

ECONOMIC BULLETIN

THE PORTUGUESE
ECONOMY IN 2021

MAY 2022



BANCO DE
PORTUGAL
EUROSYSTEM

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I The Portuguese economy in 2020

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1 Overview

The Portuguese economic activity grew by 4.9% in 2021, still standing below its pre-pandemic level. The growth recorded in the euro area was similar (5.3%) and the level of Gross Domestic Product (GDP) of the last quarter of 2019 was reached at the end of the year. The deeper impact of the pandemic on the Portuguese economy reflected the higher share of tourism exports. The sectoral composition of activity continued to be different from the pre-pandemic period: Gross Value Added (GVA) remained lower in trade, accommodation and food services, and other services implying high personal contact (cultural and sports-related), but it is considerably higher in communication and information services and construction.

The labour market was buoyant throughout the year. Employment benefited from public support policies and remained resilient during the pandemic, particularly in open-ended contracts and for workers with higher experience and qualifications. Despite growing in 2021, hours worked had not yet recovered their pre-pandemic level by the end of the year. Average compensation per employee accelerated compared to the previous year, increasing by 5.5% in the two years of the pandemic, partly due to the rise in the minimum wage. The participation rate resumed its upward path, following the fall in the previous year, and the unemployment rate stood at 6.6%, returning to that of 2019.

Households saw an increase in disposable income and a decrease in savings. This increase in income supported the recovery in consumption, which was more marked in non-food, non-durable consumer goods, and durable goods. At the end of the year, private consumption continued to show a different composition and was lower than that of the pre-pandemic period. The household savings rate decreased from 12.7% in 2020 to 10.9% in 2021 but remained above its pre-pandemic level (7.2%). Household deposits continued to grow strongly, by 6.6%, while consumption loans increased by 2.7%.

Investment grew strongly in 2021, in all components and institutional sectors. The recovery was more marked in machinery and equipment, and construction, despite some constraints on access to materials and labour force and an increase in their cost. By institutional sector, there was a strong recovery in household and corporate investment, in tandem with the continued important contribution of public investment. For households, new loans for house purchase grew markedly, reflecting the increase in the number of debtors amid reduced uncertainty stemming from the pandemic. Firms continued to benefit from favourable financing conditions, particularly from more favourable interest rates and longer maturities in State-guaranteed credit lines and, in the first three quarters of the year, credit moratoria.

The general government deficit stood at 2.8% of GDP in 2021, down by 3.0 p.p. from the previous year. These developments reflect the recovery in economic activity (1.2 p.p.), the decrease in temporary measures not associated with the pandemic (0.8 p.p.) – in particular the refund of a fee paid in advance to the European Financial Stability Facility (EFSF) and lower expenditure to support the financial system – and a reduction in interest outlays (0.4 p.p.). The fiscal policy stance tightened, although the impact of the pandemic-related support measures was similar to that of the previous year. The government debt ratio declined to 127.4% of GDP at the end of the year, largely due to nominal growth in activity as well as the reduction in deposits.

Inflation rose to 0.9% in 2021, mainly owing to energy price developments, and as a result of external pressures. The rate of change in the Harmonised Index of Consumer Prices (HICP) increased by 1.0 p.p. from 2020. In annual average terms, there was an increase in non-energy industrial goods prices, following several years of decreases, while services prices posted a nil change. The increase in inflation has intensified and broadened throughout the year. The negative inflation differential vis-à-vis the euro area widened mainly because of energy prices, reflecting differences in the structure and functioning of those markets.

The Portuguese economy's net lending capacity improved. The reduction in the general government deficit was only partly offset by lower household savings. The current and capital account balance increased from 0% to 0.7% of GDP but remained below that recorded in 2019. The goods account deficit deteriorated due to volume and terms of trade effects, mainly because of rising energy prices, where Portugal has a deficit position. The services account surplus increased slightly and particularly the balance of travel and tourism was about half of that recorded in 2019. The increase in transfers from the European Union (EU) boosted an improvement in the income and capital account surplus. The international investment position became less negative, from -105% of GDP to -96% at the end of 2021.

The Portuguese economy went through the pandemic period in a manner comparable to that of other European economies. Support from economic policies proved essential to preserve productive capacity, despite some sectoral recomposition. The persistence of changes in the relative weight of the productive sectors and in consumption patterns is something that only time can confirm. In terms of risks, those stemming from high public and private indebtedness remain dormant. Disruptions caused by rising energy prices and the shortage of a number of essential goods pose a new challenge for the world economy, with negative consequences for activity and mostly, inflation rates.

2 External environment

Global economic activity rebounded in 2021, albeit with differences across regions.

Global gross domestic product (GDP) grew by 6.3% in 2021 (Table I.2.1). In advanced economies, growth was stronger in the second quarter, reflecting the reopening of economies amid the reduction of infections. Activity was limited in the second half of the year largely owing to supply-side constraints. As economies reopened, demand for goods increased strongly, while some raw materials and intermediate goods remained scarce. Consequently, disruptions in supplies emerged, with congestion in ports and a scarcity of ships and containers resulting in delays in deliveries and limiting production (Chart I.2.1). In the last quarter of the year, activity was still impacted by a resurgence of the pandemic and some containment measures, particularly in the euro area, despite a smaller effect than in previous waves. Over the year, GDP grew by 5.7% in the United States and 5.3% in the euro area, with a higher contribution from private consumption, while the recovery in investment was limited by supply constraints. Activity in emerging market economies grew by 6.8% in 2021, despite a slowdown on account of pandemic developments and delays in vaccination campaigns.

Developments in economic activity in the euro area were uneven across countries and sectors of activity. The differences were related to pandemic developments and the structure

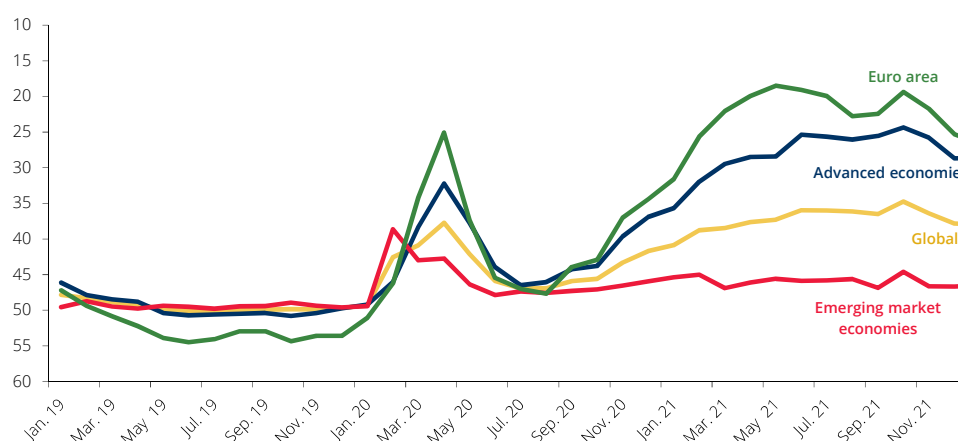
of the economies, most notably their exposure to sectors more contact-intensive, such as tourism, and supply-side constraints. Among the four largest economies, activity reached its pre-pandemic level only in France, with a 7.0% annual growth. GDP grew by 6.6% in Italy, 5.0% in Spain and 2.9% in Germany. In the euro area, the strong recovery in services activity implied a rebound to pre-pandemic levels at the end of the year, exception for high contact-intensive services.

Table I.2.1 • World GDP and trade | Percentage and index

	Annual rate of change			Quarter-on-quarter rate of change				Index 2019 Q4=100
	2019	2020	2021	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2021 Q4
World GDP	2.9	-2.3	6.3	0.8	0.4	1.6	1.7	104.9
Advanced economies	1.8	-4.8	5.2	0.6	1.9	1.0	1.1	101.6
USA	2.3	-3.4	5.7	1.5	1.6	0.6	1.7	103.2
United Kingdom	1.7	-9.4	7.5	-1.2	5.6	1.0	1.0	99.6
Euro area	1.6	-6.5	5.3	-0.1	2.2	2.3	0.3	100.2
Emerging market economies	3.3	-1.4	6.8	0.9	-0.7	2.0	2.2	107.1
China	5.8	2.2	8.1	0.3	1.3	0.7	1.6	110.3
World imports of goods	-0.4	-5.2	10.7	3.3	2.1	-1.0	2.7	108.1
External demand for Portuguese goods and services	2.2	-11.1	9.3	1.0	2.6	1.2	2.0	100.4
External demand for Portuguese goods	1.9	-11.1	20.7	3.7	6.2	4.3	9.5	119.8

Sources: ECB and CPB (Banco de Portugal calculations). | Notes: External demand of goods and services computed by the ECB as the weighted average of imports volume growth of the main trading partners of Portugal. External demand of goods computed as the average of imports volume growth weighted by its share in Portuguese exports, considering the available countries in the CBP Netherlands Bureau for Economic Policy Analysis database, representing around 90% of Portuguese exports in 2020.

Chart I.2.1 • Suppliers' delivery times | Diffusion index (inverted scale)



Source: IHS Markit. | Note: Suppliers' delivery times PMI for manufacturing; values below 50 point to a deterioration in delivery times.

Global trade and external demand for Portuguese goods and services grew strongly in 2021, slowing down in the second half of the year. The global volume of goods imports grew by 10.7% in 2021, which was sharper in emerging market economies (Table I.2.1). In the second half

of the year, disruptions in global supply chains restrained the pace of global trade growth. External demand for Portuguese goods and services grew by 9.3% in 2021, limited by an incomplete recovery in tourism-related services.

Global inflation rose in a broad-based manner throughout the year and to historically high levels. In the OECD countries, year-on-year inflation reached 6.6% in December 2021, its highest level since 1991 (Table I.2.2). In annual average terms, inflation was 4.0% (2.9% excluding food and energy). The increase in inflation was broadly based across various types of goods and regions, largely reflecting the rise in energy prices and the strong recovery in global demand alongside insufficient supply (Chart I.2.2). In the United States, year-on-year inflation stood at 7.0% in December, the highest level in the last 40 years, to which labour market pressures and the consequent increase in wages also contributed. Year-on-year inflation in the euro area stood at 5% in December.¹ The rise in energy prices, notably for oil, gas and electricity, contributed to half of this change. Supply-side limitations have also contributed to price increases. In turn, labour costs have remained subdued, as employment support programmes have come to an end and workers have returned to their jobs. Inflation expectations rose throughout the year, approaching the European Central Bank's (ECB) target of 2% over the medium term.

Table I.2.2 • Inflation in major economies | Average annual rate of change and year-on-year rate of change in Dec. 21

	2017	2018	2019	2020	2021	Dec. 21
World inflation	2.7	3.0	2.9	2.3	4.0	5.4
OECD countries						
CPI	2.3	2.6	2.1	1.4	4.0	6.6
CPI exc. food and energy	1.9	2.1	2.2	1.8	2.9	4.6
USA						
CPI	2.1	2.4	1.8	1.2	4.7	7.0
CPI exc. food and energy	1.8	2.1	2.2	1.7	3.6	5.5
Euro area						
HICP	1.5	1.8	1.2	0.3	2.6	5.0
HICP exc. food and energy	1.0	1.0	1.0	0.7	1.5	2.6
United Kingdom						
CPI	2.7	2.5	1.8	0.9	2.6	5.4
CPI exc. food and energy	2.4	2.0	1.7	1.4	2.4	4.3

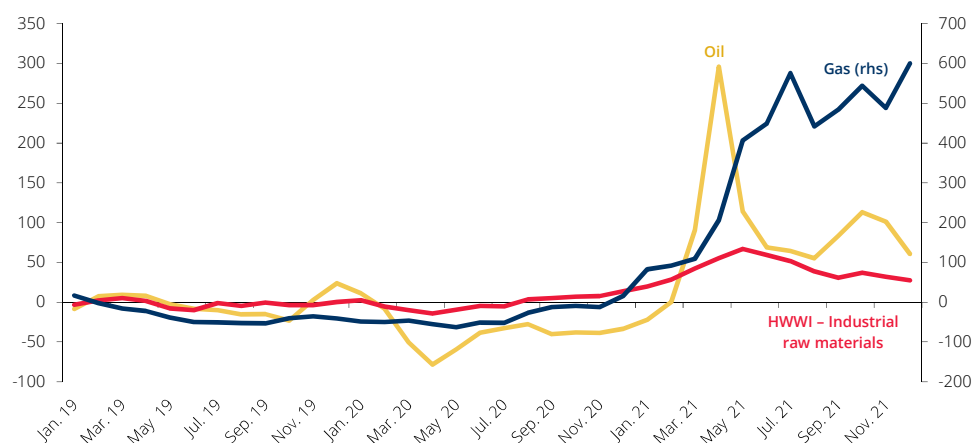
Sources: Eurostat, OECD and Refinitiv (Banco de Portugal calculations). | Note: World inflation – 63 countries average weighted by each country GDP. OECD countries CPI computed by the OECD based on countries CPI; for the United Kingdom it is the CPIH (including owner occupiers' housing costs).

Public policies remained important in supporting income and activity. Public health policies targeted progress in vaccination plans, especially in advanced economies, which allowed for a faster reopening. Compared with the previous year, the focus shifted to the approval of programmes to recover and strengthen economies in areas such as energy transition or infrastructures. In Europe, the Recovery and Resilience Facility (RRF) entered its implementation phase at the end of the year, following the submission and approval of the plans of most Member States, amounting to €445 billion (3% of EU 2019 GDP). Common funding from the Next Generation EU

1. See the Special issue entitled “Why is inflation higher in the euro area?”, *Economic Bulletin*, March 2022.

(NGEU) also started in 2021 through the issuance of €112 billion in debt securities. In the United States, infrastructure investment plans approved by the end of 2021 assume a USD 1,200 billion expenditure (6% of 2019 GDP) distributed over the next ten years.

Chart I.2.2 • Commodities prices | Year-on-year rate of change



Sources: Refinitiv and HWWI. | Note: Reference price of Brent (EUR/barrel) and natural gas for the European market (TTF Dutch; EUR/MWh); monthly averages.

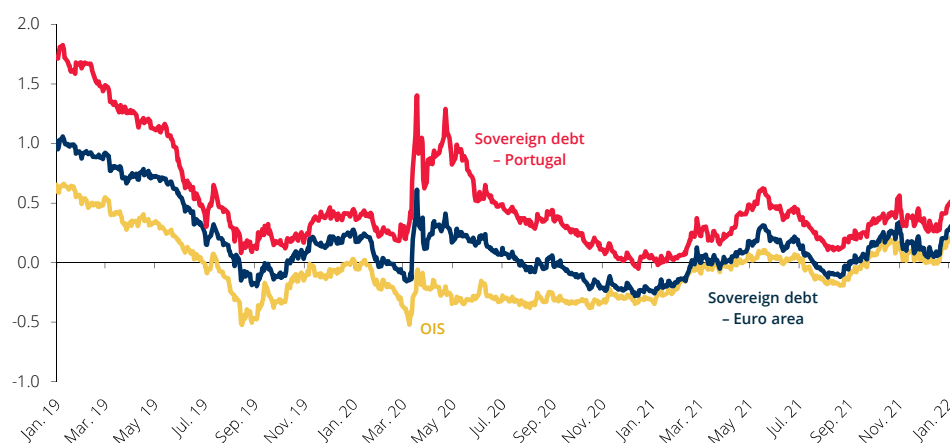
Monetary policies continued to provide accommodation, to varying degrees depending on the conditions of the economies. The US Federal Reserve adjusted its monetary policy stance from November onwards, accelerating the reduction pace of asset purchases amid rising inflation, long-term inflation expectations above the 2% target and a robust labour market. The ECB's monetary policy continued to support favourable financing conditions and was adjusted from September onwards in line with the recovery in activity and rising inflation. The pace of asset purchases was decreased at the end of the year and net purchases under the PEPP ended in March 2022. Policy interest rates remained unchanged, and the ECB communicated that net purchases under the APP would end shortly before the ECB starts raising policy rates. The ECB continued to support the financial intermediation activity of euro area banks with the TLTRO-III. In July the ECB announced changes to its monetary policy strategy, in which it revised the inflation target to 2% over the medium term, with a commitment to symmetry around that figure.²

Overall monetary and financial conditions remained favourable, especially in the first half of the year. Prospects of a strong economic recovery contributed to an increase in risk preference and an appreciation in financial markets. The second half of the year was characterised by a moderate reversal of these trends amid anticipation of monetary policy tightening given inflationary pressures, especially in the United States, and subsequent contagion to the rest of the world. In the euro area, while short-term interest rates remained stable (the 3-month Euribor at -0.6% on average), long-term interest rates were somewhat volatile and ended the year slightly higher, reflecting a rise in inflation expectations and inflation risk premia (Chart I.2.3). Stock markets, particularly

2. See the Special issue entitled "The ECB's new monetary policy strategy", *Economic Bulletin*, October 2021.

in the euro area and the United States, appreciated in a sustained manner and the euro remained relatively stable in the first half of the year. The second half of the year saw some volatility in stock markets and a depreciation of the euro. Comparing year-ends, the stock markets in the United States (S&P500) and the euro area (Eurostoxx) appreciated by 30% and 20% respectively, and the euro depreciated by 2.7% against an extended basket of currencies and 6.7% against the US dollar.

Chart I.2.3 • Euro area 10-year interest rates | Percentage



Source: Refinitiv (Banco de Portugal calculations). | Note: OIS – Overnight Index Swaps. Interest rate on euro area sovereign debt – Rates on 10-year sovereign benchmark bonds from euro area countries weighted by GDP.

3 Financing conditions

Portuguese banks' financing conditions remained favourable in 2021. Bank liabilities increased, albeit at a slower pace than in 2020, reflecting a slowdown in central bank funding, within the context of monetary policy operations (Table I.3.1). Non-financial private sector deposits remained dynamic, reaching record highs in a context of a decline in the household savings rate and a resumption of business investment. In December, the annual rates of change in deposits from households and firms stood at 6.6% and 17.0% respectively (8.1% and 17.9% respectively, in December 2020). The deceleration in deposits in the euro area was more marked than in Portugal, with the rate of change at the end of 2021 being similar to pre-pandemic figures.

Interest rates on new loans to the non-financial private sector remained stable when compared to 2020. For non-financial corporations, the average interest rate fluctuated around 2%, above the average rate of 1.3% in the euro area, and reflected the more favourable interest rates of new State-guaranteed credit lines provided mainly at the beginning of the year (Table I.3.2). The Bank Lending Survey (BLS) reported a tightening of credit standards for loans to firms in the first two quarters of the year, reflecting the perception of an increase in the risk of the economy and specific sectors or firms (Chart I.3.1 – Panel A). These criteria did not change in the last two quarters. For loans to households, the average annual percentage rate of charge (APRC) in Portugal in December stood at 2.4% and 9.7% for the housing and consumption segments (Table I.3.2). In these segments, credit standards remained broadly unchanged throughout the year (Chart I.3.3 – Panels A and B).

In the euro area, average APRCs in 2021 on these loans remained stable at around 1.6% and 5.7% respectively. Euro area banks reported an easing of credit standards for housing loans and a tightening for consumer loans in the first two quarters of the year, both partially reversed during the rest of the year.

Table I.3.1 • Contributions to the year-on-year rate of change of resident banks' liabilities
| Percentage and percentage points

	Dec. 19	Jun. 20	Dec. 20	Jun. 21	Dec. 21
Liabilities (y-o-y rate of change)	0.9	6.3	8.4	5.5	6.7
Non-financial private sector deposits	2.7	4.8	5.5	4.7	5.3
Interbank liabilities	0.3	-0.3	-1.1	-1.4	-0.9
Central bank funding	-0.6	3.4	4.0	2.3	2.4
Debt securities	0.7	1.6	0.9	0.4	0.6
Other liabilities	-2.3	-3.3	-1.0	-0.4	-0.7
<i>Memo:</i>					
Bank deposits (annual rate of change)					
Households – Portugal	3.7	6.2	8.1	7.0	6.6
Households – Euro area	5.3	6.2	7.6	6.8	4.9
Non-financial corporations – Portugal	11.1	19.0	17.9	14.5	17.0
Non-financial corporations – Euro area	6.0	17.5	19.1	7.9	8.1

Source: Banco de Portugal.

