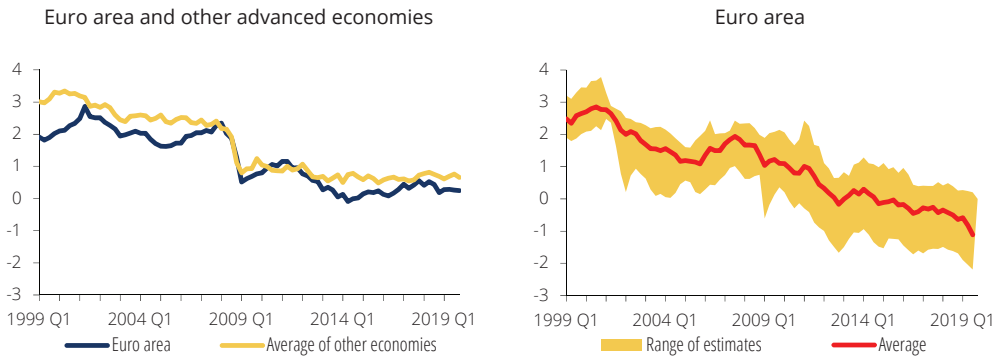
level of demand driven by the need to finance investment projects, implies a lower equilibrium real interest rate.[17] Brand, Bielecki and Penalver (2018) provide evidence that demographic factors have made a significant contribution to the reduction in real interest rates in the euro area since the 1980s.

Chart 5 • Three-month real interest rates | 5-year average, percentage



Sources: Federal Reserve Bank of St. Louis and OECD (Banco de Portugal calculations). | Notes: Money market interest rates deflated by the average annual inflation rate. Euro area interest rate before 2001 corresponds to the German interest rate.

Chart 6 • Estimates of the natural interest rate from various authors | Percentage



Sources: Federal Reserve Bank of New York and various authors (Banco de Portugal calculations). | Notes: Left panel: estimates by Holston, Laubach and Williams (2017); average of United States, United Kingdom and Canada, using GDP weights based on PPP in 2019. Right panel: estimates by Brand, Bielecki and Penalver (2018), Brand, Goy and Lemke (2020) and Johannsen e Mertens (forthcoming) provided by the authors.

Other factors, besides demographics, may have played a role in rising global savings, such as the increase in income inequality seen over the past decades in advanced economies (greater concentration of wealth in the cohorts of the population more willing to save) and structural changes in a number of emerging market economies, such as China (Bernanke, 2015).

17. The positive effect of population ageing on savings tends to more than offset the negative effect associated with lower growth of working age population.

Further explanations for the reduction in the natural rate of interest relate to the slowdown in productivity due to, inter alia, more muted technological progress and the increase in labour supply stemming from the integration of emerging market economies into the global economy. Lower productivity and potential output growth entails a decrease in the return on capital and in the incentive for firms to make new productive investments. Some authors estimate that lower productivity and potential output growth account for a large proportion of the reduction in the natural rate of interest in the euro area since 1990 (Holston, Laubach and Williams, 2017).

Many of these determinants evolve slowly over time, which means that a reversal of the trends seen over the past decades is not to be expected. On the contrary, these factors are likely to continue putting downward pressure on the natural rate of interest.

Higher demand for safe assets in the wake of the global financial crisis may also have contributed to the decrease in the natural rate of interest. The higher degree of risk aversion and the strengthening of financial regulation at international level seem to have fostered a higher demand for assets perceived as safe and liquid, typically sovereign bonds, at a time when many central banks adopted large-scale asset purchase programmes which withdrew a substantial share of these securities from the market. Although some of the factors behind the rise in demand may unwind in the future, other factors are likely to be more persistent and to continue putting downward pressure on interest rates, such as regulatory requirements and large-scale asset purchases by central banks, which have been recently reactivated in response to the COVID-19 pandemic crisis.

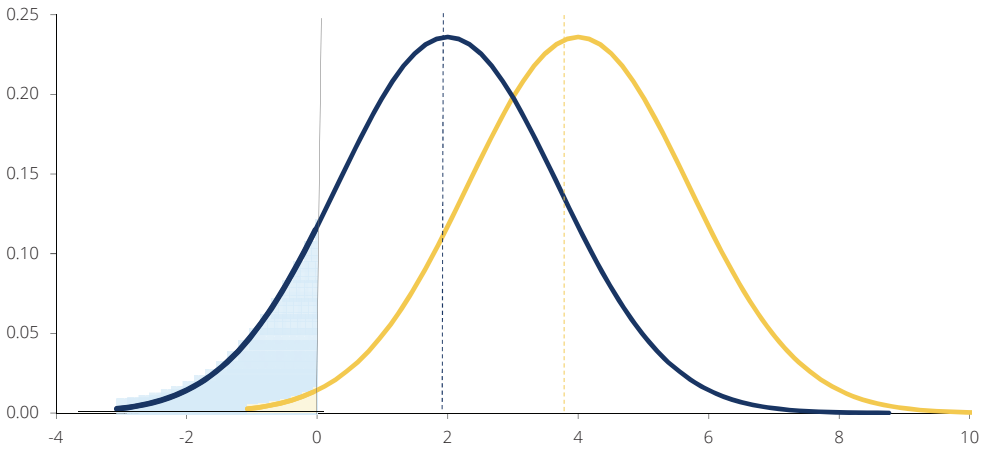
The maintenance of the natural rate of interest at low levels has important implications for the conduct of monetary policy, as it limits the scope for using the standard instrument. Assuming that the natural rate of interest in the euro area is 0% and the inflation objective is 2%, the nominal interest rate consistent with a neutral monetary policy stance is 2%. This means that the likelihood of hitting the lower bound on nominal interest rates[18] (in response to a disinflationary shock) is inevitably greater than in the early 2000s, when the neutral interest rate was around 4% (Chart 7).