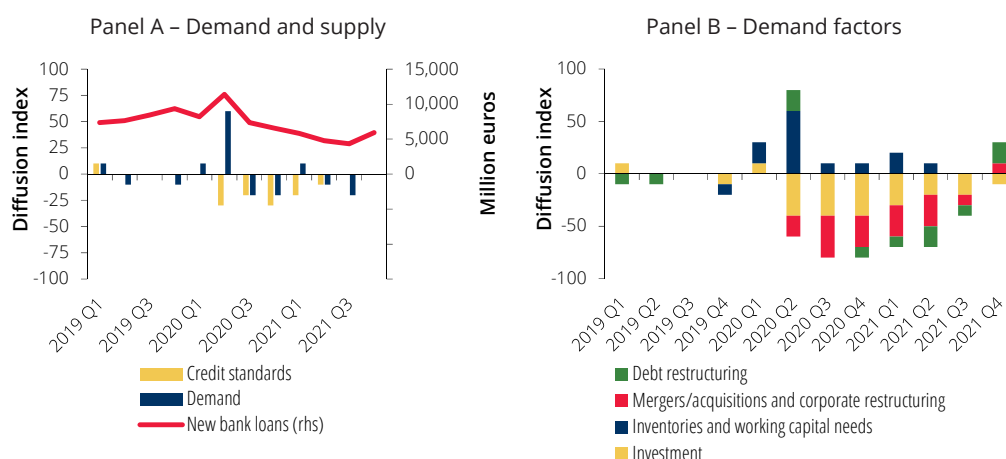
Table I.3.2 • Interest rates and annual rate of change of bank loans to households and non-financial corporations | Percentage

	% of total credit in Dec. 2019	Dec. 19	Jun. 20	Dec. 20	Jun. 21	Dec. 21
Interest rate on new loans						
Households – Housing (APRC)						
Portugal		2.4	2.5	2.3	2.3	2.4
Euro area		1.8	1.7	1.6	1.6	1.6
Households – Consumption (APRC)						
Portugal		10.5	9.7	9.5	9.5	9.7
Euro area		5.9	5.6	5.7	5.8	5.7
Non-financial corporations (AAR)						
Portugal		2.1	1.8	2.0	2.2	2.0
Euro area		1.4	1.4	1.4	1.4	1.2
Loans – Annual rate of change						
Households	100.0	1.1	1.1	1.5	2.9	3.7
of which: housing	78.1	0.1	0.9	1.9	3.3	4.1
of which: consumption	16.2	8.3	4.6	0.6	1.5	2.7
Non-financial corporations	100.0	1.1	6.3	10.0	6.5	4.5
of which: size:						
Very small firms	30.1	6.2	10.8	13.9	11.4	7.8
Small firms	23.9	-1.1	8.7	13.3	8.5	4.2
Medium-sized firms	24.4	-1.9	4.3	6.1	2.4	2.1
Large firms	17.7	-3.1	-3.5	3.8	0.8	2.1
of which: sector of economic activity:						
Manufacturing	18.3	0.2	5.0	9.5	10.1	10.4
Construction and real estate	23.9	1.8	3.5	5.3	3.7	0.0
Trade	17.2	2.2	8.2	9.5	5.0	5.1
Transportation and storage	7.5	-9.3	-9.2	0.4	3.5	0.1
Accommodation and food services	7.4	2.3	18.9	25.3	12.0	7.6
Professional and administrative activities	10.6	1.1	5.8	6.4	5.2	6.2

Sources: Banco de Portugal and ECB. | Notes: The APRC corresponds to the annual percentage rate of charge. This rate represents the total cost of the loan for the borrower, including interest and other (related) charges. The AAR is the annualised agreed rate. The annual rate of change is based on outstanding amounts adjusted for reclassifications and exchange rate and price revaluations. For loans to households and the total of non-financial corporations, the rate is additionally adjusted for securitisation operations and net sales of credit portfolios.

Bank loans to firms continued to increase, but slowed down during the year. The annual rate of change peaked at 10.2% in March, gradually decreasing to 4.5% in December (Table I.3.2). There was a deceleration in loans in most sectors of activity, with the exception of manufacturing and professional activities, and, by size, more pronounced in small and medium-sized enterprises. According to the BLS, demand for credit increased only in the first quarter and declined in the following two (Chart I.3.1 – Panel A). As for the factors that explain these developments, inventory financing and working capital needs contributed to increasing credit demand in the first quarter, while the financing of fixed investment, mergers/acquisitions and corporate restructuring continued to contribute to reducing credit demand (Chart I.3.1 – Panel B). In the euro area, loans to firms also slowed down in the first half of the year, but subsequently accelerated to 4.3% in December. The increase in demand for credit from the second quarter onwards reflected the financing needs of firms, especially for inventories and working capital and for fixed investment.

Chart I.3.1 • New loans and loan demand and supply by resident banks to firms and impact of different factors on loan demand | Diffusion index and million euros



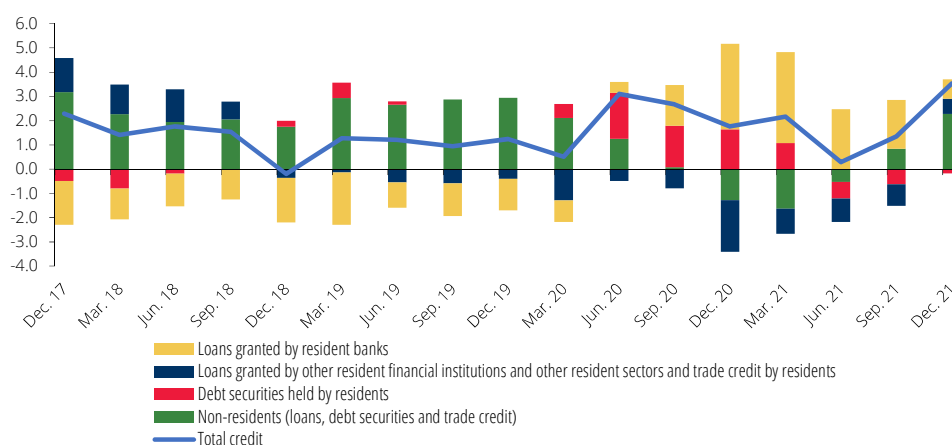
Source: Banco de Portugal. | Notes: The diffusion index is based on the replies to the Bank Lending Survey. The index ranges from -100 to 100, where 0 corresponds to "unchanged". In the case of credit standards, Panel A depicts the additive inverse of the diffusion index. Values higher (lower) than 0 mean less (more) restrictive credit standards and an increase (decrease) in loan demand and a contribution of the factors to an increase (decrease) in loan demand. The diffusion index reflects a qualitative assessment by banks and therefore the sum of the factor contributions does not have to match the index's value for loan demand. New loans are the cumulative amount of the three months of the quarter.

The deceleration in bank loans to firms was the result of a decline in new State-guaranteed loans and an increase in repayments linked to the end of moratoria. The share of State-guaranteed loans in total new loans with maturity above one year decreased over the course of the year (on average, from 47.3% in 2020 to 16.5% in 2021). The share of loans to firms under moratoria increased to around one third of the total between the start of moratoria in March 2020 and June of that year, remaining stable until it converged to zero from September 2021 onwards. Despite their prominence in sectors heavily affected by the pandemic, the fall in loans under moratoria was not accompanied by an increase in the ratio of overdue loans, which reached record lows (2.3% in December 2021 in loans to firms) (Box 1).

In 2021, the contribution of residents to developments in total credit to firms decreased. In turn, credit granted by non-residents through loans, debt securities or trade credits increased,

with a contribution of 2.3 p.p. to the year-on-year rate of change in total credit to firms of 3.5% in December 2021 (which compares with a contribution of -1.3 p.p. in December 2020) (Chart I.3.2). Developments in external financing are influenced by financial transactions carried out by a number of large firms or by smaller firms belonging to economic groups with international connections.

Chart I.3.2 • Total credit to non-financial corporations by funding sector | Year-on-year rate of change and contributions



Source: Banco de Portugal.

Bank loans to households accelerated mainly due to the housing segment. In December, the annual rate of change in loans to households stood at 3.7% (1.5% in the same month in the previous year), reflecting annual rates of change of 4.1% and 2.7% in the housing and consumption segments respectively (Table I.3.2). In the euro area, housing loans and consumer credit also grew more than in the previous year, with annual rates of change of 5.4% and 1.6% respectively.

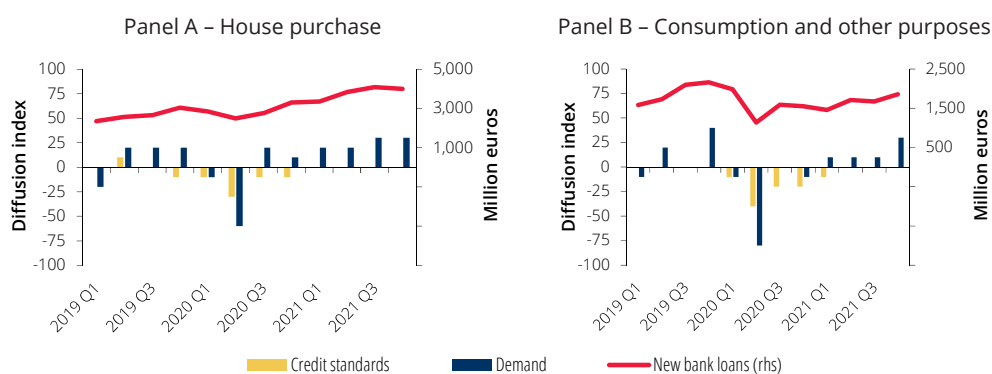
New loans to households for house purchase increased by 32.8% in 2021, reaching, in the third quarter, the highest figure since the first quarter of 2008. Consumer confidence and low interest rates contributed to the increase in credit demand in 2021 (Chart I.3.3 – Panel A). Developments in new loans reflected mainly the increase in the number of debtors, which more than offset the decline observed in 2020, but also the increase in the average loan amount, consistent with the rise in real estate market prices (Box 2). House prices grew by 9.4% in 2021, which compares with 8.8% and 10% in 2020 and 2019, respectively, and the number of housing transactions increased by 20% (-11% and 2% in 2020 and 2019 respectively). The share of the value of transactions financed by new loans stood at 54% in 2021, which compares with an average of 45% in the five years preceding the pandemic. The share of housing loans under moratoria, which stood at around 18% between June 2020 and February 2021, started declining in the second quarter and converged to zero from September onwards, mitigating the acceleration in housing loans through the increase in repayments.

New consumer loans followed the developments in private consumption, decreasing in the beginning of the year and recovering thereafter. In 2021, the share of private consumption (excluding food) financed with credit increased to 5.1% (4.6% in 2020), remaining below the one observed in the pre-pandemic period. The share of consumer credit under moratoria peaked at

13% in July 2020. Its reduction accelerated in the first quarter of 2021, converging to zero from September onwards.

Corporate and household debt ratios stabilised in 2021. After having followed a downward path since 2013, the corporate leverage ratio, measured by total corporate debt as a percentage of corporate assets, stood at 52% in December 2021, which compares with 51.9% and 52.9% at the end of 2020 and 2019 respectively. In December, this ratio stood 9.5 p.p. above the average ratio for the euro area, 0.5 p.p. more than the differential at the end of 2019. Household debt, measured by the ratio of credit to gross disposable income, stood at 97% at the end of 2021 (98% in the euro area), which compares with 98% and 95% at the end of 2020 and 2019 respectively (100% and 98%, respectively, in the euro area).

Chart I.3.3 • New loans and loan demand and supply by resident banks to households | Diffusion index and million euros



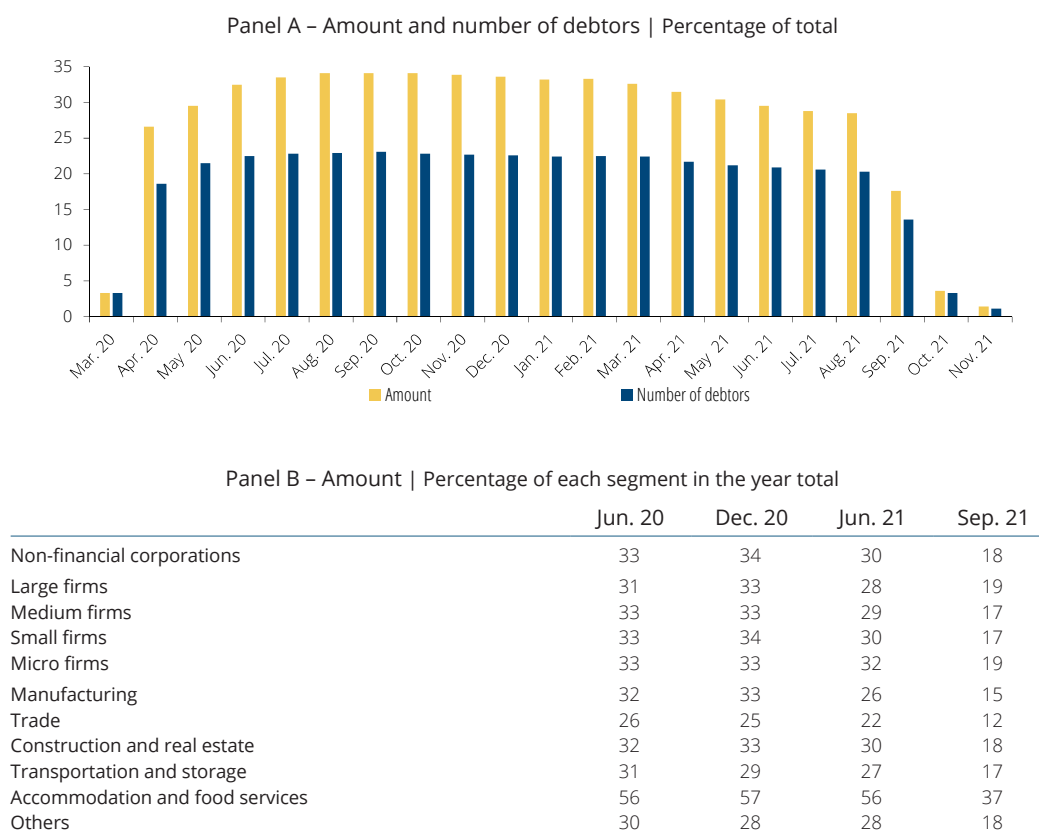
Source: Banco de Portugal. | Notes: The diffusion index is based on the replies to the Bank Lending Survey. The index ranges from -100 to 100, where 0 corresponds to "unchanged". In the case of credit standards, the chart depicts the additive inverse of the diffusion index. Values higher (lower) than 0 mean less (more) restrictive credit standards and an increase (decrease) in loan demand. New loans are the cumulative amount of the three months of the quarter.

Box 1 • Loans under moratoria and State-guaranteed loans to firms: developments and outlook

In the context of the COVID-19 pandemic were approved measures to ensure that Portuguese firms retain their cash and liquidity management capabilities. Some of these measures had a fiscal nature, others were implemented through the banking system. Among the latter, credit moratoria made it possible to extend the deadline for payments to creditor institutions, without giving rise to contractual default. At the same time, State-guaranteed credit lines allowed for more favourable conditions on new loans than those prevailing in the market, more specifically lower interest rates and longer maturities.

Credit moratoria were introduced in March 2020 and expired in December 2021. The share of loans under moratoria was relatively stable, peaking at 34.1% of the total amount (22.9% of the number of debtors) in September 2020 (Chart C1.1). This share was higher in the accommodation and food services sector.

Chart C1.1 • Loans granted to non-financial corporations under moratoria

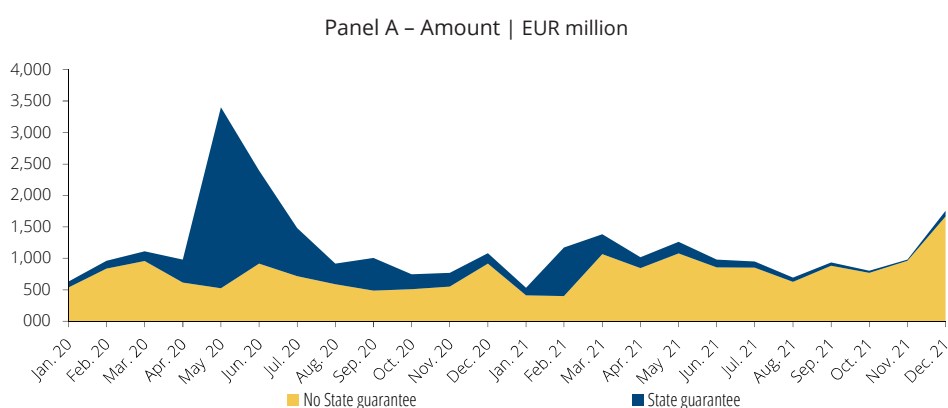


Source: Banco de Portugal. | Notes: The amounts associated with contracts under moratoria and debtors with at least one contract under moratoria are considered in the numerator. The NACE sections are: C (Manufacturing); F and L (Construction and real estate activities); G (Trade); H (Transportation and storage); I (Accommodation and food services); A, B, D, E, J, K, M-U (Others).

State-guaranteed loans contributed significantly to the increase in new loans in 2020, most notably between May and September (Chart C1.2). In 2020, new State-guaranteed loans accounted for around 47% of the total amount of new loans with a maturity of over one year and more than half

of new loans to the accommodation and food services sectors (64%), trade and manufacturing (61% and 60%, respectively) and medium-sized and small enterprises (55% and 61%, respectively). The reduction in new State-guaranteed loans over the course of 2021, associated with a decrease in the amounts available and tighter credit standards – in particular the stance towards the most affected sectors – contributed to the gradual deceleration in total loans during the year. In 2021, around 16% of new loans were State-guaranteed, most notably, yet again, to accommodation and food services (33%) and manufacturing (39%).

Chart C1.2 • New loans granted to non-financial corporations with maturity over one year and with a State guarantee



Panel B – Amount | Percentage of each segment in the year total

	2020	2021
Non-financial corporations	47	16
Large firms	30	27
Medium firms	55	27
Small firms	61	15
Micro firms	33	6
Manufacturing	60	39
Trade	61	11
Construction and real estate	24	3
Transportation and storage	42	5
Accommodation and food services	64	33
Others	35	9

Source: Banco de Portugal. | Notes: Central Credit Registry data. The sample consists of loans granted to private non-financial corporations with maturities over one year. The NACE sections are: C (Manufacturing); F and L (Construction and real estate activities); G (Trade); H (Transportation and storage); I (Accommodation and food services); A, B, D, E, J, K, M-U (Others).

The outstanding amount of bank loans to firms, which had been decreasing prior to the pandemic, increased by 6.1% and 1.8% year-on-year in December 2020 and December 2021, respectively (Table C1.1). These developments stemmed from the behaviour of loans that remained in the credit market (intensive margin) and the difference between new loans and fully repaid loans (extensive margin). In 2020, the lower negative contribution of the intensive margin chiefly resulted from a deceleration in the repayment of loans under moratoria. The higher positive contribution of the extensive margin mainly resulted from the increase in State-guaranteed loans. In 2021, the deceleration in the stock of loans mainly stemmed from the lower positive contribution of the extensive margin, in particular due to a decrease in State-guaranteed loans. The effect of

loans that were under moratoria is still evident, although it reflects the resumption of principal repayments on these loans.

Table C1.1 • Loans granted by credit market participation and by support measures | Year-on-year rate of change in percentage and contributions in percentage points

	Dec. 19	Jun. 20	Dec. 20	Jun. 21	Dec. 21
Year-on-year rate of change (%)	-2.7	2.0	6.1	4.2	1.8
Contributions (pp)					
Intensive margin	-9.0	-8.5	-6.4	-4.0	-5.7
With moratoria	-3.7	-3.7	-1.7	-0.4	-1.7
No support	-5.3	-4.8	-4.8	-3.6	-4.0
Extensive margin	6.3	10.5	12.6	8.2	7.5
With State guarantee	0.0	7.2	10.7	5.4	2.5
No support	6.3	3.3	1.8	2.8	5.0

Source: Banco de Portugal. | Notes: The intensive margin refers to loans that stayed in the credit market and the extensive margin refers to entrants and exits from the credit market. Entrants refers to new loans (loans in the reference period but which do not exist in the same period of the previous year), exits refers to fully repaid loans (loans that do not exist in the period, but that exist in the same period of the previous year), and stayers refers to loans in the period and in the same period of the previous year. Year-on-year rates of change are based on end-of-month outstanding amounts with no adjustments for sales of credit portfolios, reclassifications, write-offs, and exchange rate and price revaluations. A loan that is under moratoria for at least one month between 2020m3 and 2021m12 is considered as "With moratoria"; a State guarantee loan granted between 2020m1 and 2021m12 is considered as "With State guarantee".

In December 2021, around 30% of the total amount of bank loans to non-financial corporations was at some point under moratoria and 12% was associated with a State guarantee granted between 2020 and 2021.

These loans may have higher credit risk, as they are associated with firms more affected by the pandemic. In this context, it is important to analyse overdue and non-performing loans. The amount of overdue loans corresponds to the principal of the loan not repaid on the scheduled dates. For the purposes of this analysis, the default amount corresponds to the total amount outstanding associated with a loan classified by the bank as non-performing because it fails to comply with the payment plan for more than 90/180 days or is likely to fail to do so.

State-guaranteed loans seem to have low levels of risk, reflecting the eligibility criteria for this funding. By contrast, loans under moratoria have higher average risk levels compared with the total portfolio. Information on these loans, which is still limited for the post-moratorium period, only points to an increase in default associated with the probability of not complying with the payment plan.

The ratio of overdue loans to total loans to firms continued to decrease after the start of the pandemic, to stand at 2.3% at the end of 2021 (Table C1.2). This ratio is very low in the segments of loans that were under moratoria at some point and State-guaranteed loans.

The amount of non-performing loans also continued to decline (7.8% in December 2021), and was lower in the State-guaranteed loan segment (1.8%), but posted a higher ratio in the segment of loans that had been under moratoria at some point (11.5%). In particular, banks increased loans that they consider unlikely to be fully repaid in the segment of loans that had moratoria. At the end of 2021, the share of non-performing loans according to this criterion was 9.3% for loans that had been under moratoria and 4.7% in total loans. On the other hand, the amount of non-performing loans due to non-compliance with the payment plan continued to be higher for the total (3.0%) compared to the moratoria segment (2.2%).

Table C1.2 • Overdue and non-performing loans granted to non-financial corporations
| Percentage of total in each segment

	Dec. 2020	Dec. 2021
Percentage of total loans to NFC		
of which: overdue loans	3.3	2.3
of which: in default	9.5	7.8
of which: in default due to the probability of not complying with the payment plan	4.1	4.7
of which: in default due to not complying with the payment plan for more than 90/180 days	5.4	3.0
Percentage of overdue loans in each segment		
with moratoria	0.1	0.5
with State guarantee	0.0	0.0
Percentage of loans in default in each segment		
with moratoria	8.9	11.5
of which: in default due to the probability of not complying with the payment plan	7.1	9.3
of which: in default due to not complying with the payment plan for more than 90/180 days	1.8	2.2
with State guarantee	0.7	1.8
of which: in default due to the probability of not complying with the payment plan	0.6	1.4
of which: in default due to not complying with the payment plan for more than 90/180 days	0.1	0.4

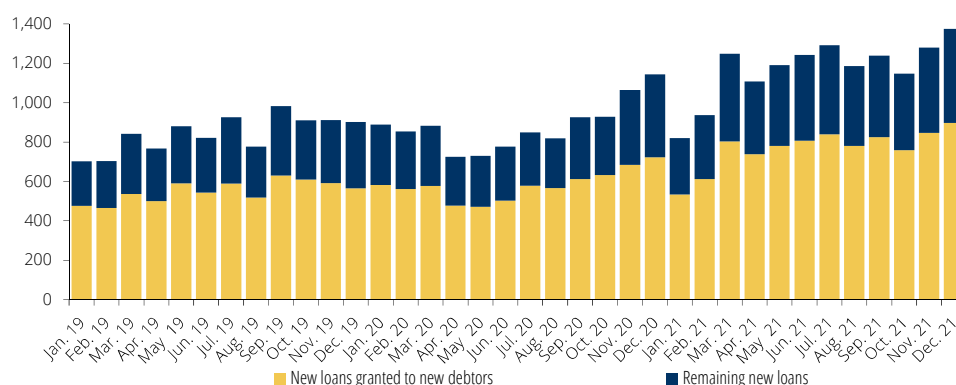
Source: Banco de Portugal. | Notes: Central Credit Registry data. A loan that is under moratoria for at least one month between 2020m3 and 2021m12 is considered as "With moratoria"; a State guarantee loan granted between 2020m1 and 2021m12 is considered as "With State guarantee". The amount of overdue credit corresponds to the principal of the loan not amortized on the previously foreseen dates. The amount in default corresponds to the entire amount associated with a loan classified as non-performing by the bank, defined in accordance with Article 178 of Regulation (EU) No. 575/2013.

Box 2 • Developments in new loans for house purchase

The amount of new loans to households for house purchase increased further in 2021, in tandem with buoyant housing market prices and transactions, but above disposable income growth.

Since the onset of the pandemic, new loans fell in periods of stricter lockdown, but have recovered rapidly in subsequent periods. The annual change in new loans was 4.6% and 32.8% in 2020 and 2021 respectively (Table C2.1). In this period, loans to new debtors (those with no housing loans in the four months before the new loan was taken out) account for around 66% of the total value of new loans. Loans in this segment grew at a similar pace to the total.

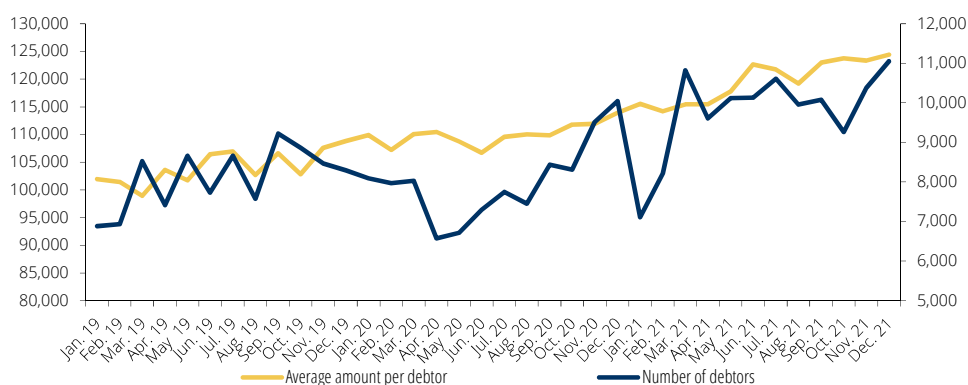
Chart C2.1 • Decomposition of new loans for house purchase by type of debtor | Million of euros



Source: Banco de Portugal. | Note: Data were obtained from the Central Credit Register and consider loans granted to households by all resident financial institutions and classified as loans for house purchase (type of instrument).

Developments in new loans in 2021 mainly reflected an increase in the number of debtors (of 22%), while the average amount per debtor increased by 8.8% (Chart C2.2). The increase in the number of debtors reflects the postponement of home buying by some individuals in the previous year, due to the uncertainty generated by the pandemic crisis (the number of debtors dropped by around 1% in 2020). During the lockdowns, the number of new loans fell markedly, while the average value followed a more stable growth path.

Chart C2.2 • Decomposition of new loans for house purchase into average amount per debtor and number of debtors | Euros and units



Source: Banco de Portugal.

New loans for house purchase are concentrated in younger groups and individuals with higher levels of education. In 2019, over 90% of debtors with new loans for house purchase were under 54 and 35.6% were under 35 (Table C2.1). Most had attained tertiary education, followed by those with secondary education. Of the debtors with new loans for house purchase, 7.6% were foreign.

The increase in the number of debtors in 2021 was very substantial across all segments. The 2020 reduction was more marked for older individuals and foreigners (-6.4% and -7.7% respectively), which may be associated with greater mobility restrictions due to the pandemic crisis.

Table C2.1 • Structure of the number of debtors. average amount per debtor and annual rates of change of news loans for house purchase | Thousand of euros and percentage

	Number of debtors			Average amount per debtor		
	Structure (%)	Rate of change (%)		Value (Thousand of euros)	Rate of change (%)	
	2019	2020	2021	2019	2020	2021
Total debtors						
Age						
Less than 35 years old	35.6	1.3	19.7	100.9	7.6	9.7
Between 35 and 54 years old	58.0	-1.9	23.7	107.6	5.2	8.2
More than 54 years old	6.3	-6.4	20.0	92.0	-1.8	9.0
Education						
Less than secondary	7.0	-2.4	11.1	71.1	5.3	7.1
Secondary	40.1	-0.3	19.0	85.2	5.6	5.9
Tertiary	52.9	-0.5	25.8	122.4	5.2	9.0
Nationality						
Portuguese	92.4	-0.5	21.7	101.3	6.0	7.7
Foreign	7.6	-7.7	25.9	140.1	4.3	17.9
Total	100.0	-1.1	22.0	104.2	5.7	8.8
New debtors						
Age						
Less than 35 years old	45.2	0.3	18.9	101.4	8.2	9.8
Between 35 and 54 years old	48.9	-1.7	22.1	106.7	6.3	9.7
More than 54 years old	5.9	-7.5	15.9	100.3	-3.6	12.7
Education						
Less than secondary	7.8	-3.9	10.7	73.3	6.9	5.6
Secondary	42.3	-1.5	17.3	85.3	6.4	6.6
Tertiary	49.9	0.4	24.7	122.9	5.9	11.1
Nationality						
Portuguese	90.0	-0.2	19.9	99.7	7.3	8.4
Foreign	10.0	-10.0	24.3	141.7	3.8	19.6
Total	100.0	-1.2	20.3	103.9	6.5	9.9

Source: Banco de Portugal (CCR).

The average amount per debtor of new loans for house purchase was around €104 thousand in 2019 and has increased over the past two years. The higher average amounts are associated with foreign debtors and debtors with higher levels of education. Growth in the average amount per debtor in 2020 was similar across all classes, except for older groups, in which there was a reduction. The increase in the average amount in 2021 was higher than in the previous year across all classes, reflecting the greater increase in house prices that was more pronounced in loans to foreigners and to debtors with higher levels of education, particularly in the case of new debtors.

4 Public finances

In 2021, the general government deficit stood at 2.8% of GDP. This was more favourable than the most recent forecast of the Ministry of Finance (4.3% of GDP), reflecting higher than expected growth in tax revenue (0.5 p.p.) and lower public spending (-1.0 p.p.). In the euro area, the deficit stood at 5.1% of GDP (7.1% in 2020).

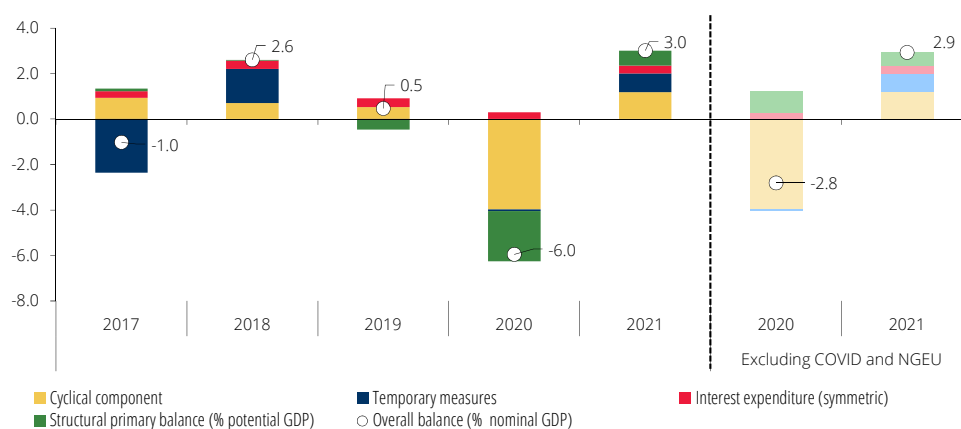
The decrease in the deficit by 3.0 p.p. of GDP relative to 2020 is only partially explained by the economic recovery. The improvement in the cyclical position of the economy contributed 1.2 p.p. of potential GDP to the decline in the general government deficit (Chart I.4.1 and Table I.4.1). The measures classified as temporary also contributed positively (0.8 p.p. of GDP), mainly reflecting the reimbursement of a prepaid margin on EFSF loans (0.5 p.p.) and a decrease in expenditure with support to the financial system (0.3 p.p.). Interest expenditure as a ratio to GDP declined further in 2021 (by 0.4 p.p. of GDP). Consequently, the structural primary balance (which is not affected by cyclical effects and is adjusted for temporary measures and interest expenditure) improved by 0.7 p.p. of potential GDP. This restrictive fiscal policy stance stems from a structural increase in revenue (1.6 p.p. of potential GDP) exceeding that of primary expenditure (0.9 p.p.).

The stimulus from pandemic-related support measures was higher than in 2020. The net impact of these measures on the general government balance was similar to that of the previous year (approximately -3% of GDP). The stimulus was higher as it was underpinned by a more significant amount of EU funding and an increase by 0.6 p.p. of GDP in expenditure linked to support measures. This increase stems from the implementation of the “Apoiar” and “Ativar” support programmes and higher health-related expenditure, including on the vaccination process and diagnostic testing. In contrast, there was a decrease in spending on the simplified layoff scheme and in financial support to TAP. In particular, the impact in 2021 of the loan to TAP was approximately half of that observed in the previous year, after deducting the partial repayment of a loan to a holding company whose debt was already recorded in general government.

The improvement in the budget balance is largely explained by the increase in non-tax revenue. Total revenue grew by 10.0% in 2021, an increase of 1.8 p.p. of GDP (1.3 p.p. excluding temporary measures – Chart I.4.2). Revenue from taxes and social contributions increased by 0.4 p.p. of GDP, mostly reflecting composition effects linked to the behaviour of the main macroeconomic bases (Box 3). The share in GDP of non-tax current revenue increased by 0.6 p.p., almost entirely reflecting inflows from the initiative for Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) under NGEU (0.7 p.p. of GDP). These amounts were used to finance spending on COVID-19 vaccines and firm support programmes implemented during the pandemic crisis and had a neutral impact on the budget balance. Capital revenue increased by 0.8 p.p. of GDP, 0.5 p.p. of which came from the aforementioned reimbursement of the EFSF prepaid margin. There was also an increase by 0.3 p.p. of GDP related to European funds under PT2020 matched by expenditure within the year.

The share of primary expenditure in GDP decreased. This item grew by 3.9% in 2021, which corresponds to a 0.7 p.p. decline as a percentage of GDP. Part of this decrease was due to the smaller amount transferred to Novo Banco through its contingent capital mechanism. The change excluding temporary measures was -0.5 p.p. of GDP (Chart I.4.3). This occurred despite the abovementioned increase in expenditure on pandemic-related support measures, reflecting the moderate growth of other expenditures.

Chart I.4.1 • Breakdown of the change in the general government balance | In percentage points of GDP and potential GDP



Source: INE (Banco de Portugal calculations). | Notes: Structural figures are corrected for cyclical effects and temporary measures. These are calculated by Banco de Portugal in line with the methodology and definitions adopted in the ESCB. For further details see Braz et al. (2019). "The new ESCB methodology for the calculation of cyclically adjusted budget balances: an application to the Portuguese case". *Banco de Portugal Economic Studies*, Volume V, No. 2, 2019. Temporary measures with an impact in 2021 include: 1) the revenue from the refund of prepaid margins on loans in the context of the Economic and Financial Assistance Programme; 2) the partial refund of a guarantee granted by the State to Banco Privado Português; 3) a capital transfer to Novo Banco under the contingent capitalisation mechanism; and 4) an amount related to the regularization of the Baixo Tejo sub-concession agreement, prompted by a court decision. Details on temporary measures in 2017-2020 can be found in previous Banco de Portugal publications.

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

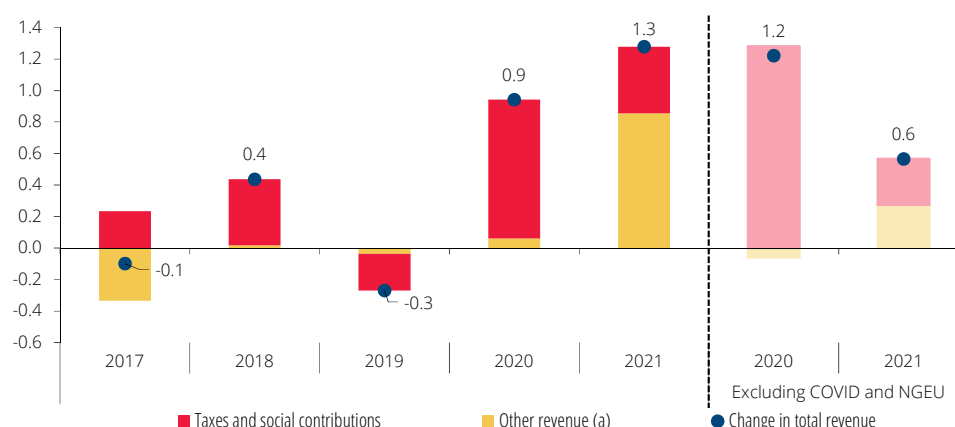
	2017	2018	2019	2020	2021	2021-20 change (in p.p.)
Overall balance	-3.0	-0.3	0.1	-5.8	-2.8	3.0
Interest expenditure	3.8	3.4	3.0	2.9	2.4	-0.4
Primary balance	0.8	3.0	3.1	-2.9	-0.4	2.6
Structural indicators (in percentage of potential GDP)^(a)						
Structural balance	-0.7	-0.3	-0.4	-2.3	-1.3	1.0
Structural primary balance	3.0	3.1	2.6	0.4	1.1	0.7
Structural revenue	42.4	42.9	42.6	43.2	44.8	1.6
Structural primary expenditure	39.4	39.8	40.0	42.8	43.7	0.9
Public debt						
Change in public debt (in pp)	126.1	121.5	116.6	135.2	127.4	-7.8
(-) Primary balance	-5.4	-4.7	-4.9	18.6	-7.8	
Differential between the effects of interest and of GDP growth	-0.8	-3.0	-3.1	2.9	0.4	
Deficit-debt adjustments	-2.6	-2.3	-2.3	11.2	-4.7	
Memo:						
Temporary measures	-2.0	0.7	0.4	4.4	-3.4	
Cyclical component	-0.2	-0.5	-0.5	-0.6	0.3	0.8
Debt net of general government deposits	-0.2	0.5	1.0	-3.0	-1.8	1.2
	116.0	113.4	109.8	123.2	120.0	-3.2

Sources: Banco de Portugal and INE (Banco de Portugal calculations). | Notes: (a) Structural figures are corrected for the cycle and the effects of temporary measures.

Primary current expenditure declined by 0.2 p.p. of GDP, largely reflecting the behaviour of social benefits. Expenditure on social benefits in cash declined by 0.4 p.p. of GDP and grew by 3.0% compared to the previous year. Approximately half of this growth is explained by higher pandemic-related expenditure, in particular sickness and quarantine allowances and the extraordinary income support for workers. Expenditure on old age and survivors' pensions grew by 1.9%, a decline of 0.5 p.p. of GDP, against a background of a near-stabilisation in the number of pensioners and retirees and an increase in average benefit resulting from the extraordinary update of the lowest pensions

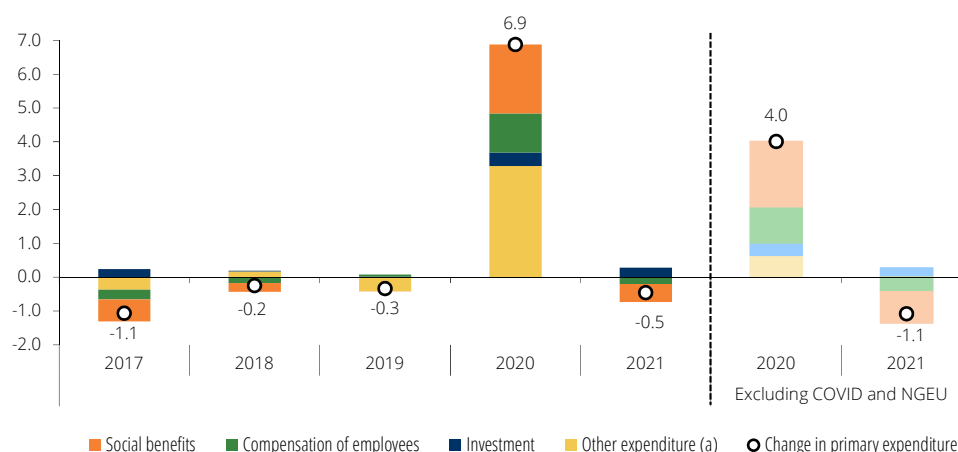
in the general scheme. Expenditure on unemployment benefits and employment support grew by 4.9%, decelerating sharply from the previous year (27.5%) and remaining roughly unchanged as a percentage of GDP. The growth of this aggregate was due to an increase in average benefit stemming from the rise in the minimum threshold, as the number of registered unemployed stabilised compared to the previous year. Expenditure on social benefits in kind remained broadly constant as a percentage of GDP.

Chart I.4.2 • Breakdown of the change in revenue corrected for temporary measures | In percentage points of GDP



Source: INE (Banco de Portugal calculations). | Note: (a) Other revenue includes sales and other current and capital revenue.

Chart I.4.3 • Breakdown of the change in primary expenditure corrected for temporary measures | In percentage points of GDP



Source: INE (Banco de Portugal calculations). | Note: (a) Other primary expenditure includes subsidies, intermediate consumption and other current and capital spending.

The remaining items of primary current expenditure grew above nominal GDP, with the exception of compensation of employees. The latter decreased as a percentage of GDP (0.2 p.p.), despite growing by 4.0% (3.4% in the previous year). These developments reflected an increase in pandemic-related supplementary work and staff recruitment, especially in health and education

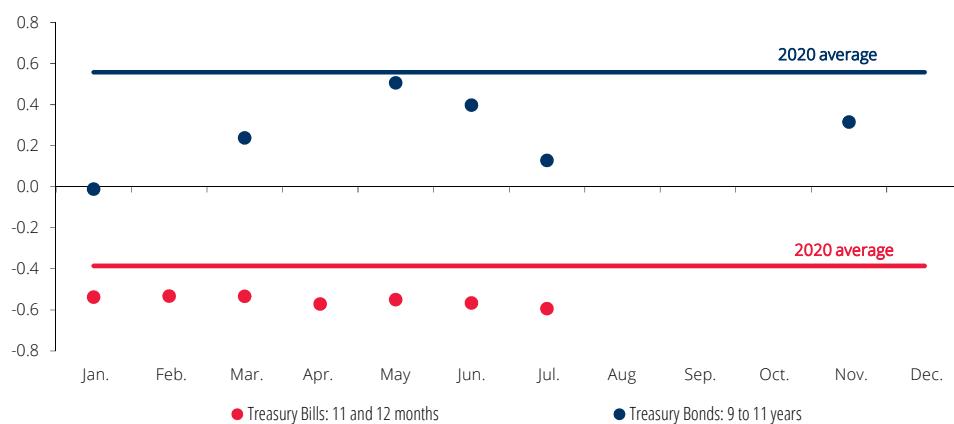
sectors. On average, the number of civil servants grew by 3% in 2021. The average wage also increased as a result of the mitigation of the length of service that had been frozen in special careers (in progress since 2019), the rise in the national minimum wage and the implementation of *Plano de Recuperação das Aprendizagens* (learning recovery plan). Intermediate consumption increased by 0.1 p.p. of GDP, as a result of higher expenditure on personal protective equipment and vaccines (in the latter case, using REACT-EU funding). The share of subsidies to firms in GDP increased by 0.2 p.p., but decelerated significantly from the previous year. The increase stems from the greater impact of support measures for firms affected by the pandemic crisis, in particular the support for progressive resumption of activity (furlough scheme) and the “Apoiar” and “Ativar” programmes.

The share of capital expenditure in GDP declined, despite the increase in public investment.

Public investment grew by 19.0% in 2021, increasing by 0.3 p.p. of GDP. This increase was more than offset by the decrease in other capital expenditure (by 0.9 p.p. of GDP) which reflected the aforementioned reduction in the amount of support to the financial system and in the loan to TAP.

Debt servicing costs remained on a downward path. Interest expenditure declined by 0.4 p.p. of GDP as a result of the fall in the implicit interest rate on debt from 2.2% to 1.9%. Since 2014, when it reached 4.9% of GDP, interest expenditure decreased by 2.4 p.p. The downward trend in yields on new issues continued in 2021. On average, the interest rate in Treasury bill auctions was -0.6% (-0.4% in 2020), while in Treasury bond auctions with a maturity of 10 years the average rate stood at 0.3% (0.6% in 2020) (Chart I.4.4).