Prior to 2018, most economists regarded the possibility of the lower bound on the interest rate actively restraining the conduct of monetary policy as a mere academic curiosity. The reduction in policy rates to levels close to zero or even negative in the wake of the global financial crisis and their maintenance at those levels for a protracted period has rekindled the interest of economic research in this topic. Recent empirical literature concludes that the policy interest rate in major advanced economies will hit its lower bound much more frequently than in the past. For instance, Franta (2018) estimates that the lower bound on interest rates may be hit once every eight years in the euro area, in contrast to estimates pointing to once every 50 years in the past (Coenen, 2003[19]). The estimated frequency of these episodes is higher the lower the level assumed for the natural rate of interest and the inflation objective (Andrade, Galí, Le Bihan and Matheron, 2018, and Kiley and Roberts, 2017).

18. In practice, the lower bound may be slightly below zero. Economic agents may choose to hold cash, with zero return, but this entails storage and handling costs and poses security problems. This can cause agents to prefer holding cash only if the interest rate falls below a given negative value, although there is uncertainty over this threshold.

19. Estimate on the basis of an inflation objective of 2% and a lower bound at zero. With a 1% inflation objective, interest rates in the euro area would be zero once every 14 years.

Chart 7 • Theoretical probability density functions for different values of the nominal neutral interest rate | Probability



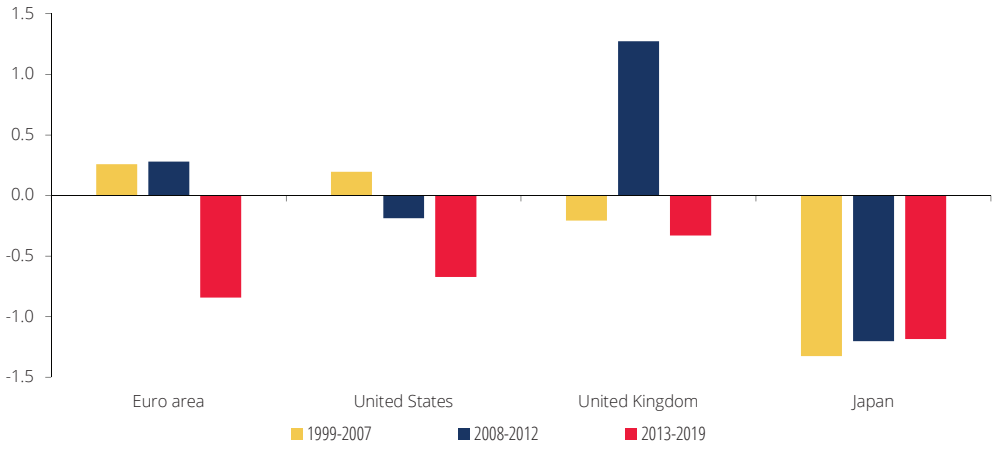
Sources: Bloomberg and Banco de Portugal. | Note: Normal density functions for the nominal interest rate with an average of 2% and 4%, respectively, and standard deviation equal to the one observed for EONIA between January 1999 and December 2019 (1.7%).

- Low inflation

The recovery in activity in major advanced economies since the last recession was not accompanied by a build-up of upward pressure on prices, and inflation undershot the objective of the respective central banks (Chart 8). In the euro area, average growth in total and core HICP was approximately 1% between 2013 and 2019, systematically below the projections released by the Eurosystem and other institutions.

The persistence of low inflation levels amid an upturn in activity and continued labour market improvements has surprised academics and policymakers and has triggered a debate on the reasons behind it.

Chart 8 • Deviations of annual inflation from central banks' objectives | Percentage points



Sources: Eurostat and Refinitiv (Banco de Portugal calculations). | Note: Inflation objectives: ECB (1.8%, implicit in ECB, 2003); Federal Reserve (2%, explicit after 2012); Bank of England (2.5% until 2002 and 2% from 2003 onwards); Bank of Japan (1% until 2012 and 2% from 2013 onwards).

The weakening of the typical relationship between the narrowing of the output or unemployment gap and price and wage growth – known as the Phillips curve – has led some authors to question its validity in the current low inflation environment. In the case of the euro area, the Phillips curve seems nonetheless to continue to offer a plausible account of how inflation dynamics evolved in the wake of the global financial crisis (Ciccarelli and Osbat, 2017, and Eser, Karadi, Lane, Moretti and Osbat, 2020). However, over the past three years, a substantial share of the behaviour of core inflation does not seem to be entirely attributable to the usual determinants (ECB, 2019).