Chart I.4.4 • Yields on Treasury bills and bonds issued in 2021 | In percentage



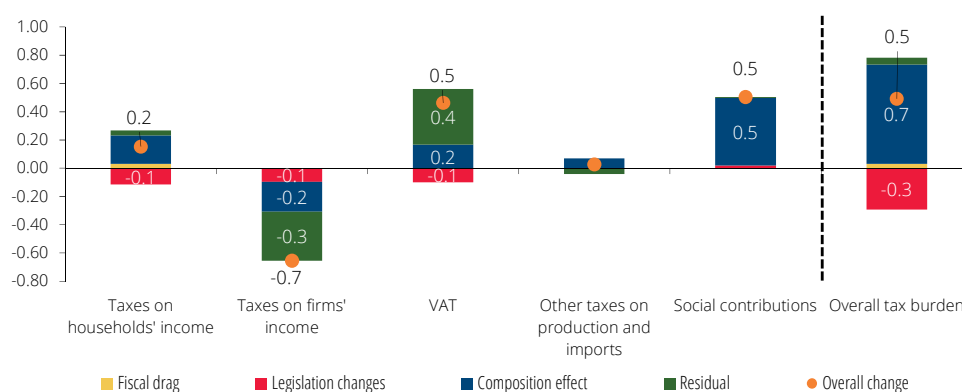
Source: IGCP.

The government debt ratio decreased from 135.2% to 127.4% of GDP. Underlying this reduction is a very significant denominator effect, with the nominal GDP growth rate largely exceeding the implicit interest rate on debt (Table I.4.1). In addition, government debt declined through a reduction in general government deposits equivalent to 4.7 p.p. of GDP. Deficit-debt adjustments contributed 3.4 p.p. of GDP to the decline in the debt ratio, with the reduction in deposits being partly offset by an increase in liabilities related to the receipt of European funds without a counterpart on the expenditure side in 2021. In the euro area, the government debt ratio also declined in 2021 (from 97.2 to 95.6% of GDP).

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

Revenue from taxes and social contributions increased by 6.8% in 2021, reflecting the effects of the macroeconomic recovery. Tax revenue adjusted for the cyclical influence of GDP stood at 38.1% of potential output, increasing by 0.5 p.p. from the previous year (37.6%). This change is explained by the composition effect stemming from deviations between actual developments in macroeconomic bases and those implied by the elasticities with respect to the output gap, which justifies an increase by 0.7 p.p. (Chart C3.1). This effect stems mainly from the growth of the wage bill and private consumption. The tax measures implemented in 2021 generated a loss of revenue (-0.3 p.p.). These changes include measures directly related to the pandemic, which even if transitional in nature, are not classified as temporary under the Eurosystem definition. The impact of the fiscal elasticity (linked to personal income tax progressivity) and residual factors was small (0.1 p.p.).³

Chart C3.1 • Breakdown of the change in structural revenue from taxes and social contributions in 2021 | In percentage points of potential GDP



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

The growth in VAT collection explains a substantial share of the increase in structural tax revenue (0.5 p.p. of potential GDP). Underlying these developments is a decrease in the amount of refunds, which is reflected in a positive effect captured in the residual component. In addition, private consumption grew above what would be expected given its historical elasticities, leading to a similarly positive composition effect. The decrease in the VAT rate on electricity and the temporary reduction in VAT on hand sanitiser and facemasks led to a loss of revenue from this tax. As for the remaining indirect taxes, there are also positive composition effects, which are offset by the residual component, resulting in the virtual stabilisation of structural revenue as a ratio to potential GDP.

Structural revenue from social contributions and taxes on household income increased in 2021 by 0.5 p.p. and 0.2 p.p. of potential GDP respectively. This increase is explained by positive and substantial composition effects, reflecting the growth in the economy's wage bill above what would have resulted from the respective elasticities to GDP.

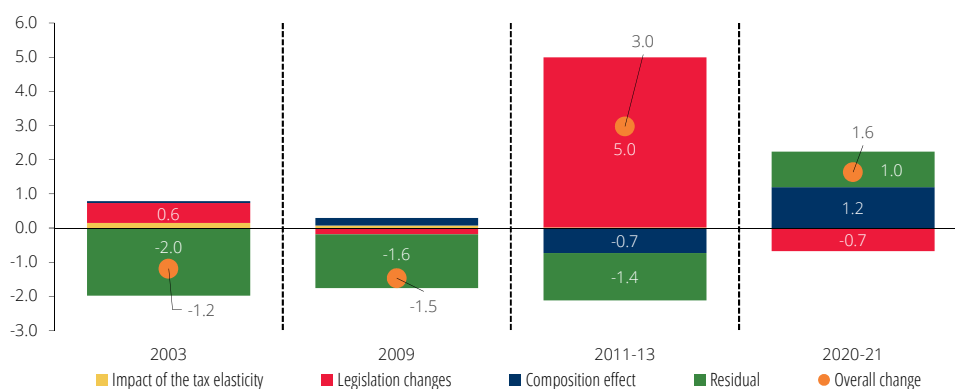
Structural revenue from taxes on corporate income decreased by 0.7 p.p. of potential GDP, associated with a 7.1% decrease in actual corporate income tax revenue. This decrease contrasts

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

with the 4.8% increase in the macroeconomic base considered in the methodology, leading to a negative composition effect. These developments are largely explained by factors that are not singled out in the methodology, including an increase in refunds. The magnitude of the residual component may also reflect difficulties in identifying a macroeconomic base for this tax based on National Accounts aggregates, in particular given the clustering of collection in a very small number of firms.⁴ In addition, difficulties remain in estimating the effects of legislative changes, particularly those related to the flexibility of corporate income tax payments.

The Eurosystem's methodology allows disentangling the determinants of the increase in tax revenue during the pandemic crisis in comparison to previous crises. Cumulatively, in 2020 and 2021 structural tax revenue increased by 1.6 p.p. (Chart C3.2). These developments are explained by positive composition effects (1.2 p.p.), whose impact was mitigated by the reduction in revenue resulting from tax measures (-0.7 p.p., particularly as regards direct taxes on firms and households and VAT). Composition effects are associated with the revenue from social contributions and taxes on household income. They reflect support measures that allowed the main macroeconomic base of these aggregates – the economy's wage bill – to be resilient during the pandemic despite the severity of the recession. There is also a positive contribution of factors captured in the residual component, mainly in corporate income tax revenue and reflecting the aforementioned difficulties in breaking down the drivers of this tax receipts.

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



Source: INE (Banco de Portugal calculations).

By contrast, during the most recent recessions very significant tax increases were implemented, particularly as regards the personal income tax and VAT during the Economic and Financial Assistance Programme. Excluding their impact, structural tax revenue would have declined as a ratio to potential GDP in 2003, 2009, 2011 and 2012. In these crises, the factors explaining the lower structural tax revenue are captured to a large extent in the residual component, whose behaviour was markedly procyclical. The contribution of composition effects was negligible, showing that, in the absence of measures to mitigate the impact of shocks on macroeconomic bases, the latter were evolving in line with their average elasticities.

4. See Braz, Cabral and Campos (2022), "A micro-level analysis of corporate income taxation in Portugal", *Banco de Portugal Economic Studies*, Banco de Portugal, Vol. VIII, No. 1, January.

5 Economic activity

Economic activity rebounded in 2021. After falling by 8.4% in 2020, GDP grew by 4.9%, standing in the last quarter 1.4% below its pre-pandemic value (Table I.5.1). In terms of the main expenditure aggregates, private consumption and total exports were close to the value at the end of 2019, while public consumption, GFCF and imports were above (Chart I.5.1). The intra-annual profile was marked by a reduction in activity at the beginning of the year – reflecting a new wave of the pandemic and nationwide lockdown – and a strong recovery in the following quarters, boosted by increased confidence associated with vaccination progress, despite supply bottlenecks. In the last quarter, the pace of growth slowed down reflecting a new variant of the virus and the adoption of new containment measures.

GDP grew in tandem with that of the euro area, after a sharper decline in the previous year.

The greater impact of the pandemic on the Portuguese economy largely reflects the higher weight of tourism exports, which were most affected by this crisis (Chart I.5.1). In contrast, developments in GFCF were more positive in Portugal, reflecting the construction component and, by institutional sector, the contribution of corporate and general government investment.

Table I.5.1 • GDP and its main components | Percentage change, unless otherwise stated

	% of GDP in 2019	Annual percentage change			Quarter-on-quarter rate of change				Memo: Index 2019 Q4 =100
		2019	2020	2021	2021 Q4	2021 Q2	2021 Q3	2021 Q4	2021 Q4
PIB	100.0	2.7	-8.4	4.9	-2.9	4.4	2.7	1.7	98.6
Domestic demand	99.5	3.1	-5.6	5.0	-2.3	4.9	1.2	1.0	82.0
Private consumption	64.1	3.3	-7.1	4.5	-4.5	7.4	1.6	1.1	99.5
Public consumption	17.0	2.1	0.4	4.1	-1.6	3.0	1.3	-0.7	104.3
Investment	18.5	3.3	-5.7	7.5	4.7	-1.4	-0.2	2.5	106.1
GFCF	18.1	5.4	-2.7	6.4	3.2	-0.1	-1.8	3.7	93.5
Change in inventories ^(a)	0.4	-0.3	-0.6	0.2	0.1	-0.4	0.9	0.1	
Exports	43.5	4.1	-18.6	13.1	-0.2	-2.0	8.8	9.1	99.3
Imports	43.1	4.9	-12.1	12.9	1.1	-0.4	4.7	7.1	105.9
Contribution to GDP growth. net of imports ^(b)		2.1	-3.0	2.5	-2.4	4.2	0.5	-0.2	
Contribution to exports growth. net of imports ^(b)		0.7	-5.4	2.4	-0.5	0.2	2.2	2.0	
<i>Memo item:</i>									
GDP – Euro area		1.6	-6.5	5.3	-0.1	2.2	2.3	0.3	100.2

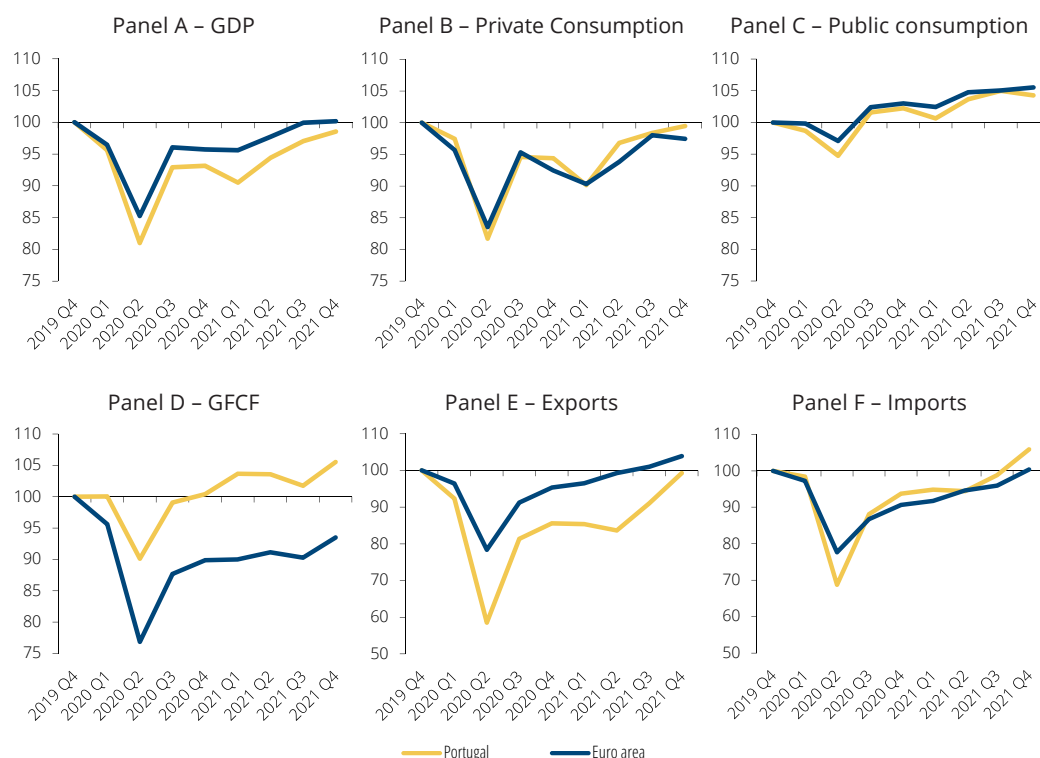
Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Notes: (a) Includes acquisitions less disposals of valuables and it is expressed in percentage point contributions to the annual percentage change of real GDP. (b) Percentage point contributions net of imports to the annual percentage change of real GDP. Demand aggregates net of imports are obtained by subtracting an estimate of imports needed to meet each component. For more information on the methodology, see Cardoso and Rua (2021) "Unveiling the real contribution of final demand to GDP growth", *Banco de Portugal Economic Studies*. vol. VII, No. 2.

Private consumption grew by 4.5% in 2021, after a 7.1% fall in 2020, maintaining differences in composition from the pre-pandemic period.

At the end of the year, non-food non-durable consumption remained 2.3% lower than in the fourth quarter of 2019, having grown by 5.6% (after a 10.4% reduction in 2020). Food consumption increased more moderately in 2021 (1.5%, after 4.8% in 2020). Consumption of durable goods grew by 4.6% and broadly returned to pre-crisis levels, despite car spending still standing around 17% behind. Data on payments with Portuguese bank cards confirm the changes in the composition of household expenditure. In the fourth quarter,

nominal expenditure on building and DIY materials, on sports and recreation equipment, and on computer equipment and office supplies stood above pre-crisis values (31.4%, 56.8% and 5.7% respectively), while amounts spent on leisure and culture and on transport still fell short (-22.8% and -1.5% respectively).

Chart I.5.1 • GDP and its main components – Portugal and euro area | Index, 2019 Q4 = 100

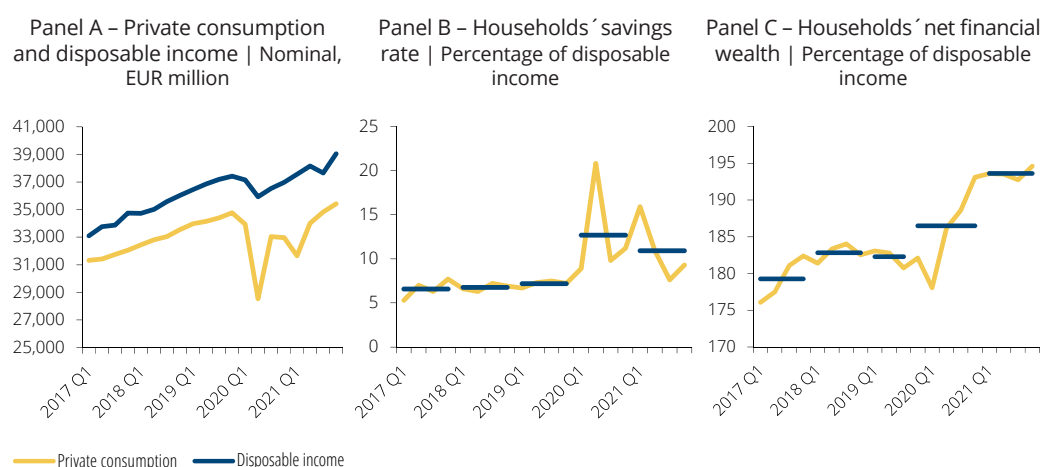


Sources: Eurostat and Statistics Portugal.

The recovery in private consumption was supported by an increase in disposable income, with a decline in the savings rate. Nominal disposable income increased by 4%, following a 0.9% decrease in the previous year (real changes of 2.7% and -1.6% respectively), reflecting the acceleration in wages. Other income – comprising the gross operating surplus of entrepreneurs and net property income – also increased, but remained far below that of 2019. The savings rate declined in 2021 but still remained above pre-pandemic levels (Chart I.5.2). As a result, households' financial wealth as a percentage of disposable income increased more moderately, after the exceptional increase recorded in 2020 associated with the high volume of savings, mostly channelled into deposits. In 2021, household deposits continued to grow significantly, as well as other financial investments, particularly in mutual funds. The increase in savings during the pandemic crisis was more concentrated in higher-income households.⁵ Card payments data point to a strong recovery in spending by high-consumption and medium-high-consumption individuals in 2021, which likely determined the decline in the aggregate savings rate (Chart I.5.3).

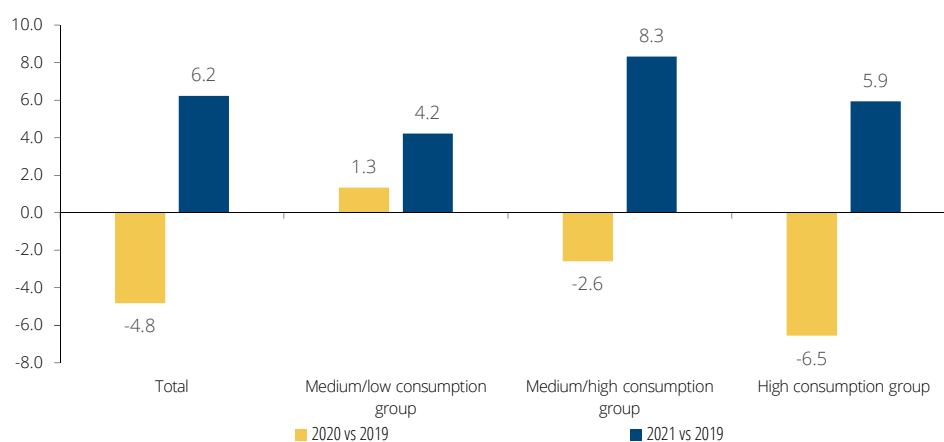
5. See the Box on "Household saving during the pandemic crisis" in the December 2021 issue of the *Economic Bulletin*.

Chart I.5.2 • Private consumption, disposable income, households' savings rate and net financial wealth | Nominal values in millions of euros and as a percentage of disposable income



Sources: Statistics Portugal and Banco de Portugal. | Notes: The net financial wealth or net worth of households corresponds to the difference between the stock of financial assets and the stock of liabilities. Changes in net financial wealth between two periods reflect transactions (investments in financial assets and incurring liabilities in the period) and other changes in the volume and price of assets/liabilities. The horizontal lines in the graphs correspond to the annual average.

Chart I.5.3 • Payments with national cards by consumption group | Change compared to 2019, in percentage

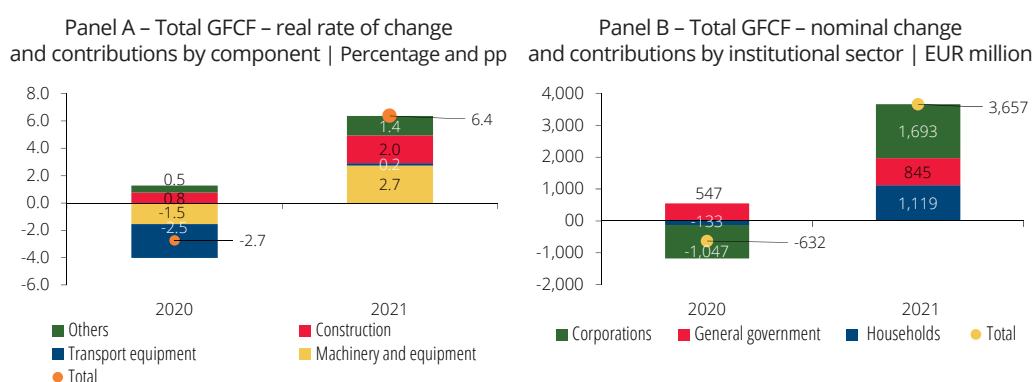


Source: SIBS (Banco de Portugal calculations). | Notes: Nominal Data. Data cover all purchases made through the physical Multibanco terminal network (point of sale (POS) terminals and ATM) with cards issued in Portugal. The high consumption group corresponds to the fourth quartile of average card expenditure at national level over the previous 12 months, the medium-high consumption group corresponds to the third quartile and the average/low consumption group aggregates the 50% of cards with the lowest average consumption. For more details see the Special Issue "The impact of the pandemic on private consumption: evidence from card spending data" in the December 2020 issue of the *Economic Bulletin*.

After nearly stabilising in 2020, public consumption grew by 4.1% in real terms in 2021. These developments reflect an acceleration in public employment, particularly in the areas of health and education. The number of hours worked in general government also increased compared with the previous year as a result of a normalisation of the functioning of public services and greater recourse to overtime. Amounts spent on the purchase of goods and services directly related to the pandemic, including COVID-19 vaccination and testing, were also higher than in 2020.

GFCF recorded high growth in 2021, which extended to all components and institutional sectors. Following a 2.7% decline in 2020, investment increased by 6.4% in 2021, supported by a recovery in demand, European funds and favourable financing conditions. Some weakening was observed in the second and third quarters – partly reflecting constraints in access to materials and the increase in their cost – but this was reversed at the end of the year (Table I.5.1). In 2021, special reference should be made to the recovery of GFCF in machinery (11.6%, after a 6.3% fall), as well as to the continued buoyancy of investment in intellectual property products (increase of 2.9% in 2020 and 7.6% in 2021) (Chart I.5.4 – Panel A). GFCF in construction made a further important contribution, growing by 4% (1.6% in 2020), supported by the dynamism of residential segment and major infrastructure works. In the fourth quarter of 2021, only GFCF in transport equipment stood below pre-pandemic values (around 26%), which can be associated with an incomplete recovery in tourism. Car sales for car rentals recovered in 2021, particularly in the second and third quarters, but were about half the sales observed in 2019. By institutional sector, investment by households and firms recovered strongly in 2021, while public investment maintained a major contribution (Chart I.5.4 – Panel B).

Chart I.5.4 • GFCF and contributions by component and institutional sector



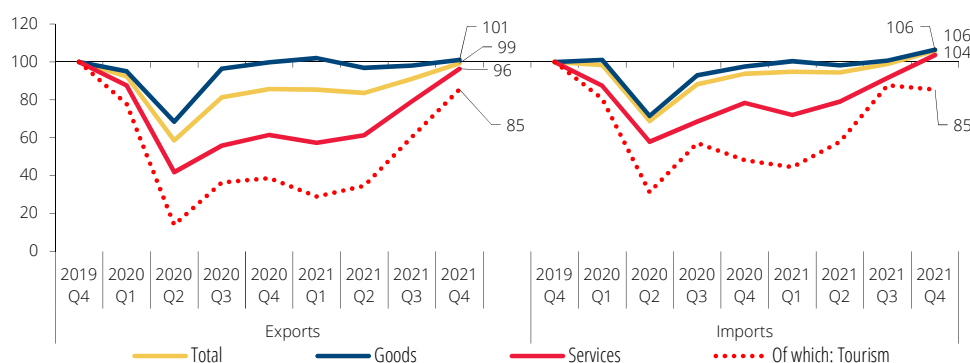
Source: Statistics Portugal.

External trade flows increased in 2021. Total exports and imports grew by 13.1% and 12.9% respectively in real terms (Table I.5.1). At the end of the year, exports were still below pre-crisis values, highly constrained by the tourism component, while imports of goods and services already exceeded these values (Chart I.5.5). In 2020-21, the real cumulative change in imports was higher than in exports, which contributed to a deterioration of the goods and services account balance. This deterioration also reflected the sharper acceleration of deflators in 2021, stronger for imports (from -3.4% in 2020 to 7.6% in 2021) than for exports (from -2.4% to 6%), reflecting the higher weight of energy goods in total imports.

Exports of goods grew by 10.6% in real terms, above the foreign demand indicator. The gain in market share of exporters in 2021, at 0.9%, extends the trend of recent years (Chart I.5.6 – Panel A). Intra-annual developments in exports were constrained by supply chain disruptions, which implied production halts in relevant sectors, such as car production. Following a 2.1% quarter-on-quarter rate of change in the first quarter, exports declined by 5.0% in the second quarter and rebounded in the second half of the year. In nominal terms, in the fourth quarter of 2021 most goods-exporting

sectors had recovered their pre-crisis figures for sales abroad – with the exception of fuel and cars and other transport equipment – but this recovery incorporates a broad-based acceleration in deflators, particularly significant in energy and intermediate goods (Chart I.5.7).

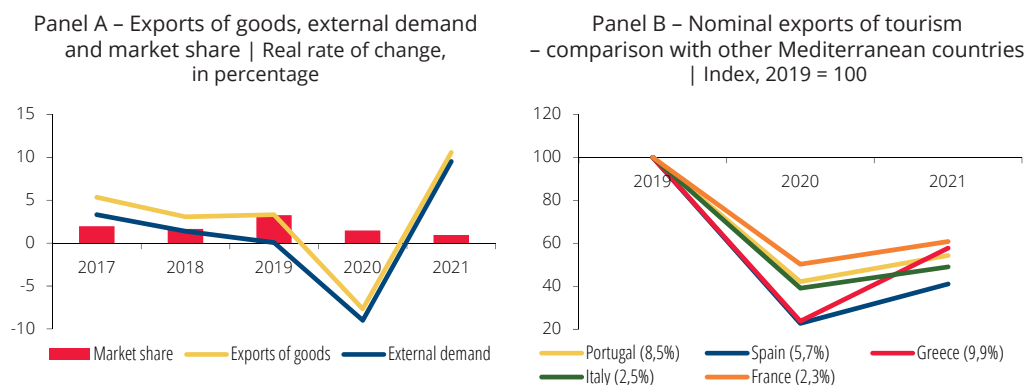
Chart I.5.5 • International trade flows, in real terms | Index, 2019 Q4 = 100



Source: Statistics Portugal.

Exports of services grew strongly in the second half of the year, but did not return to pre-crisis figures. Annual growth stood at 19.3%, following a decline of 37.2% in 2020. In the fourth quarter, these exports stood 4% below the pre-pandemic value, due to the tourism component (15% below) (Chart I.5.5). Despite the very negative shock to the sector, the behaviour of Portuguese tourism exports during the pandemic compares favourably with that of other competitor countries in the Mediterranean (Chart I.5.6 – Panel B).

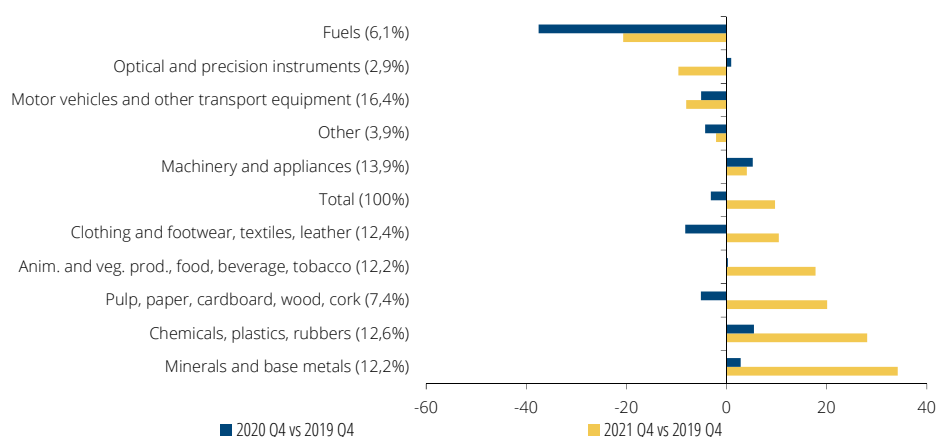
Chart I.5.6 • Relative performance of exports of goods and of services



Sources: CPB (Banco de Portugal calculations), Eurostat and Statistics Portugal. | Note: The indicator of external demand for goods is obtained as the weighted average of the real growth of imports of goods from 45 trading partners, representing about 90% of Portugal's total exports (each partner is weighted according to its weight in total exports in 2019). In the chart on the right, the percentages in brackets correspond to the weight of each country's nominal tourism exports in its GDP in 2019.

Real imports increased by 11.8% in 2021 for goods and 18.6% for services. In the last quarter of the year, these two components stood above pre-pandemic values (6.3% and 3.6% respectively) (Chart I.5.5). Developments in total imports are consistent with those in global demand weighted by import content, with the elasticity in 2021 standing slightly above the historical average, which is characteristic of periods of economic upturn.

Chart I.5.7 • Nominal exports of goods | Change compared to 2019 Q4, in percent



Source: Statistics Portugal (International trade).

GVA grew by 4.4% in 2021, with a broad-based increase in sectoral activity. Services grew at a pace close to that of industry, 4.5% and 4.0% respectively. Volatility in services determined the GVA profile throughout the year, reflecting the impact of the pandemic on trade, accommodation and food services (Table I.5.2). Activity in construction and in some industry sectors was also affected by constraints in the supply of raw materials and difficulties in recruiting skilled workers.

Table I.5.2 • GVA – total and subsectors | Rate of change in percentage, unless otherwise stated

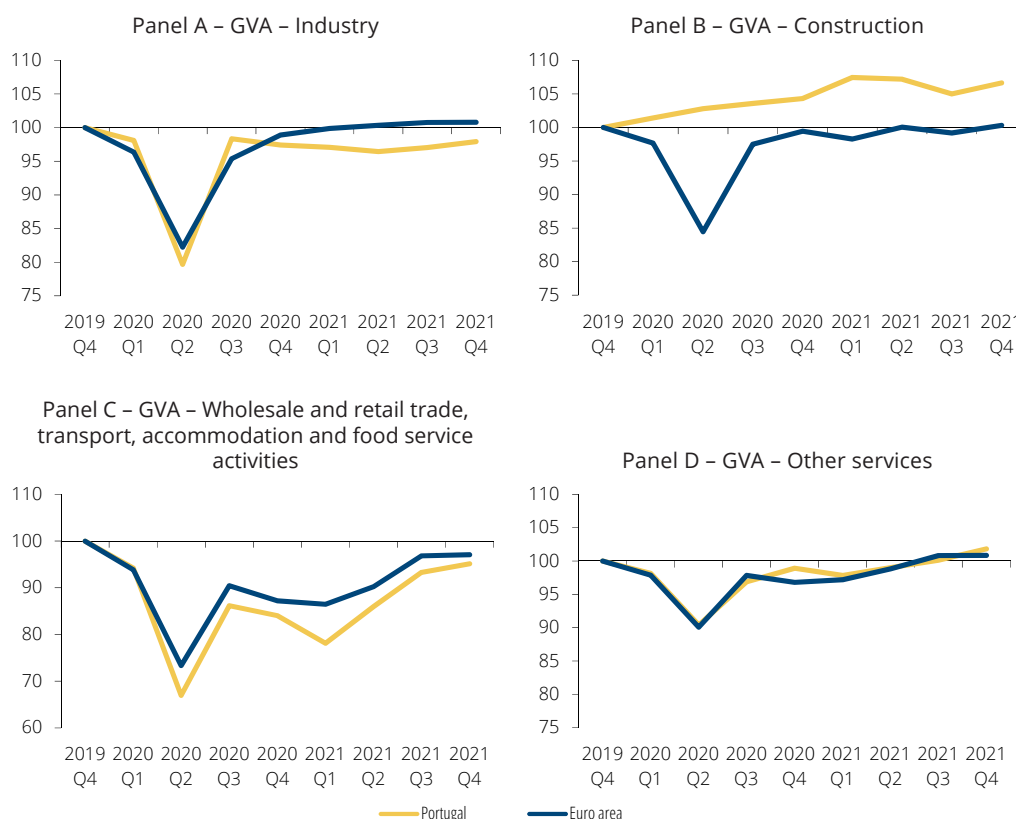
	% GVA in 2019	Annual percentage change			Quarter-on-quarter rate of change				Memo: Index 2019 Q4 =100
		2019	2020	2021	2021 Q1	2021 Q2	2021 Q3	2021 Q4	
GVA	100.0	2.6	-7.2	4.3	-2.0	2.6	2.5	1.6	99.6
Agriculture, forestry and fishing	2.4	3.3	-5.9	6.9	3.1	2.4	1.5	0.8	104.2
Industry (except construction)	17.4	0.5	-7.4	4.1	-0.4	-0.6	0.6	1.2	98.2
Construction	4.4	5.0	3.0	3.8	3.2	-0.2	-2.1	1.8	107.2
Services	75.8	3.0	-7.8	4.4	-2.8	3.6	3.2	1.7	99.4
Trade, accommodation and food services	19.2	2.7	-16.9	5.2	-8.2	13.1	6.9	0.9	93.7
Transportation and information and communication	5.1	3.9	-19.5	11.1	-2.7	-0.8	14.9	6.4	101.3
Information and communication activities	3.9	10.2	4.1	5.4	0.4	3.4	-3.1	3.1	108.4
Financial and insurance services	4.9	2.1	-1.6	0.6	1.3	1.9	1.8	-4.9	98.3
Real estate activities and rentals	12.5	1.1	-1.2	1.9	0.9	0.7	0.5	0.3	101.6
Services provided to corporations	8.3	5.8	-9.7	6.3	-5.9	-2.3	3.0	10.3	100.4
General government, education and health	19.1	2.1	-1.4	4.2	-1.3	2.7	1.8	0.1	103.8
Arts, entertainment and recreation	2.9	3.1	-15.2	5.0	1.0	-2.3	-0.7	4.8	90.6
<i>Memo</i>									
GVA – Euro area		1.6	-6.5	5.2	0.1	1.9	2.5	0.1	100.0

Sources: Eurostat and Statistics Portugal.

At the end of 2021, the composition of activity continued to differ from the pre-pandemic period. In particular, GVA remained lower in trade, accommodation and food services (6.3%) – reflecting the behaviour of accommodation and food services – and in arts, entertainment and culture (9.4%), but was considerably higher in communication and information services (8.4%) and construction (7.2%).

By the end of 2021, total GVA had recovered to pre-pandemic values in Portugal and the euro area, but with differences in composition. In Portugal, the recovery was more delayed in industry and in trade, accommodation, food services, transport and storage – the share of the latter sector being higher in Portugal (around 25% in 2019, compared with 19% in the euro area) –, which was offset by construction showing greater relative momentum (Chart I.5.8).

Chart I.5.8 • GVA in main sectors – Portugal and euro area | Index, 2019 Q4 = 100



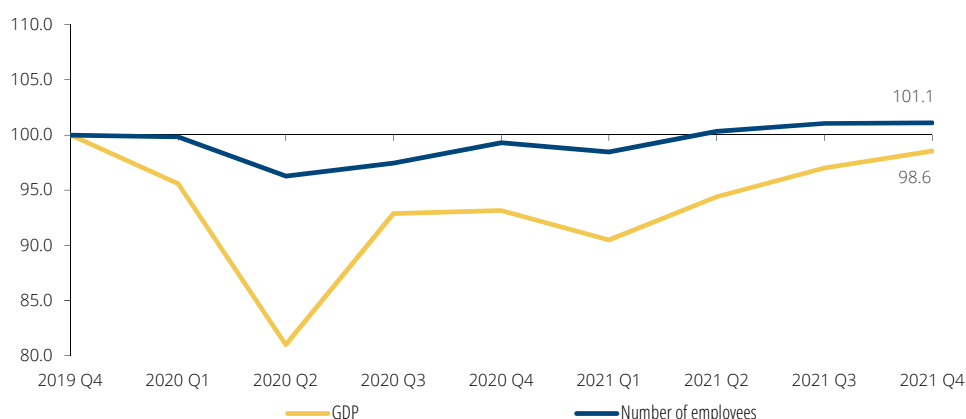
Sources: Eurostat and Statistics Portugal.

6 Labour market

In 2021, the labour market was buoyant, with employment recovering to pre-pandemic levels in the second quarter of the year. In the National Accounts, the number of employed individuals increased by 2.1% – 1.0 p.p. above the euro area – after a 1.9% drop in 2020. Since 2019, employment grew by 1.1%, recovering its pre-pandemic level faster than the euro area. In the last quarter of the year, employment growth decelerated in line with the economic activity slowdown (Chart I.6.1).

However, the employment recovery was uneven across labour market segments, benefitting mostly the self-employed, open-ended and full-time contracts, and more skilled and older workers (Table I.6.1). On the contrary, employment in fixed-term contracts and contracts for the provision of services, as well as the employment of younger individuals and less skilled workers, steadily declined since 2019.

Chart I.6.1 • GDP and employment | Index, 2019 Q4 = 100



Source: Statistics Portugal, National Accounts (Banco de Portugal calculations).

Table I.6.1 • Employment

	Weight in total employment (%)	Annual rate of change (%)			Per memoriam: Index 2019 Q4 = 100
	2019	2019	2020	2021	2021 Q4
Total employment	100.0	1.2	-1.9	2.7	101.9
By situation in the profession					
Employees	85.5	0.7	-1.8	1.4	100.6
Self-employed	14.1	5.0	-2.3	6.9	105.5
Family workers	0.4	-13.2	-16.2	178.9	278.4
By type of contract					
Open-ended contracts	67.7	2.2	1.9	2.4	105.9
Fixed-term contracts	15.0	-3.6	-17.1	-1.5	80.4
Service providers	2.7	-11.1	-10.2	-12.1	78.5
By duration					
Full-time	91.5	1.2	-1.5	2.9	102.3
Part-time	8.5	1.9	-7.0	0.8	98.1
By age group					
From 16 to 24 years old	6.4	2.8	-16.0	-2.3	82.8
From 25 to 34 years old	19.6	-0.5	-3.8	-1.2	97.0
From 35 to 44 years old	27.0	-0.7	-4.0	-0.2	96.7
From 45 to 54 years old	26.4	1.5	2.5	3.7	106.4
More than 54 years old	20.7	4.6	1.2	10.1	113.2
By schooling level					
Up to basic education	42.0	-4.2	-8.3	-7.0	85.4
Secondary education	29.3	5.6	-0.2	4.0	103.7
Tertiary education	28.7	5.4	5.6	13.9	124.2
Memo:					
Total employment (National Accounts)	100.0	0.8	-1.9	2.1	101.1

Source: Statistics Portugal, Labour Force Survey and National Accounts (Banco de Portugal calculations). | Note: In 2019, there were 4776 thousand employees, according to the Labour Force Survey, and 4953 thousand, according to National Accounts.

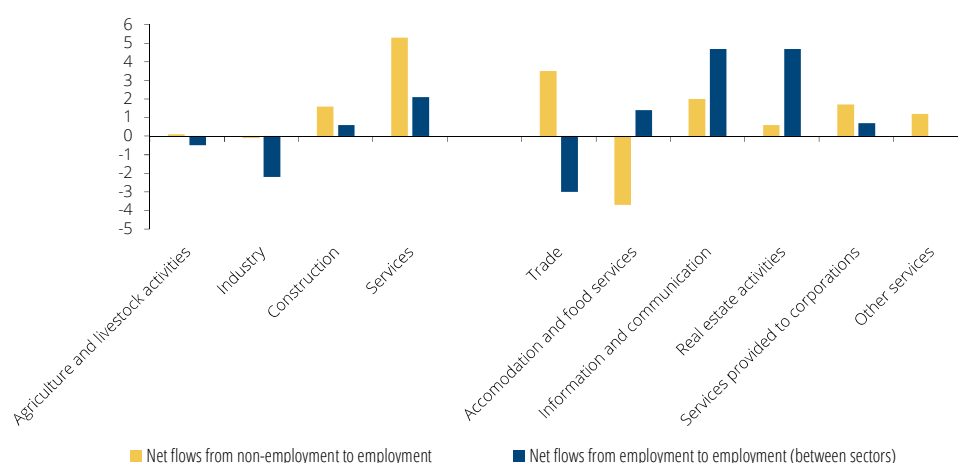
Employment growth also differed across sectors of activity. By the end of 2021, employment in trade, transport, accommodation and food services had not yet recovered to pre-pandemic levels, despite showing a positive evolution since 2020 (Table I.6.2). There was a marked increase in the number of workers in the construction sector (5.6%) and in the information and communication services (14.8%), confirming the momentum observed since 2019 in these sectors. Positive net flows from non-employment (unemployed and inactive individuals) to employment and flows of workers coming from other sectors contributed to this increase (Chart I.6.2).

Table I.6.2 • Employment by activity sector

	Weight in total economy (%)	Annual rate of change (%)			Per memoriam: Index 2019 Q4 =100
	2019	2019	2020	2021	2021 Q4
Total	100.0	0.8	-1.9	2.1	101.1
Agriculture, forestry and fishing	7.8	-8.2	-0.6	-5.2	93.3
Industry	16.8	-0.5	-2.2	1.2	101.2
Construction	6.4	4.8	2.2	5.6	110.2
Services	69.0	1.9	-2.3	2.8	101.1
Trade, transports, accommodation and food services	26.5	2.6	-4.9	0.3	96.9
Information and communication	2.2	8.0	5.7	14.8	118.0
Financial and real estate services	2.5	3.5	-1.7	3.4	101.3
Services provided to corporations	11.8	0.6	-4.6	7.1	104.4
General government, education and health	20.4	1.2	1.6	2.7	103.8
Arts, entertainment and recreation	5.5	0.8	-2.5	-0.1	96.5

Source: Statistics Portugal, National Accounts (Banco de Portugal calculations). | Note: In 2019, there were 4953 thousand employees, according to National Accounts.

Chart I.6.2 • Labour market net flows in 2021 Q4 | Change from 2019 Q4, in thousands of individuals



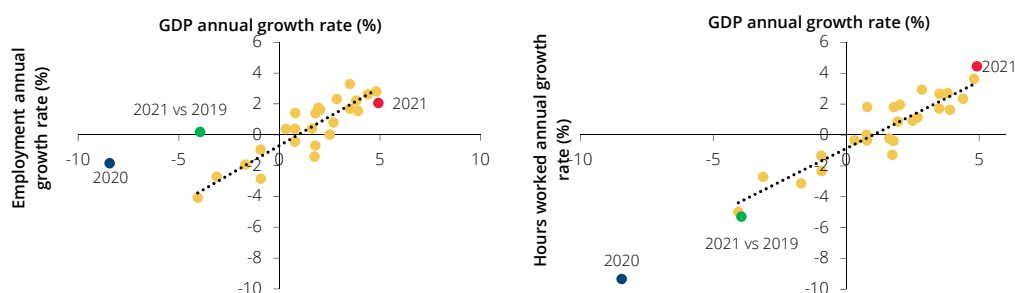
Source: Statistics Portugal, Labour Force Survey (Banco de Portugal calculations).

Measures to support businesses and workers continued to contribute to the preservation of employment in 2021. The monthly average number of beneficiaries of furlough schemes – the support to the progressive recovery of companies and the simplified layoff – was 165 thousand individuals, 70 thousand fewer than in 2020. In total, the support measures to firms and workers accounted for 1.6% of GDP in 2021 (1.3% in 2020).

In contrast to employment, hours worked had yet to recover to their pre-pandemic level by the end of 2021. After a sharp decline of 9.3% in 2020, hours grew by 4.5% in 2021 (Chart I.6.3). This growth took place across all sectors of activity, with the exception of the agricultural sector. In 2021, hours worked in the total of the economy were still 5.3% lower than in 2019.

Labour productivity, measured in hours worked, did not change compared with 2020, but was above its level in 2019. Productivity per hour grew by 2.3% compared to 2019, which is consistent with the increase in employment of higher-skilled workers.