Several explanations have been put forward for the apparent lower responsiveness of inflation to economic activity developments seen since 2013.

A first explanation relates to the practical difficulties in correctly assessing the cyclical position of the economy. The crises observed over the past ten years, particularly the euro area sovereign debt crisis, may mean that the measures traditionally used to assess the output or unemployment gap are underestimating the existing slack.

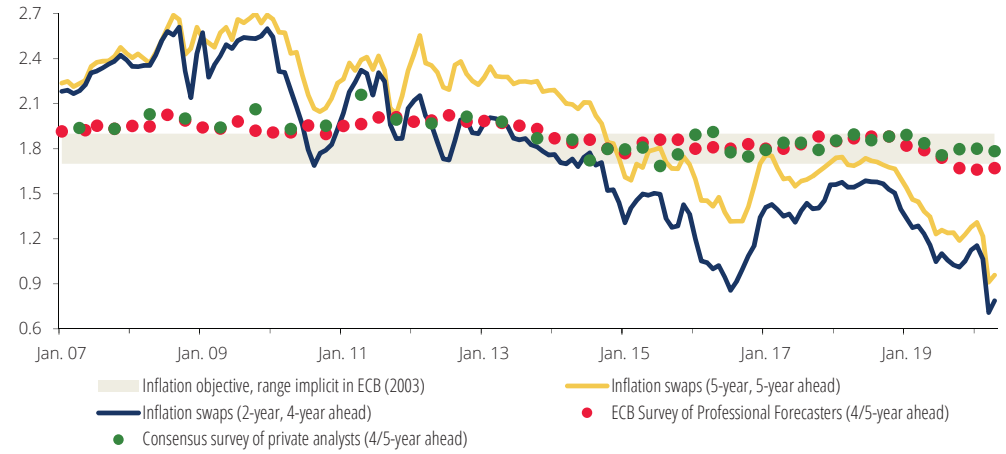
A second set of explanations focuses on the possibility of inflation being increasingly determined by global and technological factors beyond the central bank's control. The growing internationalisation of production via participation in global value chains may have altered the pricing mechanism, due to greater competition. Evidence on the importance of these global factors for inflation is inconclusive.[20] Technological innovation may also affect inflation, either directly, via price decreases in the IT and communication sector, or indirectly, via lower production and distribution costs and changes to the market structure which encourage greater business competition (for instance, the emergence of large global companies like Amazon). Moreover, greater recourse to online shopping allows for closer consumer scrutiny, thus curtailing firms' power to hike prices. Empirical results on the impact of digitalisation point to statistically significant effects, albeit relatively small (Csonto et al., 2019). To sum up, it appears that the behaviour of inflation continues to be largely driven by domestic pressures.

In recent years, there has been a reduction in inflation expectations in tandem with persistently low inflation levels. In the euro area, inflation expectations for longer maturities have decreased since 2014 and more markedly since 2019 (Chart 9). These developments are visible both across measures based on private analyst forecasts and measures implied by financial indicators, although the latter may also reflect risk premia. Currently, inflation expectations over a four to five-year time horizon are at historically low levels, although, judging by private analyst forecasts, they remain in line with the ECB's objective.

It is particularly difficult to gauge the consistency between developments in inflation expectations and the central bank's objective given that the de-anchoring of expectations unfolds slowly and gradually. In the euro area, there is some evidence that such risks have intensified recently. The distribution of private analyst forecasts has been progressively moving towards lower inflation rates (Chart 10). Since end-2019, around two-thirds of the analysts participating in the ECB's survey forecasted an inflation level below or equal to 1.7% over a four to five-year time horizon. In addition, longer-term inflation expectations based on financial instruments have become sensitive to developments in short-term expectations since 2014, despite some reduction in the most recent period (Chart 10).

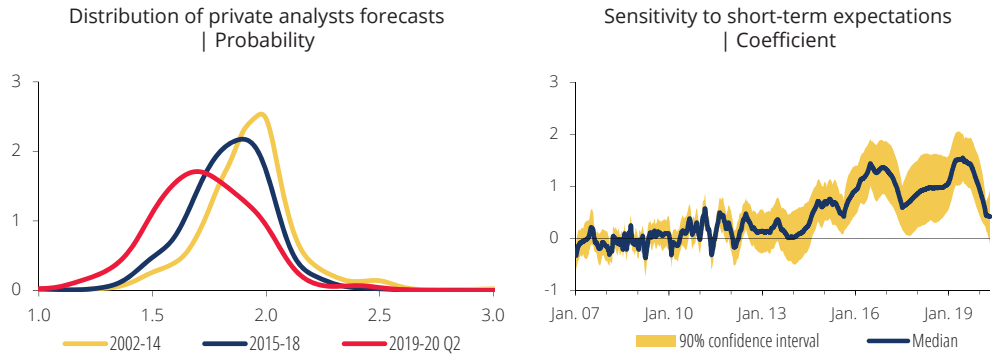
20. There is some evidence pointing to the existence of a common global factor behind the reduction in inflation across several countries, but the results of the introduction of the global output gap in the Phillips curve are dubious (Csonto, Huang and Tovar, 2019).

Chart 9 • Euro area longer-term inflation expectations | Percentage



Sources: ECB, Consensus Economics and Refinitiv (Banco de Portugal calculations). | Note: Inflation swaps correspond to monthly averages.