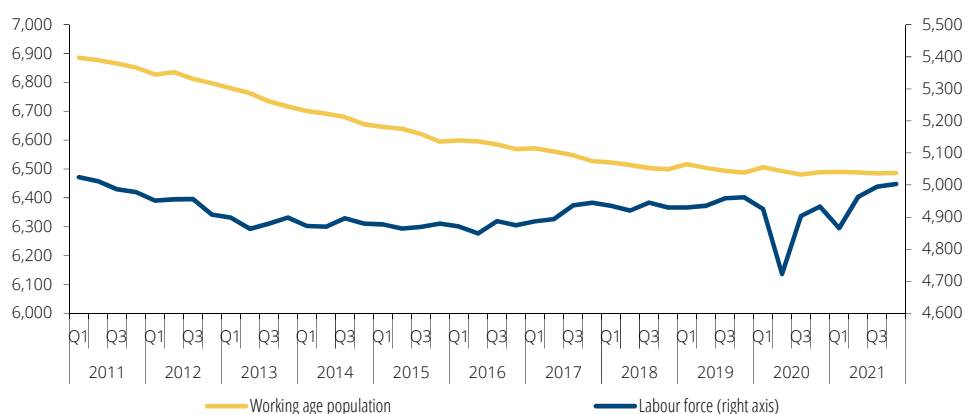
Chart I.6.3 • Employment, hours worked and GDP | Annual and biennial rate of change, in percentage from 1996 to 2021



Source: Statistics Portugal and Eurostat (Banco de Portugal calculations). | Note: The dotted lines result from the linear regression between the two variables represented in each panel of the chart, excluding the years of 2020 and 2021 from the sample. The observations "2021 vs 2019" are biennial growth rates.

The working age population stabilised in 2021, but the labour force increased. This increase was 1.8% in the 16 to 64 age group, following a 1.5% fall in 2020 (Chart I.6.4). The inactive population fell by 5.6%, reflecting the sharp decrease in discouraged individuals by 26.2% (Table I.6.3). This in turn led to an increase in the participation rate, a trend observed since 2013, underpinned by an increase in the participation of women and of the more skilled individuals in the labour market (Box 4).

Chart I.6.4 • Labour force and working-age population (16 to 64 years old) | Thousands of individuals



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

The unemployment rate and the labour underutilisation rate declined. In 2021, the unemployment rate stood at 6.6%, very close to the rate observed in 2019 and below the historical minimum of 7.0% recorded in the euro area. The decrease in the labour underutilisation rate from 14.1% to 12.5% resulted from the reduction in the number of discouraged individuals, in sharp contrast to the significant increase observed in the previous year (Table I.6.3).

The improvement of labour market conditions had no impact on the younger individuals. The unemployment rate of individuals between 16 and 24 years old remained above that observed at the end of 2019, which may have derived from the incomplete recovery in employment in the

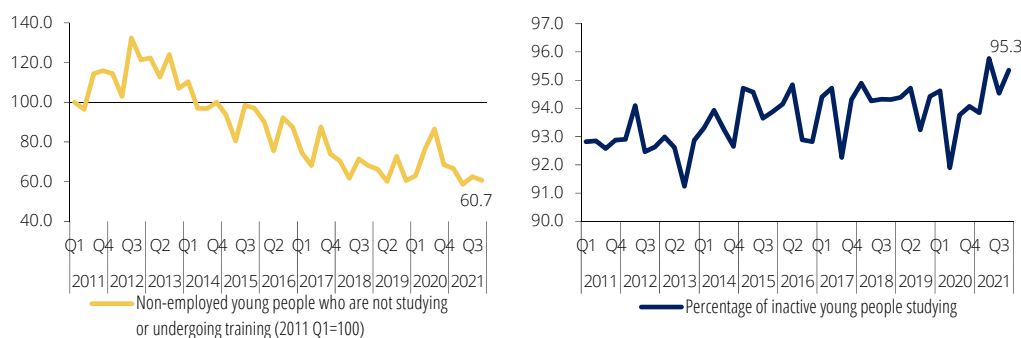
sectors most affected by the pandemic crisis that employ a larger proportion of young people. With the pandemic, there has also been a significant increase in the number of inactive young people studying – which may lead to more skilled employment in the future – and, since the second half of 2020, a marked reduction in jobless young people who are not studying or in training to historical low values (Chart I.6.5). Portugal has experienced a strong increase in qualifications over the past few decades. Box 5 shows that the intergenerational transmission of education, reinforced by its interaction with the financial situation of households, has greatly influenced the educational paths of individuals.

Table I.6.3 • Unemployment and labour underutilization | Year-on-year rate of change in percentage, unless otherwise stated

	Thousand of individuals			Percentage		
	2019	2020	2021	2019	2020	2021
Total unemployment	339.5	350.8	338.8	-7.2	3.3	-3.4
Unemployment rate (% of labour force)	–	–	–	6.6	7.0	6.6
Labour underutilization	685.9	747.2	668.3	-7.1	8.9	-10.6
Underutilization rate (% of labour force)	–	–	–	12.9	14.1	12.5
Discouraged individuals	167.5	226.0	166.7	-9.3	34.9	-26.2
Memo:						
Unemployment registered in job centres	310.9	390.7	379.5	-11.4	25.7	-2.9

Source: Statistics Portugal, Labour Force Survey and IEPF (Banco de Portugal calculations). | Note: The labour underutilization rate considers the unemployed, the underemployed in part-time jobs, the inactive searching for a job but not available to work and the inactive available to work but not searching for a job. For the calculation of this rate, the active population includes also these inactive groups of individuals.

Chart I.6.5 • Young inactive population



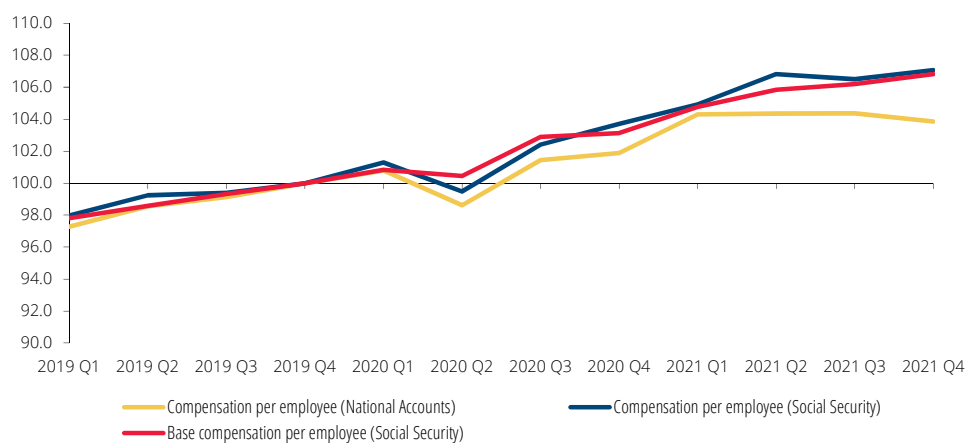
Source: Statistics Portugal. Labour Force Survey (Banco de Portugal calculations).

In 2021, the average compensation per employee accelerated but grew less than in 2019.

Average compensation per employee increased by 3.5% (2.0% in 2020), in a context where inflation stood at 0.9% (Chart I.6.6). This growth was more moderate than in the pre-pandemic period, although the unemployment rate and the labour underutilisation rate were low and some sectors of activity reported constraints due to labour shortages. These positive developments in the compensation per employee were influenced by the 4.7% increase in the minimum wage from €635 to €665, covering around one-quarter of employees (24.6% in June 2021), as well as by the wage replacement resulting from the phasing-out of furlough schemes. All activity sectors, except for financial and insurance activities, experienced a positive variation in wages. Agriculture

and, among services, real estate activities were the sectors that recorded the highest growth in the average compensation of employees in 2021: 5.6% and 5.4% respectively.

Chart I.6.6 • Compensation per employee | Index, 2019 Q4 = 100



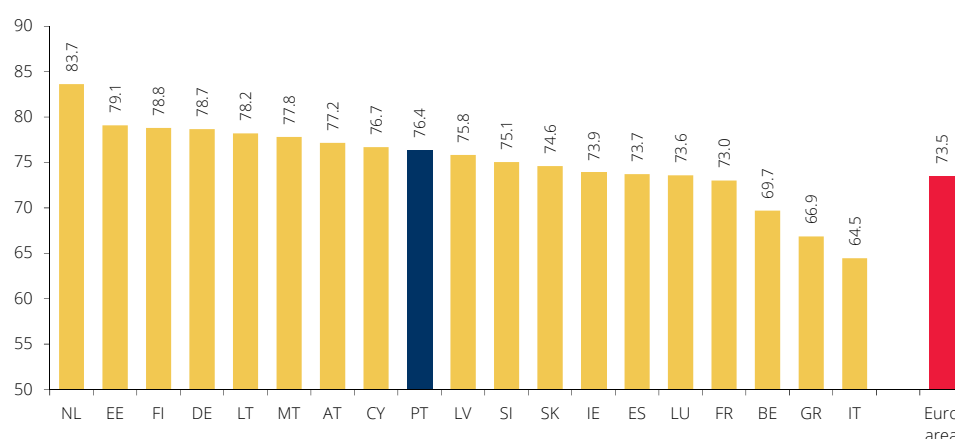
Sources: Statistics Portugal (National Accounts) e MTSSS (Social Security).

Box 4 • Recent evolution of the participation rate in Portugal: decomposition by gender, level of education and demography effect

The increasing trend in the participation rate stands out among labour market developments in Portugal in recent years, similarly to that seen in the euro area. This upward profile has been observed since 2013 and was only interrupted during the early stage of the pandemic crisis. After a drop in 2020, the participation rate for the total population resumed its upward trend in the second half of 2021 – even exceeding the pace of recovery of economic activity – to reach its highest level since 2011.⁶

Between 2011 and 2021, the participation rate, measured as the ratio of the labour force aged 16 to 64 to the population in this age group, rose by 3.6 p.p., to stand at 76.4% in 2021 – the ninth highest participation rate in the euro area (Chart C4.1). The number of hours worked per employee in Portugal is also above the euro area average. This was set against a background where, after several years of decline, there has been a relative stabilisation of the resident and the working age population over the past two years.

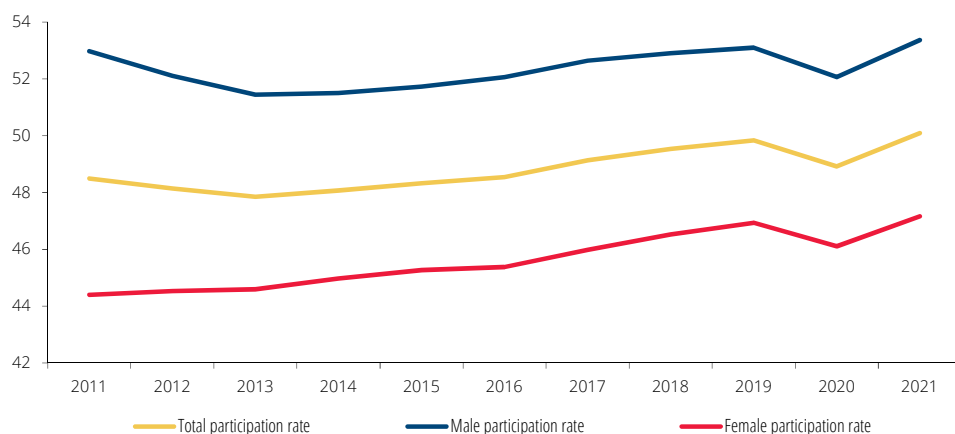
Chart C4.1 • Participation rate in euro area countries in 2021 in the 15 to 64 years-old age group
| In percentage of the population from 15 to 64 years-old



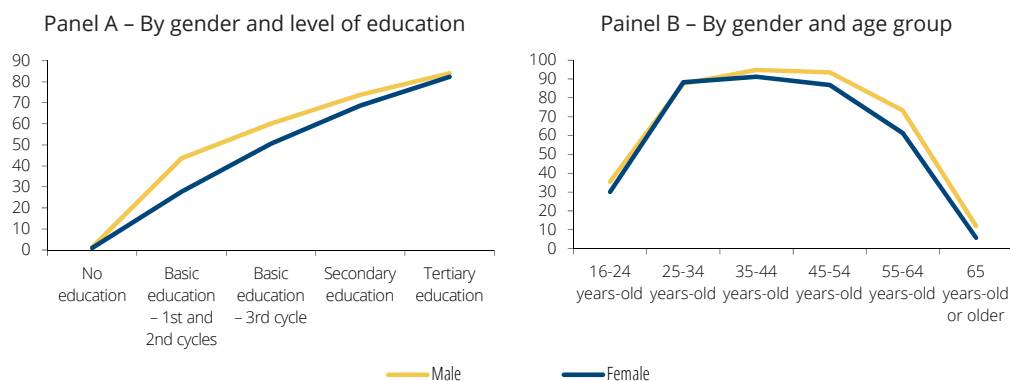
Source: Eurostat. | Note: Due to the lack of information for the fourth quarter of 2021, the participation rates presented correspond to the average of the first three quarters of the year in the case of Greece, Ireland, Luxembourg and for the euro area as a whole.

The increase in the participation rate since 2013 reflects the usual procyclical behaviour of this variable, against a background of recovering economic activity. However, there are structural effects. Most notable is the increase in female labour market participation (Chart C4.2) and the increasing weight of higher levels of schooling with higher inactivity opportunity costs (Chart C4.3 – Panel A). In 2021, individuals with tertiary education accounted for 33.8% of the labour force (19.1% in 2011), compared with 35.6% with up to lower secondary education (59.9% in 2011). Conversely, population ageing reduces the participation rate (Chart C4.3 – Panel B). In 2021, individuals aged 55 to 64 accounted for 18.6% of the labour force (12.1% in 2011), compared with 6.3% for individuals aged 16 to 24 (8.5% in 2011).

6. In 2021, Statistics Portugal started a new data series of the Labour Force Survey, which, among other changes, no longer considers persons as employed when they engage in agriculture and fishing activities for their own use. With this change, Statistics Portugal released the series adjusted for the new change from 2011 onwards. Against this background, it is not possible to compare the current participation rate with that of series prior to 2011.

Chart C4.2 • Evolution of total participation rate and by gender | In percentage of total population and by gender

Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Note: The participation rate results from dividing the labour force (16-89 years old) by the total population.

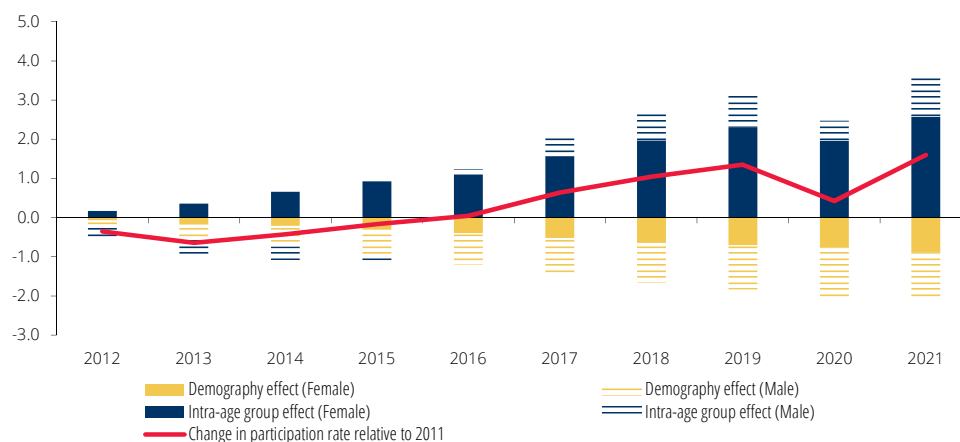
Chart C4.3 • Participation rate in 2021 | In percentage of population by gender in each level of education or age group, respectively

Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Note: The participation rate results from dividing the labour force (16-89 years old) by the total population.

The change in the participation rate may be broken down into the effect stemming from the change in the relative weight of each age group in the population (demography effect) and that stemming from labour force dynamics within each age group (intra-age group effect). The increase in the participation rate since 2013 reflects a positive intra-age group effect, which is more significant for women as a result of their increasing labour market participation (Chart C4.4). This effect is also influenced by the cyclical position of the economy. The increase in the participation rate was broadly based across age groups, with the exception of individuals aged under 35, reflecting the lengthening of the schooling period of the younger population, including the effect of the increase in compulsory education, and the resulting later entry into the labour market (Chart C4.5). Among older groups, the increase in the participation rate reflects a longer working life, as well as possible composition effects associated with the significant increase in schooling levels.⁷

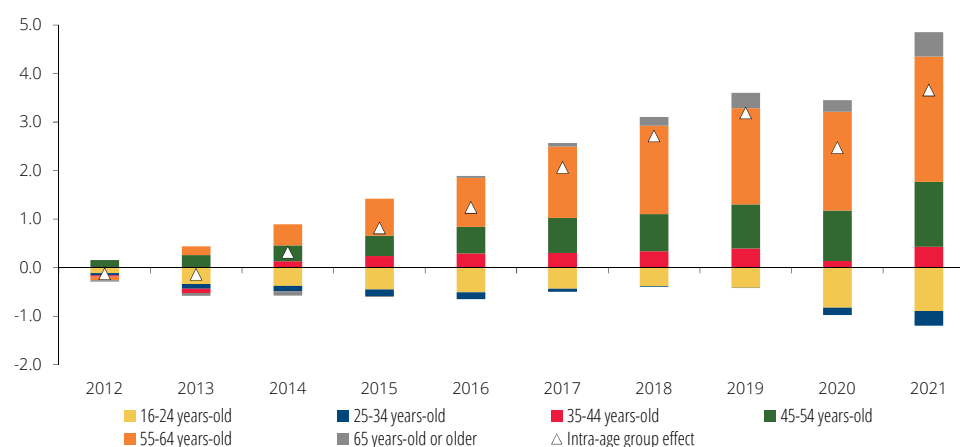
7. For more details, see the Special issue “Demographic changes and labour supply in Portugal”, *Economic Bulletin*, June 2019.

Chart C4.4 • Decomposition of the change in total participation rate by age group and gender in demography and intra-age group effects | Cumulative contribution since 2011 in percentage points



Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Note: The decomposition presented takes into account the total participation rate, i.e., the one that results from the division of the total labour force (16-89 years) by the total population.

Chart C4.5 • Decomposition of the intra-age group effect | Cumulative contribution since 2011 in percentage points



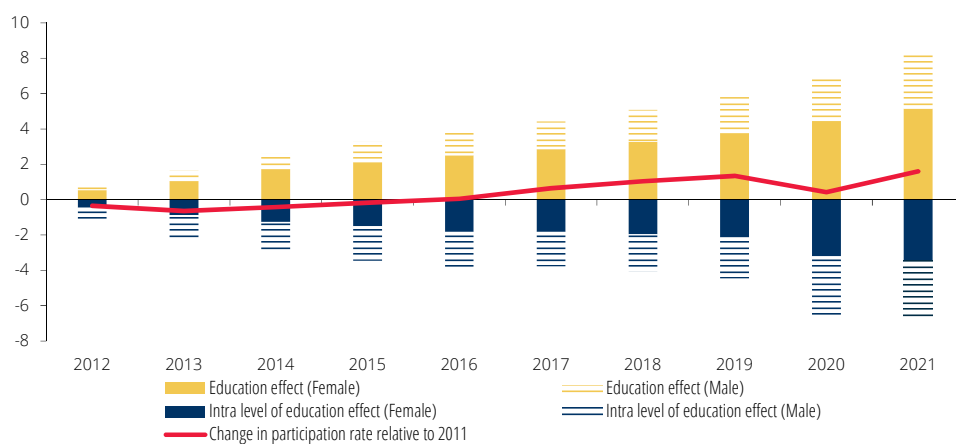
Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations).

The positive impact of the increase in participation rates across most age groups was partly offset by population ageing, which is linked to lower participation rates. This development is most visible for men.

The change in the participation rate may also be broken down into the effect stemming from the increase in the relative weight of higher levels of education (education effect) and that stemming from the change in the participation rate by education level (intra level of education effect). Chart C4.6 shows that the increase in the share in the population of individuals with a higher level of education, with typically higher participation rates, has contributed to the increase in the participation rate. This contribution is notable for the female population. In 2021, the share of women with tertiary education in the labour force stood at 20.6% (11.3% in 2011), compared with 13.3% for men (7.8% in 2011). In turn, the intra level of education effect is negative, with a substantial reduction in the

participation rate for individuals with up to lower secondary education (30.7% in 2021 compared to 38.8% in 2011).

Chart C4.6 • Decomposition of the change in total participation rate by level of education and gender in education effect and intra-education group effect | Cumulative contribution since 2011 in percentage points



Source: Statistics Portugal – Labour Force Survey (Banco de Portugal calculations). | Note: The decomposition presented takes into account the total participation rate, i.e., the one that results from the division of the total labour force (16-89 years) by the total population.

Box 5 • The intergenerational transmission of education in Portugal

Over the past few decades, Portugal has experienced a marked educational shift, with a strong increase in skills. In 2020, 79% of individuals aged 25 to 34 had completed at least upper secondary education, which contrasts with just 35.1% for individuals aged 55 to 64 (84.1% and 68.4%, respectively, in the euro area). Around 42% of individuals aged 25 to 34 had completed tertiary education, compared with 16.9% for individuals aged 55 to 64 (41.5% and 25% in the euro area).

Benefits arise from an educational transition as intense as possible. An important issue is the extent to which parents' skills condition the acquisition of skills by their descendants, i.e. the extent to which there has been an intergenerational transmission of education. The literature confirms that excessive intergenerational persistence is an obstacle to fully exploiting the potential of the new generations (Black and Devereux, 2011⁸).

In the ad hoc module of the 2019 Survey on Income and Living Conditions, which is part of Eurostat's EU Statistics on Income and Living Conditions (EU-SILC) (Statistics Portugal, 2019, and Eurostat, 2021⁹), each household member aged 25 to 59 was surveyed about their household circumstances when they were 14 years old. The Portuguese sample surveyed around 15,000 individuals and the results were extrapolated to the population using individual weights.

Table C5.1 shows the transition matrix for the educational transmission from parents to children – up to basic, secondary and tertiary education – in Portugal. The educational level of parents corresponds to the father's or mother's highest education attainment level. Panel A shows the simple education transition matrix and in panel B the same evidence is recalculated according to the educational level of the parents. The data confirms the strong educational transition in Portugal. The role of the educational level of parents is also evident. The vast majority of individuals whose parents had attained tertiary education also completed their tertiary education (73.2%). This share is higher among women (80.5%). In the case of parents with up to basic education, a significant share of children did also not exceed that level (55.9%). This share is higher among men (61.2%).

Evidence of intergenerational transmission persists among younger generations, albeit to a lesser extent. For individuals aged 25 to 34 whose parents had attained up to basic education, 39% were also unable to outperform this level. In turn, around 75% of those whose parents had attained tertiary education have also attained this educational level. For those aged 45 to 59, these shares amounted to 67% and 70% respectively.

For comparative purposes, Chart C5.1 shows the share of individuals who have completed tertiary education as a function of their parents' education, for a subset of euro area countries. In all countries, there is a positive relationship between the education of parents and children. In Portugal, the share of children with tertiary educated parents who also reached that level is relatively high in the subset of countries under review. The same is true in cases where parents have completed their secondary education. By contrast, less than 20% of individuals whose parents had attained up to basic education obtained a tertiary level of education. This is one of the lowest shares among the countries under review.

8. Black, S. and Devereux, P. (2011), "Recent Developments in Intergenerational Mobility", *Handbook of Labor Economics*, Orley Ashenfelter and David Card (eds.), North Holland Press, Elsevier.

9. Statistics Portugal (2019), "Income and Living Conditions 2019 (provisional data)", available at https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=354099170&DESTAQUESmodo=2; Eurostat (2021), Intergenerational transmission of disadvantages, Statistics Explained article, available at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Intergenerational_transmission_of_disadvantages_-_statistics.

Table C5.1 • Transition matrices of parent-child education | In percentage

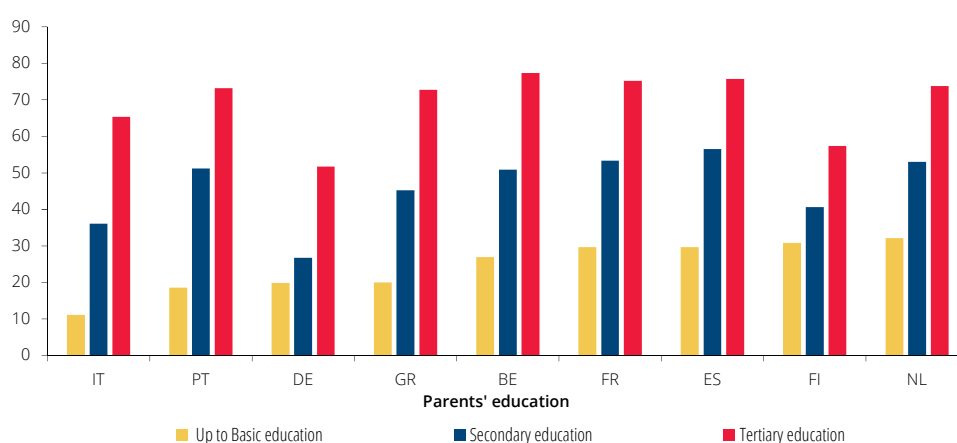
		Parents' education			
		Up to Basic education	Secondary education	Tertiary education	Total
Individual's education	Up to Basic education	46.8	0.8	0.6	48.3
	Secondary education	21.4	2.9	1.7	26.0
	Tertiary education	15.6	3.9	6.2	25.8
	Total	83.8	7.7	8.5	100.0

Panel B – Transition matrix as a function of parents' education

		Parents' education		
		Up to Basic education	Secondary education	Tertiary education
Individual's education	Up to Basic education	55.9	10.8	7.1
	Secondary education	25.5	38.1	19.8
	Tertiary education	18.6	51.2	73.2
	Total	100.0	100.0	100.0

Source: EU-SILC 2019 (Banco de Portugal calculations).

Chart C5.1 • Individuals who completed tertiary education, as a function of their parents' education | In percentage



Source: EU-SILC 2019 (Banco de Portugal calculations).

One factor influencing the intergenerational transmission of education is the ability of households to pay for the younger generation's studies. The ad hoc module on intergenerational transmission includes a question on the household financial situation when the respondent was 14 years old. The answer is in the form of a scale from one (very bad) to six (very good), which makes it possible to separate individuals into two groups: those with a bad financial situation (i.e. between one and three) and those with a good financial situation (between four and six). Unsurprisingly, there is a positive link between the parents' educational level and financial situation when the respondents were young. In households where the parents had attained up to basic education, around 36% of respondents reported having lived with a bad financial situation. In households where the parents had attained tertiary education, only 6% of respondents reported having lived with a bad financial situation.

Table C5.2 shows the share of individuals who achieved a higher education level, as a function of their parents' education and the financial situation reported as at the time they were 14 years old. The financial situation affects educational pathways across all countries. The share of individuals able to complete tertiary education is always higher when the financial situation is good rather than when it is bad, for each educational level of the parents. Portugal is one of the countries where the impact of the financial situation on educational pathways is most substantial. In particular, in Portugal, considering individuals whose parents had attained up to lower secondary education, only 10% completed tertiary education when the financial situation was bad, compared with 27% when the financial situation was good. The role of the financial situation does not appear to be so critical for the highest educational levels of parents.

Table C5.2 • Individuals with tertiary education, by parental education and financial status when the respondent was 14 years old | In percentage

	Parents' education					
	Up to Basic education		Secondary education		Tertiary education	
	Tertiary education					
	Bad	Good	Bad	Good	Bad	Good
Italy	6.7	17.3	19.9	37.4	41.5	66.2
Portugal	10.5	27.0	36.3	52.5	60.8	73.9
Spain	20.2	40.6	41.2	59.0	59.0	77.0
Greece	15.5	27.4	29.2	47.2	67.7	73.1
Belgium	23.4	36.8	39.9	52.6	63.7	78.3
Germany	16.2	24.2	25.9	27.3	52.7	51.8
Netherlands	29.6	42.5	32.8	54.9	62.5	74.5
France	29.0	38.6	47.1	53.2	73.2	75.5
Finland	28.6	35.9	36.5	41.3	40.9	58.6

Source: EU-SILC 2019 (Banco de Portugal calculations). | Note: Countries ordered in descending order of impact of financial situation when the maximum parental education is basic education (calculated as the ratio between the percentage of individuals with tertiary education when the parents' education is low and the financial situation is good and the percentage of individuals with tertiary education when parental education is low and financial situation is poor).

The intergenerational transmission of education, complemented by the interaction with the financial situation of households, has important implications for the educational pathways, social inclusion and economic growth potential. As reported in Eurostat (2021), the at-risk-of-poverty rate of adults whose parents had attained up to basic education stood at 17.1% in Portugal, compared with 6.8% for adults whose parents were more highly educated. This evidence underlines the importance of understanding the intergenerational transmission mechanisms of education in order to design public policies that enhance opportunities for everyone.

7 Prices

The inflation rate measured by the HICP stood at 0.9% in 2021, rising by 1.0 p.p. compared with 2020. This increase mainly reflected the contribution of energy goods, in line with the steep increase of oil and gas prices in international markets (Table I.7.1). In annual average terms, there was also a rise in non-energy industrial goods prices, after some years of decreases, while services prices recorded a nil change.

Inflation exhibited a marked intra-annual profile, increasing from figures close to 0% in the first months of 2021 to 2.8% in December. This acceleration occurred in all the main aggregates, with emphasis on the contribution of energy goods and services (Chart I.7.1).

Table I.7.1 • Harmonized Index of Consumer Prices and main aggregates | Rate of change, in percentage

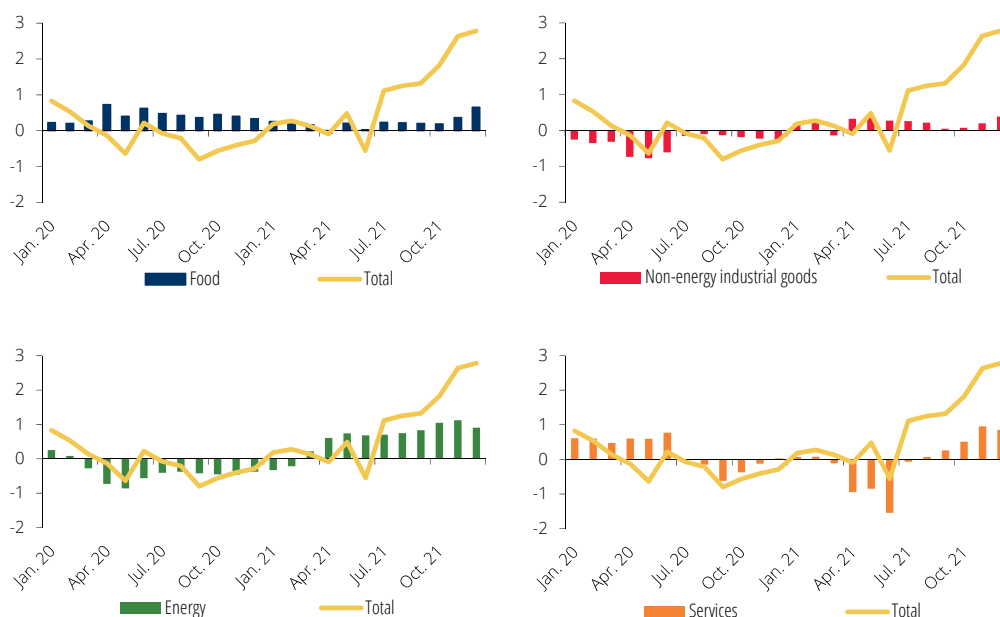
	Weight in 2021	Annual rate of change			Year-on-year rate of change			
		2019	2020	2021	2021 Q1	2021 Q2	2021 Q3	2021 Q4
Total	100.0	0.3	-0.1	0.9	0.2	-0.1	1.2	2.4
Goods	60.2	-0.3	-0.6	1.7	0.4	1.8	2.0	2.7
Food	26.2	0.6	1.8	0.8	0.8	0.0	0.7	1.5
Unprocessed food	7.4	0.2	5.0	1.1	2.4	0.7	0.5	0.9
Processed food	18.8	0.7	0.6	0.6	0.2	-0.2	0.8	1.7
Industrial	34.0	-0.9	-2.2	2.4	0.0	3.0	2.9	3.6
Non-energy	26.1	-0.6	-1.3	0.8	0.4	1.3	0.7	0.8
Energy	7.9	-1.7	-5.2	7.5	-1.8	9.4	9.8	13.2
Services	39.8	1.1	0.4	0.0	0.0	-2.4	0.4	2.0
Total excluding energy	92.1	0.5	0.3	0.4	0.3	-0.8	0.5	1.5
Total excluding food and energy	65.9	0.4	-0.2	0.2	0.1	-1.1	0.4	1.5
Total excluding food, energy and volatile tourism-related items	63.8	0.5	0.2	1.1	0.7	1.4	1.1	1.3
Total excluding administered prices	87.3	0.3	-0.1	1.0	0.1	-0.3	1.3	2.7
<i>Memo items:</i>								
Consumer Price Index (CPI)	-	0.3	0.0	1.3	0.4	0.8	1.5	2.4
HICP – Euro area	-	1.2	0.3	2.6	1.1	1.8	2.8	4.6

Sources: Eurostat and Statistics Portugal.

The largest rise in consumer prices broadened during 2021. Items with year-on-year rates of change above 2% increased their share, standing at 52.6% by the end of 2021 (20.2% by the end of 2020) (Chart I.7.2). Price changes over 4% represented 27.4% of the HICP basket by the end of 2021. Developments in underlying inflation measures confirm that the increase in inflation was not limited to the usually more volatile items and that the increase could persist in time (Box 6).

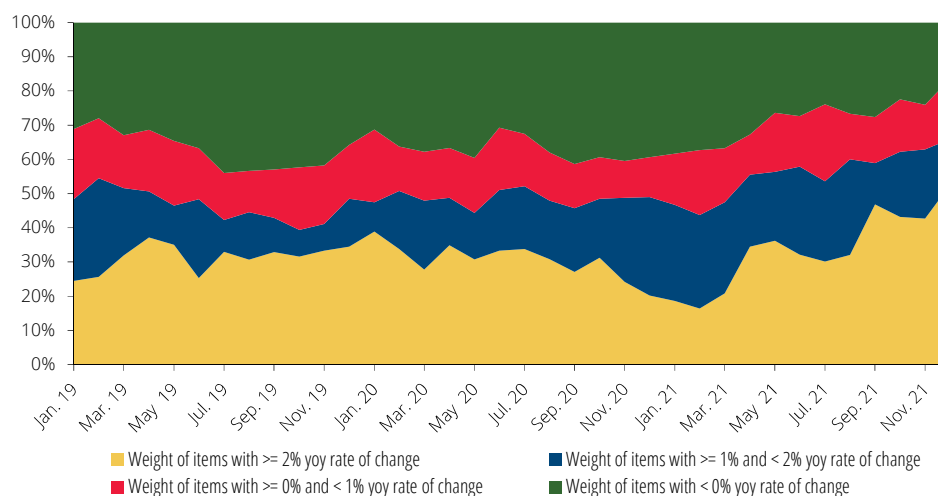
External pressures on goods prices rose throughout 2021. These pressures reflected a strong and broad-based increase in international energy and commodity prices – particularly oil and natural gas – and the impact of global supply chain disruptions on prices of several goods and transport costs. Consequently, the year-on-year rate of change in the deflator of Portuguese goods imports rose from -4.4% to 15.5% between the fourth quarter of 2020 and the fourth quarter of 2021 (from -1.1% to 9.8%, excluding fuel) (Chart I.7.3 – Panel A). These developments were reflected in industrial producer prices, which increased broadly, particularly in energy and intermediate goods. Transmission to consumer prices was visible not only in the energy component, but also in non-energy industrial goods prices (Box 7).

Chart I.7.1 • HICP – Year-on-year rate of change and main aggregates' contributions | Percentage and percentage points



Source: Statistics Portugal.

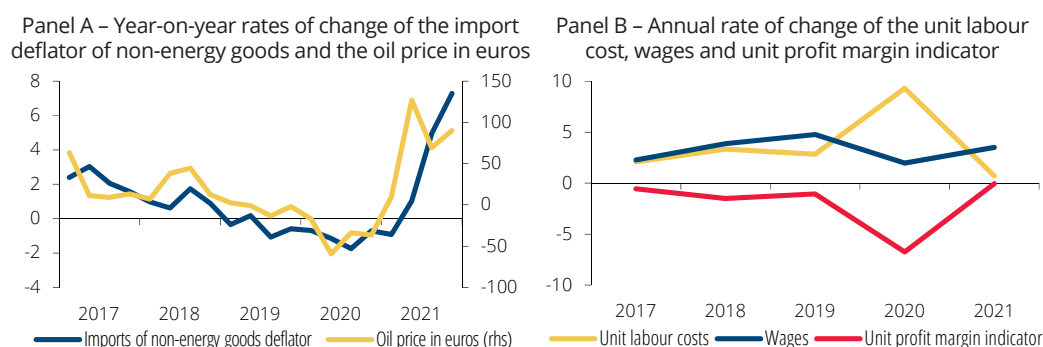
Chart I.7.2 • Distribution of the year-on-year rate of change of HICP items | Percentage



Source: Statistics Portugal (Banco de Portugal calculations).

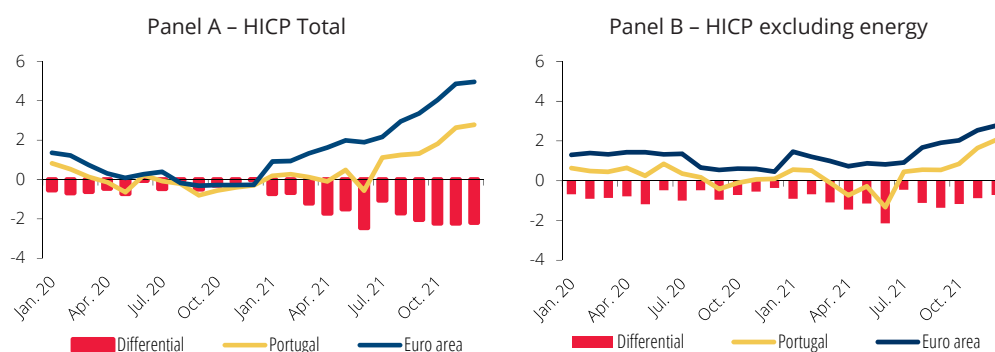
The gradual reopening of tourism-related sectors in the second half of the year contributed to the rise in services prices. After a negative contribution to overall inflation in the first half of the year, these increased throughout the following half. These developments largely reflect the behaviour of tourism-related HICP items. The significant decrease in demand, caused by the pandemic, resulted in strong downward pressures on the prices of these services in 2020, heightened in the first half of 2021 due to the imputation of prices in the same period a year earlier. During the second half of the year, a recovery in international tourism supported the normalisation of prices in this sector.

Chart I.7.3 • External and domestic pressures on prices | Rate of change in percentage



Domestic price pressures remained contained. Compensation per employee accelerated in 2021, to 3.5% (2.0% in 2020), in a slower pace of growth than that observed before the pandemic (4.3%, on average, in 2018-19). Marked fluctuations in productivity per employee – measured with employment as a basis – resulted in a sharp increase in unit labour costs (ULCs) in 2020, albeit with a subsequent moderation in 2021 (changes of 9.3% and 0.7%, respectively). It is likely that this increase in costs was largely absorbed by firms' profit margins. The unit profit margin indicator decreased significantly in 2020, stabilising in 2021 (Chart I.7.3 – Panel B).

Chart I.7.4 • HICP and inflation differential between Portugal and the euro area | Percentage and percentage points



The negative inflation differential vis-à-vis the euro area became more pronounced throughout 2021. On annual average terms, this differential stood at -1.6 p.p. (-0.4 p.p. in 2020). The behaviour of energy prices, particularly those of electricity and natural gas, explains the lower inflation in Portugal (Chart I.7.4).¹⁰ Differentiated developments in consumer prices of these energy sources mainly reflect differences in the structure and functioning of national markets, including price regulation. Excluding energy, the differential between Portugal and the euro area was more stable during 2021, standing at -1.3 p.p. in annual average terms (-0.9 p.p. in 2020).

10. See the Box entitled "Recent developments in Portuguese inflation and comparison with the euro area" in the March 2022 issue of the *Economic Bulletin*.

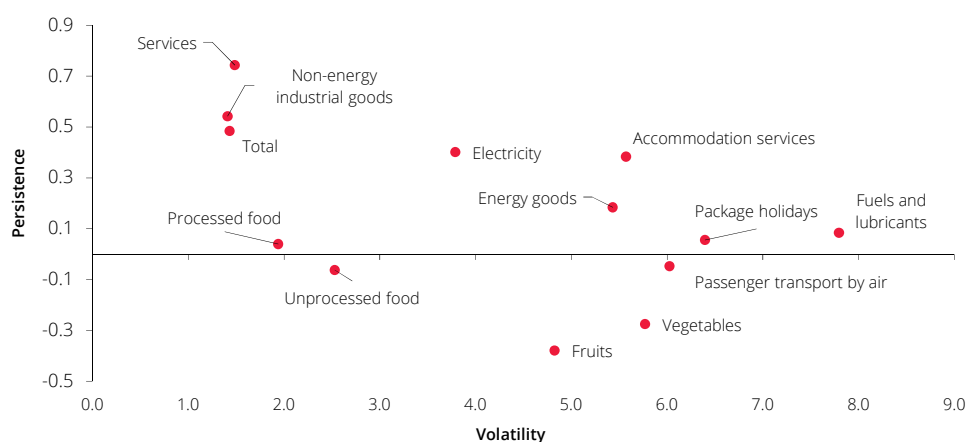
Box 6 • Measures of underlying inflation

Inflation is affected by random or temporary factors which inherently do not reflect fundamental changes in its determinants. Measures of underlying inflation are aimed at approximating the trend of price developments by filtering these effects. The recent increase in inflation, after a long period of low rates, has contributed to renewed interest in these indicators.¹¹ In the regular analysis, the preferred measures are those which can be calculated in real time, are not revised and are easily interpretable.

A set of measures of underlying inflation is based on the systematic exclusion of specific items from the calculation of the Harmonised Index of Consumer Prices (HICP). The most common excludes food and energy from the HICP, components whose prices are highly volatile and show low persistence, reflecting specific effects (e.g. weather conditions; supply decisions by oil producers) and the fact that their demand is not highly sensitive to prices (essential goods) (Chart C6.1).

The exclusion of other items on an ad hoc basis is less consensual. The prices of a number of tourism services – hotels and air travel – are also subject to high volatility, partly associated with seasonal factors. For instance, the shift in the Easter month from one year to the next can lead to substantial, but temporary, year-on-year price changes. The ECB uses a measure excluding clothing and footwear, whose prices often post significant changes associated with shifts in sales periods.