Chart 10 • Euro area longer-term inflation expectations – indications of de-anchoring



Sources: ECB, Refinitiv and Banco de Portugal. | Notes: Left panel: probability density function of 4/5-year ahead point forecasts of the participants in the ECB Survey of Professional Forecasters. Right panel: coefficient of the regression of daily changes of long-term inflation swap rates (5-year, 5-year ahead) on changes of short-term rates (1-year, 1-year ahead).

The low levels of longer-term inflation expectations can be viewed as both a cause and a consequence of low inflation rates, to the extent that they may reflect doubts as to whether the central bank can deliver on its mandate. The absence of an explicit lower bound for the ECB's objective, even after the strategy review in 2003, may have fuelled perceptions that the ECB would be more tolerant of low inflation than high inflation.[21] Furthermore, the expectation that the lower bound on interest rates may be binding more frequently than in the past,[22] together with doubts about the effectiveness of non-standard instruments,[23] may have contributed to expectations that inflation will remain below the ECB's objective for a protracted period.

21. Empirical evidence is inconclusive as to the symmetry of the reaction function of the ECB's interest rate, given that it supports two different characterisations: an asymmetric reaction around a 2% inflation objective and a symmetric reaction around a lower inflation objective (Rostagno et al., 2019; Hartmann and Smets, 2018 and Paloviita, Haavio, Jalasjoki and Kilponen, 2017).
22. This expectation may affect consumption and pricing decisions of households and firms and contribute to a reduction in actual and expected inflation even when the interest rate is far from its lower bound (Hills, Nakata and Schmidt, 2019 and Amano, Carter and Leduc, 2020).
23. Available evidence suggests that non-standard measures have had significant effects on financial conditions and economic activity, but less clearly on inflation. However, high uncertainty surrounds their magnitude (BIS, 2019).

Finally, a monetary argument provided in the literature to explain low inflation levels in advanced economies is that inflation may be currently more determined by long-term mechanisms. According to the Fisher relation,[24] current inflation levels were to be expected given the maintenance of interest rates at low levels over a long period and expectations that they will persistently remain so. Some authors argue that permanent monetary shocks lead to similar permanent changes in inflation and the nominal interest rate (Uribe, 2020, and Valle e Azevedo, Ritto and Teles, 2019). The short-term effects of these permanent shocks are identical to long-term effects, which stands in contrast to the usual trade-off between inflation and the nominal interest rate if monetary shocks are temporary.

- Reflections on the future strategy

How can the monetary policy strategy contribute to better anchor inflation expectations and mitigate the risk of hitting the lower bound on the interest rate?

From this standpoint, it is important to assess which elements of the strategy most enhance the central bank's credibility, i.e. the elements that better assure economic agents as to the ECB's ability and commitment to deliver on its mandate.

The formulation of the monetary policy objective is among the elements warranting a review. In this regard, the most frequent proposals are the adoption by the central bank of a higher inflation objective or of a clear commitment to accept higher inflation in the future following persistent negative deviations from the objective in the past (make-up strategies). Although these proposals may have their merits to reduce the occurrence of the lower bound on the interest rate in the future, it is necessary to assess their risks and usefulness given the current low inflation and low interest rates environment over a protracted period. Another relevant consideration is to what extent can the formulation of the objective affect the pricing mechanism. Can a more explicit setting than the current one regarding the objective's symmetry contribute to better anchor longer-term inflation expectations in an environment of interest rates close to their lower bound?

Another element worth considering is the role of the ECB's secondary objectives when formulating the strategy. So far, these objectives have been taken into account via the flexibility introduced by the medium-term orientation to maintain price stability. However, the experience of the last decade has shown that concerns about the outlook for economic activity and employment have played a major role in monetary policy decisions, potentially beyond that implied in the strategy. Could there be benefits from giving a more explicit role to secondary objectives without jeopardising the primary focus on price stability? By facilitating the communication of monetary policy decisions and bringing them closer to how they are taken in practice, it could make the central bank more credible. Another consideration in this regard is whether it would be advisable to clarify how patient the central bank must be in returning inflation to its objective conditional on the shocks affecting the economy.

Turning to the economic and monetary analyses, it would be appropriate to investigate whether the current approach is still the best suited to assess risks to price stability and to explain decisions to the public so as to better anchor expectations.

24. The Fisher relation establishes that, in the long run, the nominal interest rate must be equal to the natural real interest rate (exogenous to monetary policy) plus expected inflation.

Finally, as regards non-standard instruments, it is important to gauge their contribution to circumvent the constraints imposed by the lower bound on interest rates. In particular, it is important to look into the effectiveness and potential secondary effects of each instrument[25] when deciding which should be part of the future framework for monetary policy, i.e. which contribute more efficiently to the attainment of the price stability objective.

The present circumstances, characterised by a protracted period of low inflation and low interest rates, pose a further challenge to the future monetary policy strategy. How can the strategy minimise risks of the economy remaining at the lower bound on the interest rate for an indeterminate period of time?

Monetary analysis could help assess to what extent inflation is being determined by long-term mechanisms. In a situation where interest rates are at their lower bound, how to adapt monetary analysis? If current inflation is being more determined by these mechanisms, it would be important to reflect on which elements of the strategy could help clarify the level towards which the interest rate should converge in the long run and, as such, anchor economic agents' expectations about the interest rate and, therefore, inflation. In this context, it would be useful to reassess the role played by communication as a monetary policy instrument, particularly forward guidance on interest rates. Can the natural rate of interest play a key role as a communication device?

The non-homogeneous transmission of monetary policy to financing conditions

The global financial crisis and the euro area sovereign debt crisis have shown how detrimental to the economy financial instability can be and exposed specific vulnerabilities in the euro area that may hamper the transmission of the single monetary policy. One of the lessons from the crises is that price stability is a necessary, but not sufficient, condition for financial stability. Fragilities in the banking system and dysfunctional markets can become an obstacle to monetary policy transmission and warrant a response from the central bank to ensure liquidity even if price stability is not at stake. This raised doubts as to the pre-crisis view that the monetary authority must respond to the build-up of financial imbalances and asset price imbalances only to the extent that they pose risks to price stability.[26]

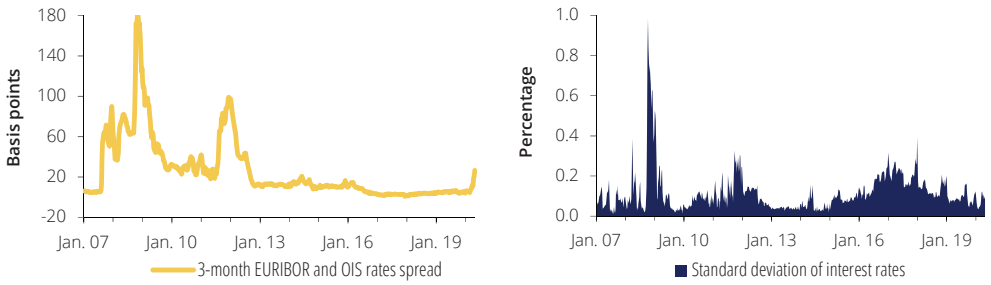
For monetary policy to be effective, it is crucial that changes in official interest rates be effectively passed through to money market rates and, in turn, to financing costs that are ultimately relevant for price stability. Shocks on banking systems and sovereign debt markets in the euro area have disrupted the interest rate transmission channel. At an early stage in the crisis, money markets became highly fragmented as banks' perceived credit and counterparty risks rose, which resulted in high differentials between unsecured interbank rates (such as the EURIBOR) and typically risk-free rates (OIS rates) and greater dispersion in market interest rates (Chart 11). Increased risk aversion led banks to resort to ECB's intermediation and to replace their transactions in the unsecured interbank market with that in the secured market. At a later stage, fragmentation expanded to euro area sovereigns, which amplified the banking sector crisis due to the close links between the

25. For instance, the effects of a protracted negative interest rate policy on banks' profitability or the effects of asset purchases on the availability of safe and liquid financial assets.

26. For a discussion on the interplay between monetary policy and financial stability, see the Special issue "Monetary policy and financial stability: an open debate", *Economic Bulletin*, spring 2011.

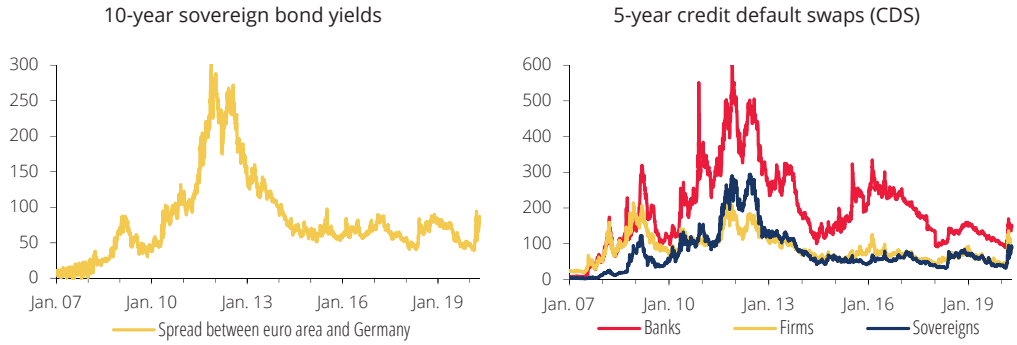
two (Chart 12). As a result, financial conditions became fragmented across countries and, at the peak of the crisis, fears of EMU disintegration emerged. Banks' financing costs rose further with an increasing divergence between banks in more and less vulnerable countries. Pressure on banks' and firms' balance sheets intensified and financing conditions for households and firms became heterogeneous across countries. The strong disruptions in the transmission mechanism, particularly in the most vulnerable countries, brought the importance of the credit channel to the forefront.

Chart 11 • Euro area money market interest rates



Sources: Bloomberg and NEX Data (Banco de Portugal calculations). | Notes: Average weekly data. Right panel: Standard deviation of EONIA, repo funds rate (RFR), 1-week overnight index swap (OIS) and 3-month German sovereign bond yields.

Chart 12 • Risk of euro area sovereigns, banks and firms | Basis points



Sources: ECB, Bloomberg and Refinitiv (Banco de Portugal calculations). | Note: CDS correspond to the aggregation of the four largest euro area economies in the case of sovereigns (2019 GDP weights) and to Europe in the case of banks and firms (ITRAXX).

Following the introduction of ECB's standard and non-standard measures, fragmentation reversed somewhat, mostly from 2012 onwards. However, as of 2015, money markets have started to show signs of a segmentation stemming from financial regulatory changes and distortions resulting from the high degree of intermediation by the central bank. The ECB stepped up its primary liquidity provision and reduced the availability of financial assets considered safe and liquid, following the implementation of its expanded asset purchase programme. However, these instruments are imperfect substitutes given that assets are alternatively used as collateral[27] and are used by a wide set of financial institutions, including non-banks. Although non-banks can sell assets to the central

27. Government bonds are the main type of collateral used in secured operations.

bank, they do not have access to the deposit facility at the ECB. In this context, from 2015 onwards, secured and unsecured money market interest rates have become more dispersed and less aligned with policy rates than in the past (Chart 11). More recently, the COVID-19 pandemic and the uncertainty surrounding its economic effects triggered additional financial market turmoil, which, in the meantime, has been partially mitigated by the timely response by authorities, in particular the ECB.

Some of the changes seen in financial markets in the post-crisis period seem to be of a more structural nature and may have changed how monetary policy affects financing conditions in the economy in a lasting way.

One of those changes is the emergence of geographically fragmented financial markets, with more risk-averse participants. There are indications that some fragmentation subsists in the euro area, more specifically in cross-border interbank transactions, although at much lower levels than those seen during the crises (ECB, 2018). Moreover, it cannot be ruled out that fragmentation may re-emerge, should perceived risks change, thus jeopardising a homogeneous monetary policy transmission. Although the institutional changes seen over the past decade (reviewed below) have enhanced the euro area's ability to deal with crises, reduced the bank-sovereign nexus and improved the ECB's ability to operate effectively, there are still limitations and incomplete domains. The substantial changes in financing conditions for several sectors/countries in the wake of the pandemic crisis clearly illustrate this (Chart 12).

Other changes with likely persistent effects on euro area money market functioning include more stringent regulatory requirements and a higher preference for safe and liquid assets. The increased importance of non-banks is also a relevant structural change seen over the past decade. Real economy financing by non-bank entities has the potential to considerably influence monetary policy transmission, conditional on the nature and magnitude of these activities.[28] As non-banks get more involved in business areas traditionally dominated by the banking sector (such as the transformation of maturities), the central bank risks losing some control on transmission if it only deals with banks and depends exclusively on them to supply liquidity to the rest of the economy.[29] In this context, it should be noted that money market segmentation in recent years, partially reflecting non-bank activity, may become more muted in the future if excess liquidity and the shortage of safe and liquid collateral in the euro area possibly decrease. However, it is not to be expected that it will disappear altogether. Persistent interest rate dispersion across money market segments raises the issue of the central bank's control over short-term rates.

- Reflections on the future strategy

How can the strategy ensure homogeneous monetary policy transmission to financing conditions amid financial instability?

As regards the objectives guiding the conduct of monetary policy, it is worth reassessing the role ascribed to financial stability and liquidity provision by the central bank. Will it be enough to use, as in the past, the monetary analysis and the flexibility of the medium-term orientation to formulate the monetary policy response so as not to add to the build-up of financial imbalances? Should the strategy be more explicit on the role of liquidity provision by the ECB when the economy faces a crisis

28. The importance of banks for total external financing of non-financial corporations has decreased in the euro area, from 15.7% in 2007 to 10.4% in 2019.
29. See d'Avernas, Vandeweyer and Pariès (2020) for an analysis on how the importance of non-banks can affect the central bank's ability to deal with a liquidity crisis.

that ultimately threatens monetary policy transmission? Clarifying monetary policy practice in the strategy may remove some discretionary power, but can improve the ability to anchor expectations and to communicate the necessary actions.

The strong interaction between the financial and real domains highlighted by the crises raises the question of whether the two pillars of the strategy (economic and monetary analyses) should be integrated or not. Another relevant issue is how monetary analysis can reflect structural changes in the financial system, such as the growing importance of non-banks.

The issues of instruments and access to monetary policy operations also warrants consideration. It is important to assess which are the most effective instruments to address fragmentation problems and under which circumstances they should be used. The growing role of non-banks in financial intermediation raises questions on the costs and benefits of different institutions having access to the ECB's operations. Another aspect interacting with non-banks activity is the choice of which instruments to use when the central bank needs to expand its balance sheet,[30] given that this choice is not neutral for the availability of high-quality collateral nor for euro area market interest rates and, consequently, for an effective monetary policy transmission.

Institutional changes to the architecture of EMU

The impact of the global financial crisis and the euro area sovereign debt crisis and the negative feedback loop between banks and sovereigns have made it clear that the incomplete architecture of EMU has seriously impaired the euro area's ability to deal with crises, including the ECB's ability to act and the effectiveness of its monetary policy. In this context, multiple efforts were made to put in place reforms and institutional changes with a view to deepening EMU and making the euro area more resilient to crises.[31]

The need of a Banking Union to safeguard financial stability and create a level playing field in the euro area as a whole has been readily acknowledged.[32] The Banking Union, whose establishment was agreed in June 2012, rests on three key pillars: (i) a single supervision for banks, (ii) a single resolution mechanism for failing banks, and (iii) a European deposit insurance scheme. The first two pillars were implemented in November 2014 and January 2016, respectively, and have ensured a uniform application of prudential rules, a consistent and equally effective supervision regardless of the bank's country and an orderly resolution of failing banks, while minimising costs for taxpayers. Despite the progress made, several aspects of the Banking Union are still incomplete, most notably the lack of a European deposit insurance scheme. Implementing the third pillar is crucial to maintain depositor confidence, prevent bank runs, contribute to break the bank-sovereign nexus and safeguard financial stability, thereby supplementing the other two pillars.[33]

The sovereign debt crisis showed that the lack of a lender of last resort for euro area sovereigns could jeopardise the future of EMU. At the onset of the crisis, in June 2010, a temporary solution was put in place – the European Financial Stability Facility – that was followed, in October 2012, by the establishment of a standing mechanism to provide support to euro area countries threatened

30. The balance sheet may be expanded with the outright purchase of assets or credit operations and may have different counterparts on the liabilities side, including deposits/reserves of different counterparties or safe financial assets made available by the central bank.
31. For a detailed analysis of these changes, see Amador, Valle e Azevedo and Braz (2019).
32. The Four Presidents' Report presented in the June 2012 European Council articulated the four building blocks (financial, fiscal, economic and political) to correct the main weaknesses in the architecture of EMU.
33. See Panetti (2019) for a discussion on the reasons for a European deposit insurance scheme.

by financing problems – the European Stability Mechanism (ESM). In recent years, negotiations have been under way to reform the ESM with a view to enhancing its operational capacity, which were agreed in principle in December 2019. In April 2020 the ESM granted a special credit line with simplified access to pay for healthcare costs arising from the COVID-19 pandemic.

The framework for national fiscal and economic policy coordination was also reformed to overcome the weaknesses exposed by the crises. Changes were made towards more robust economic governance and better policy coordination among Member States, with the purpose of preventing imbalances and contributing to convergence and stability in the EU as a whole. The 2011 ("six-pack") and 2013 ("two-pack") reforms placed more emphasis on public debt and expenditure control, reinforced fiscal rules and improved monitoring of macroeconomic imbalances. However, these reforms had mixed results and are currently under review to enhance their effectiveness and mitigate a number of weaknesses, including to reduce the procyclicality of fiscal policy and the existing highly complex rules. In March 2020 fiscal rules were suspended for the first time, to make it possible to deal with the economic consequences of the pandemic.

These institutional changes – most notably the Banking Union and the ESM – created the conditions for the ECB to act more decisively from 2012 onwards to address financial fragmentation in the euro area associated with the sovereign debt crisis, while respecting the monetary financing prohibition established by the TFEU. An example was the adoption of the OMT programme. Changes have also helped put the banking sector in a better position to transmit monetary policy stimulus to the rest of the economy.

Although the euro area is now more resilient to shocks, further progress is still needed on deepening the EMU.[34] As it is a highly integrated economic and financial area, it should be managed via common decisions requiring robust instruments in domains other than monetary policy. The existence of these instruments would also allow for a more effective transmission of monetary policy measures, with less secondary effects. In particular, it is still key to complete the Banking Union, enhance the resilience of the financial sector, ensure solid countercyclical fiscal policies and step up private and public risk-sharing. Risk-sharing in the euro area is still more limited than in other monetary unions, such as the United States. The increase in private risk-sharing, whereby agents diversify their assets across borders through integrated capital and banking markets, can help to mitigate asymmetric shocks. The increase in public risk-sharing, through a common fiscal policy backstop or shared backstops that safeguard financial stability in Member States in times of crisis, can help to attenuate domestic or euro area-wide recessions, as is the case of the COVID-19 pandemic crisis. Thus, fiscal policy could supplement the single monetary policy's role in the presence of large macroeconomic shocks.

- Reflections on the future strategy

How relevant are post-crisis institutional changes and the remaining limitations to the architecture of EMU for the formulation of the monetary policy strategy?

An important topic warranting reassessment is the interaction between monetary policy and other macroeconomic policies. Turning to fiscal policy, the desirability of cooperation with monetary policy in extreme crisis situations or the challenges that a lack of euro area-wide central fiscal capacity and safe assets pose to the ECB compared with other central banks remain an open issue. With regard to macroprudential policy, the question arises as to the desirable coordination with monetary

34. ECB (2020) includes a summary of open questions on the various elements of the EMU deepening.

policy, given recent changes, such as the Single Supervisory Mechanism and the macroprudential framework. Other relevant issues are the potential risks of fiscal and financial dominance amid a massive expansion of the ECB's balance sheet and how to prevent them.

The 2020-21strategy review

On 23 January 2020 the Governing Council launched a review of its monetary policy strategy.[35] Its purpose is to ensure that the strategy is the most suited to deliver, now and in the future, the primary objective of maintaining price stability.

The review of the strategy covers all aspects of monetary policy, taking the mandate as laid down in the Treaty as given. The review does not focus on what the ECB does, but rather on how it does it. The elements that are up for reassessment are as follows:

- The quantitative formulation of price stability;
- How the economic and monetary analyses should be updated;
- How employment, financial stability and climate change[36] can be relevant in the pursuit of the ECB's mandate;
- The effectiveness and the potential side effects of the monetary policy instruments developed over the past decade;
- The current communication practices, i.e. how the ECB interacts and communicates so that all citizens understand its mission and decisions.

The ECB's strategy review will be guided by a thorough analysis and take an open-minded approach, while engaging with all stakeholders. For that purpose, various working groups were set up, comprising ECB and euro area NCB staff that will look into topics relevant to the strategy review (Figure 2). The Governing Council is also seeking ideas from society at large throughout Europe, including academics, members of the European Parliament and civil society. To this end, the Eurosystem will interact with the general public, civil society organisations and academia. Moreover, euro area citizens are invited to send, in writing, ideas and concerns on the ECB's monetary policy strategy using the online ECB Listens Portal.[37] The ideas and points of view shared in these events and through the Portal together with the work carried out by the aforementioned staff will be taken into account in the Governing Council's decisions.

In early April, the ECB decided to postpone the conclusion of its monetary policy strategy review in the wake of the shock caused by the COVID-19 pandemic, which may also influence the reflection on the future strategy when it is resumed.

The conclusion of the review, initially foreseen for the end of 2020, was postponed to mid-2021 given the need to allocate Eurosystem resources on addressing the challenges posed by the pandemic crisis.

On the other hand, this crisis may influence the reflection on the strategy due to the likely extension of a number of macroeconomic trends already in place and given that it brought to the forefront some underlying vulnerabilities and posed new challenges.

35. https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200123~3b8d9fc08d.en.html.
36. It should be noted that protecting and improving the quality of the environment is one of the EU's goals and that the risks associated with climate change may have implications for the conduct of monetary policy, including its transmission.
37. https://www.ecb.europa.eu/home/search/review/html/form.en.html.

Figure 2 • Work streams created in the context of the ECB's monetary policy strategy review

Source: ECB.

The exceptional nature of the shock caused by the COVID-19 pandemic and the uncertainty about its effects on medium to long-term inflation may affect economic agents' inflation expectations. Turning to interest rates, increased risk aversion and the resumption of asset purchases by the ECB may reduce the natural rate of interest further and extend the period the policy rate stays at its lower bound. The pandemic has made it clear that the remaining shortcomings in terms of public risk-sharing and common financial backstops still pose a risk to a homogeneous monetary policy transmission in the euro area. In any case, the timely response of authorities has shown that the euro area is more capable of dealing with crises than in the past.

In this context, the reflection on how to minimise the risks of the economy remaining at the lower bound on the interest rate and how to ensure a uniform policy transmission across euro area countries may become more prominent in the strategy review. The desirability of cooperation between monetary policy and fiscal policy in the face of major shocks has also become increasingly relevant in the wake of the pandemic crisis. Moreover, expectations of a marked increase in public debt in some countries following the crisis and the ensuing financing needs may pose further challenges to the strategy associated with fiscal dominance risks.

Final considerations

The ECB's monetary policy strategy comprises two main elements: the quantitative definition of price stability and the two (economic and monetary) pillars supporting the analysis of the outlook for inflation and risks to price stability. The initial strategy adopted in 1998 was clarified in 2003.

Since then, the implementation of the two pillars has evolved in tandem with arising challenges, most notably the legacy of the global financial crisis and the euro area sovereign debt crisis. At the same time, the toolkit used by the ECB has been expanded and communication practices have been improved. To sum up, the ECB has adjusted its monetary policy and responded decisively to the challenging circumstances of the past decade, making use of the possibilities and the flexibility incorporated in its strategy and its operational framework.

Some of the macroeconomic changes seen over the past decade are of a more persistent nature and may be relevant to the monetary policy strategy in the future. The reduction in the natural rate of interest has limited the scope for the standard instrument. In turn, the protracted low inflation environment in the euro area may warrant a different strategy than that adopted in the past

to address high inflation. The specific vulnerabilities in the euro area brought to the forefront by the crises, the remaining limitations in the architecture of EMU and other structural changes in the financial system may continue to hamper the homogeneous transmission of the single monetary policy. Some of these trends and fragilities have become increasingly evident in the wake of the shock caused by the COVID-19 pandemic.

In light of these changes, the ECB's monetary policy strategy review launched in January 2020 is perfectly justified. In this exercise, it is key to think about the most effective quantitative formulation of the price stability objective to anchor economic agents' inflation expectations, in a juncture where the probability that the interest rate will be closer to its lower bound is higher than in 1998 and 2003. Another element worth discussing is the relevance that should be ascribed to the secondary objectives laid down in the Treaty and how to best accommodate them. The effectiveness of non-standard instruments already introduced or to be introduced in the operational framework as well as the risks associated with their use must also be assessed. The interaction of monetary policy with other macroeconomic policies, such as fiscal policy, is yet another topic that should be given some thought and which has become more relevant following the pandemic crisis. Finally, the possibility that the current low inflation and low interest rate environment will persist for an even longer period poses an additional challenge to the design of the new ECB strategy.

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