Chart C6.1 • Volatility and persistence of aggregates and specific components of HICP



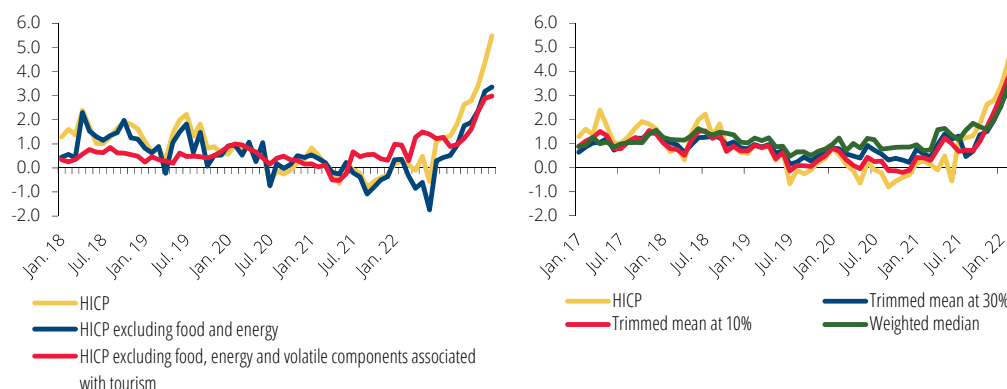
Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Notes: Calculations were performed using annual data from 2000 to 2021. The volatility measure considered was the standard deviation of the annual rate of change and persistence corresponds to the autoregressive coefficient of order 1.

Other measures are based on non-systematic exclusion (but defined at each point in time) of items with extreme year-on-year price changes, whether in a positive or negative sense. This group includes trimmed mean measures and the weighted median. For the calculation of the trimmed mean, items in the HICP basket are ordered for each period, excluding the items with the highest and lowest changes corresponding to a certain percentage of the index (e.g. 10%). By omitting extreme values – including sharp, one-off changes in typically stable components – and concentrating at the centre of the price change distribution, trimmed mean or median measures can provide a better insight into underlying inflation.

11. Traditionally, the Banco de Portugal calculates and releases this type of measure (see, for instance, Robalo Marques, Duarte Neves and Morais Sarmento (1999), "Evaluating core inflation indicators" or Coimbra and Duarte Neves (1997), "Trend inflation indicators").

These measures – with smoother developments than the total HICP – point to an increase in the inflation trend in the second half of 2021 and the first few months of 2022 (Chart C6.2). In March 2022 the reported indicators stood between 3.0% and 4.3%, compared with between -0.1% and 0.9% in December 2020. The average of these indicators has been increasing since September 2021 and stood at 3.6% in March.

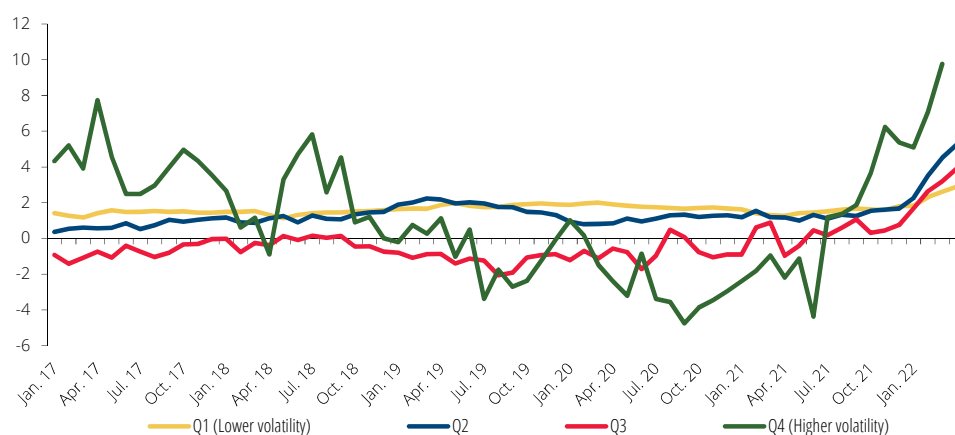
Chart C6.2 • Underlying inflation measures in Portugal | Year-on-year rate of change, in percentage



Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Notes: The trimmed mean at 30% corresponds to the year-on-year rate of change of the HICP, excluding in each month 15% of the elementary items (weighted by its weight in the HICP basket) with higher price changes and 15% with lower. In the same way, in the trimmed mean at 10%, 5% of the indices with higher price changes are excluded and 5% with lower. The weighted median corresponds to the median of the year-on-year rate of change of prices considering the HICP items weighted.

A further analysis – breaking down total observed inflation in the price changes of basic items classified by degree of historical volatility in their prices – points to upward pressures being passed through to the prices of typically more stable components (Chart C6.3). The pick-up in inflation in the recent period is largely explained by the more volatile quartile. However, the average annual price change in the less volatile quartiles also increased in late 2021 and early 2022. These quartiles include, for instance, some education and health services, rent, restaurants and cafés. The year-on-year price change in the period 2016-20 remained close to the average of 1.5% for the first volatility quartile and 1.1% for the second quartile, but increased to 2.9% and 5.2% respectively in March 2022.

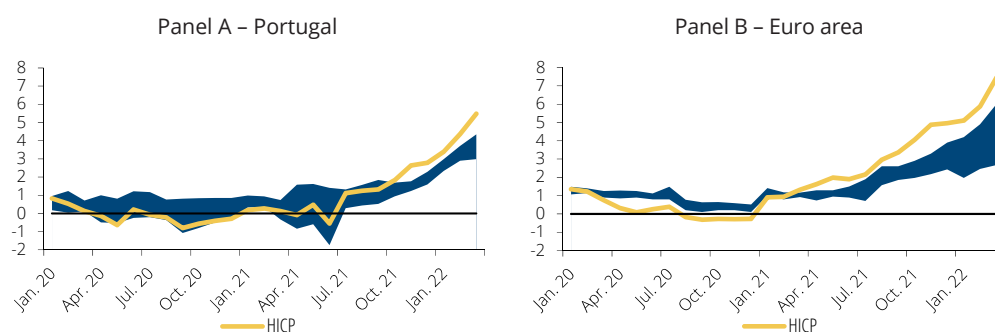
Chart C6.3 • Average inflation by volatility quartiles | Year-on-year rate of change, in percentage



Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Note: Inflation by quartile of volatility is built by sorting the elementary items of HICP (COICOP-5) by its level of volatility from January 2016 to December 2021, computing the average year-on-year rate of change of prices in each quartile (corresponding to 25% of the HICP).

A comparison with the euro area of the measures presented points to an upward trend in inflation similar to that observed in Portugal (Chart C6.4). This underlines the importance of continuing to monitor these measures, together with other relevant indicators of inflationary pressures, most notably wages and inflation expectations.

Chart C6.4 • HICP and underlying inflation measures | Year-on-year rate of change, in percentage



Sources: Eurostat and Statistics Portugal (Banco de Portugal calculations). | Notes: The shaded area includes the range of values of the following measures of underlying inflation calculated for Portugal and the euro area: weighted median, trimmed mean at 10% and 30%, HICP excluding food and energy and HICP excluding food, energy and volatile components associated with tourism. The deadline for updating the data in this box was April 21, 2022, including IHPC values until March 2022.

Box 7 • The pass-through of external inflationary pressures to producer and consumer prices in Portugal

The shortage and sharp increase in international prices of commodities and some intermediate goods, as well as rising transportation costs, led to an increase in Portuguese import prices in 2021. This shock creates pressures over the production and distribution processes and is reflected in producer and consumer prices.

Table C7.1 • Correlation analysis

		Import deflator			PPI		
		Total	Total excl. energy	Fuels	Total	Total excl. energy	Energy
Commodities	Oil prices	84.3	55.9	95.9	89.3	78.2	92.7
	Non-oil commodity prices	61.8	69.1	59.5	59.6	63.0	58.2
		PPI			HICP		
		Total	Total excl. energy	Energy	Total	Total excl. energy	Energy
Import deflator	Total	93.5	90.7	90.9	69.9	49.1	87.5
	Total excl. energy	66.0	72.4	61.3	63.5	54.3	65.0
	Energy	93.9	83.5	96.2	50.0	23.2*	82.6
		HICP					
		Total	Total excl. energy	Energy			
PPI	Total	60.8	36.5	85.4			
	Total excl. energy	59.3	40.0	76.5			
	Energy	56.9	30.7	85.6			

Sources: ECB and Statistics Portugal (Banco de Portugal calculations). | Notes: The sample period considered is from 2011 Q1 to 2021 Q3. The contemporaneous correlations between the variables proved to be the highest. The correlations presented are based on quarterly data, but the results of an equivalent monthly frequency analysis are similar. Asterisks mark the non-significant correlations considering a 90% confidence interval.

Table C7.1 presents a correlation analysis between international commodity prices (energy and other) with several components of the goods import deflator, the producer price index (PPI) and the HICP for the period 2011 Q1 to 2021 Q3.

Correlations are higher for aggregates directly related to oil prices. Furthermore, oil prices seem to have an indirect effect on a number of non-energy components. The value of correlations between non-energy components is generally lower. The breakdown of non-energy commodities into food and other commodities was also analysed, with very similar results to those of the total. Another general result of the analysis is that correlations decrease along the value chain. For instance, correlations are stronger between the PPI and the import deflator than between the latter and the HICP, pointing to differences in corporate productive structures and a staggered impact of the pass-through of shocks and the absorption of part of those shocks onto profit margins.

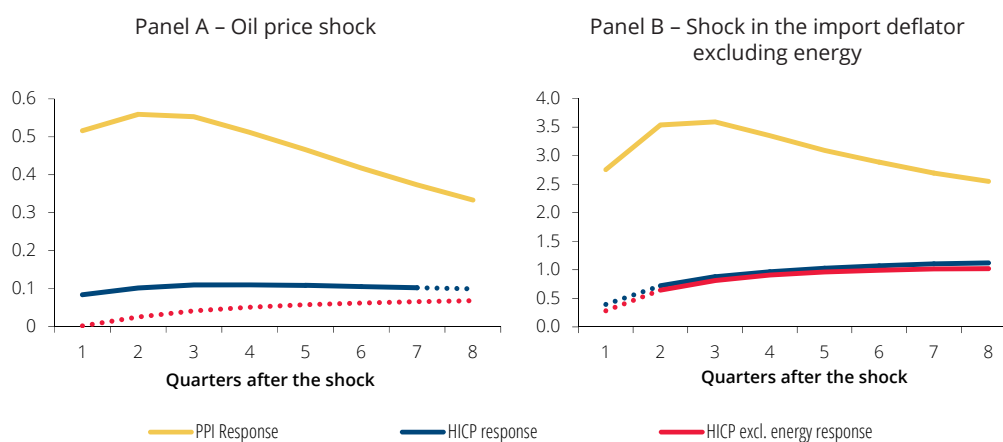
To supplement this analysis, a model was estimated as a proxy to the price transmission process along the production and distribution chain, in the line of Hahn (2003). The model includes oil prices in euro, the import deflator excluding energy, the short-term interest rate, the output gap (based on a Cobb-Douglas production function methodology), the total PPI and the HICP,

broken down into its energy and non-energy components. The identification of structural shocks associated with each variable assumes that each variable only reacts simultaneously to those listed before it in the model description above. The remaining details of the model are presented in the note to Chart C7.1.

The results of the impulse response functions (IRFs) of the HICP and PPI to structural shocks present the expected signal as well as high persistence. The IRFs shown in Chart C7.1 point to an elasticity of 0.08% of the HICP at impact of a 10% shock in oil prices in euro (1% in the HICP energy component, which weighs about 8% of total HICP). An oil price shock has an immediate, but only partial impact on the energy HICP component (particularly, petrol and diesel), as the pass-through to the consumer is influenced by various factors, such as the weight of taxes in the final price. In the periods following the shock, the impact on the energy HICP component fades as indirect impacts on the HICP excluding energy materialise. It should be noted, however, that this IRF is not statistically significant at 95%. The impact of a shock on the import deflator excluding energy is considerably greater. A shock of 10% translates into a HICP response of 0.35% at impact and 0.7% in the following quarter, peaking at around 1.2% in the 11th quarter after the shock.

Combining IRFs with actual developments in inflation determinants, shocks to oil prices and the non-energy import deflator are likely to have contributed to an increase of around 0.6 p.p. in inflation in 2021. Given the persistence and the length of time until the maximum impact of these shocks is reached, they are still expected to have a positive impact on inflation in 2022.

Chart C7.1 • Impulse response functions to a 10% shock | In percentage



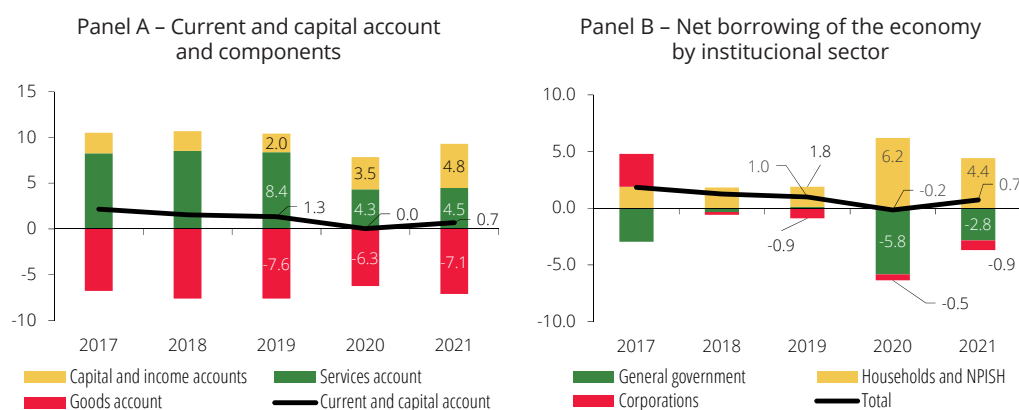
Sources: ECB and Statistics Portugal (Banco de Portugal calculations). | Notes: The estimation period considered was 1999 Q1-2021 Q4. The dashed lines indicate the non-significance of the impact, considering a 90% confidence interval. The impact on total HICP was obtained as the weighted average of the IRF of the HICP energy and excluding energy. The series were included in the model in logarithms (with the exception of the interest rate) and are adjusted for seasonal and calendar effects. Three lags of each variable were included in the model. The structural shocks in the model are identified using a Cholesky decomposition, following the order in which they are presented in the main text. A Normal-Wishart prior was considered, with the following parameterization: $\lambda_1=0.05$, $\lambda_2=0.5$, $\lambda_3=1$, $\lambda_4=100$, $\lambda_5=0.001$ and $\lambda_6=1$ and $\lambda_7=0.0001$, 2,000 iterations and burn-in of 1,000. Estimation was performed with the Matlab BEAR toolbox (Dieppe, A., Legrand, R. and van Roye, B., "The BEAR toolbox", Working Paper Series, No 1934, ECB, July 2016). Several robustness tests were performed on the model specification described here, including changes in sample period, Cholesky ordering, and choice of model variables. In particular, two separate models were also estimated considering the energy and non-energy channels separately, with no qualitative impact on the results.

8 Balance of payments

The current and capital account balance increased in 2021, from 0% to 0.7% of GDP, but remained lower than in 2019. The improvement in 2021 was due to developments in the capital account, with the deficit balance of the current account remaining unchanged (Table I.8.1). The goods and services account deficit broadened in 2021 as a result of negative developments in the goods account balance, which was not offset by the slight improvement in services. The income and capital account surplus increased, driven by the rise in transfers from the EU (Chart I.8.1 – Panel A).

The economy's higher net lending is explained by the decrease in public sector net borrowing, partially offset by a decline in household net lending. Compared to what was observed before the pandemic, the general government financing balance remained more negative and the households' financing balance continued to be higher (Chart I.8.1 – Panel B).

Chart I.8.1 • Current and capital account and net borrowing of the Portuguese economy – composition | Percentage of GDP



Sources: Banco de Portugal and Statistics Portugal.

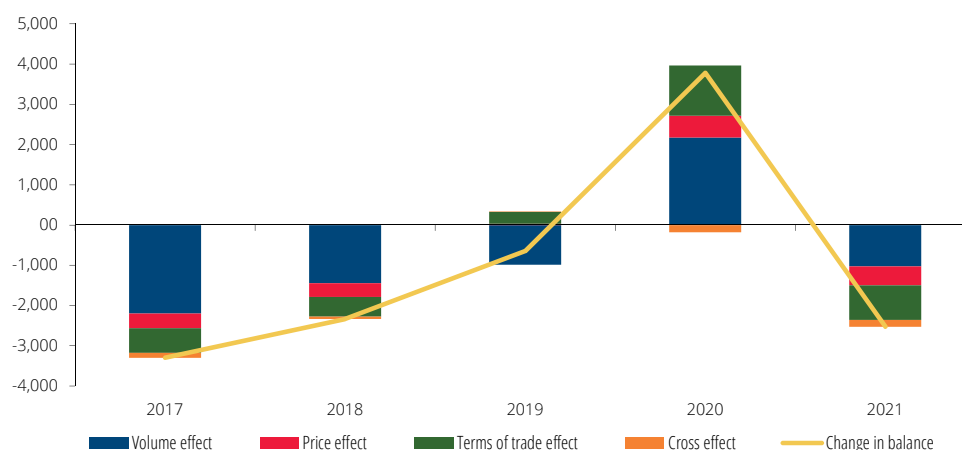
Table I.8.1 • Balance of payments | Percentage of GDP

	2017	2018	2019	2020	2021
Current and capital account	2.2	1.5	1.3	0.0	0.7
Current account	1.3	0.6	0.4	-1.1	-1.1
Goods and services account	1.5	0.9	0.8	-1.9	-2.6
Goods	-6.8	-7.6	-7.6	-6.3	-7.1
Energy	-2.2	-2.5	-2.5	-1.7	-2.8
Goods excluding energy	-4.6	-5.1	-5.1	-4.5	-4.4
Services	8.3	8.5	8.4	4.3	4.5
Travel and tourism	5.9	6.1	6.1	2.5	3.0
Other services	2.4	2.4	2.2	1.8	1.5
Primary income account	-2.3	-2.4	-2.4	-1.4	-1.2
Secondary income account	2.1	2.0	2.0	2.2	2.7
Capital account	0.9	1.0	0.9	1.1	1.8
Financial account	2.1	1.7	1.5	0.2	0.9
Errors and omissions	0.0	0.1	0.2	0.1	0.2

Sources: Banco de Portugal and Statistics Portugal.

The goods account deficit deteriorated via volume effects and terms of trade. The widening of the deficit by 0.8 p.p. of GDP reflected higher growth, in real terms, of imports, than of exports (volume effect) and an also negative effect of terms of trade, mainly due to the rise in energy prices, where Portugal stands at a deficit (Chart I.8.2). These developments partly reversed the improvement in the goods balance in 2020, a year in which the volume effects and terms of trade were positive.

Chart I.8.2 • Decomposition of the change in goods account balance | Million of euros



Sources: Banco de Portugal and Statistics Portugal. | Notes: A positive change (negative) implies an increase (decrease) in the overall balance of the goods account. The change in the overall balance of goods account can be decomposed in four effects: (i) a volume effect – effect of the change in quantities imported and exported (ii) a price effect associated with the average price growth of external trade; (iii) terms of trade effect – effect of the relative change in exports and imports prices; (iv) cross effect associated to the interaction between the change in quantities and in prices of exports and imports.

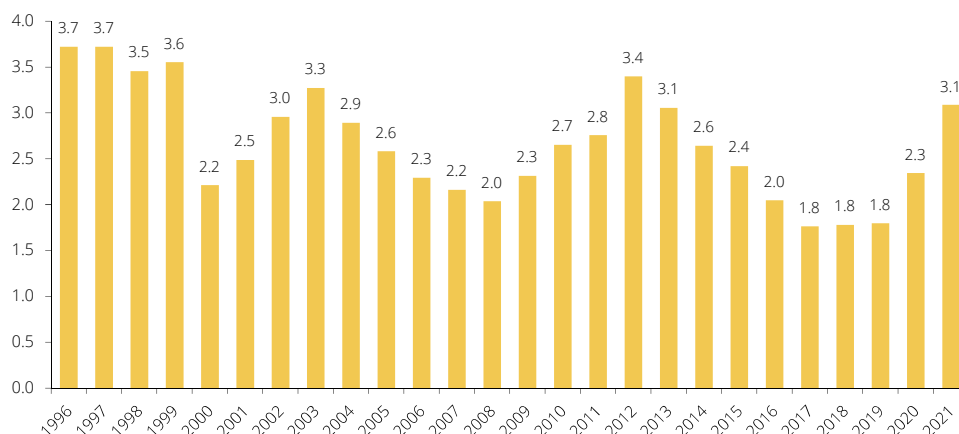
The services account surplus continued to stand well below the values observed before the pandemic. The balance increased by 0.2 p.p. of GDP in 2021 to 4.5%, compared with 8.4% in 2019. With the progressive reopening of the tourism sector and the decrease of restrictions on movement, the travel and tourism balance rose by 0.5 p.p. to 3.0% of GDP, around half of what was recorded in 2019. The balance of other services deteriorated by 0.3 p.p. to 1.5% of GDP, a decrease mainly associated with a larger deficit in the shipping balance. Costs of this type of transport increased significantly during 2021, reflecting the scarcity of ships and containers and bottlenecks in key ports.

The income account balances rose, reflecting the larger inflows of European funds. The primary income account deficit decreased by 0.2 p.p. of GDP, to 1.2%. Regarding the investment income components, the decline in interest repayments associated with the long-term debt securities portfolio held by non-residents was offset by an increase in dividends paid to non-residents. The secondary income account balance increased to 2.7% of GDP (0.5 p.p. more than in the previous year) mostly due to the increase in volume of European fund transfers from ERDF. The capital account rose by 0.7 p.p. to 1.8% of GDP, mainly reflecting the one-off effect of the reimbursement of around €1,100 million by the European Financial Stability Facility paid by Portugal under the Economic and Financial Assistance Programme.

The total funds received from the EU increased significantly. As a percentage of GDP, a figure close to that observed in 2012-13 was reached, related to the end of the multiannual programming period (QREN) (Chart I.8.3). The increase of 0.8 p.p. of GDP in 2021 was chiefly due to inflows under

the NGEU – particularly under the REACT-EU initiative – and, to a lesser extent, to expenditure financed by the new multiannual financial framework (2021-27).

Chart I.8.3 • Total funds received from the European Union | Percentage of GDP

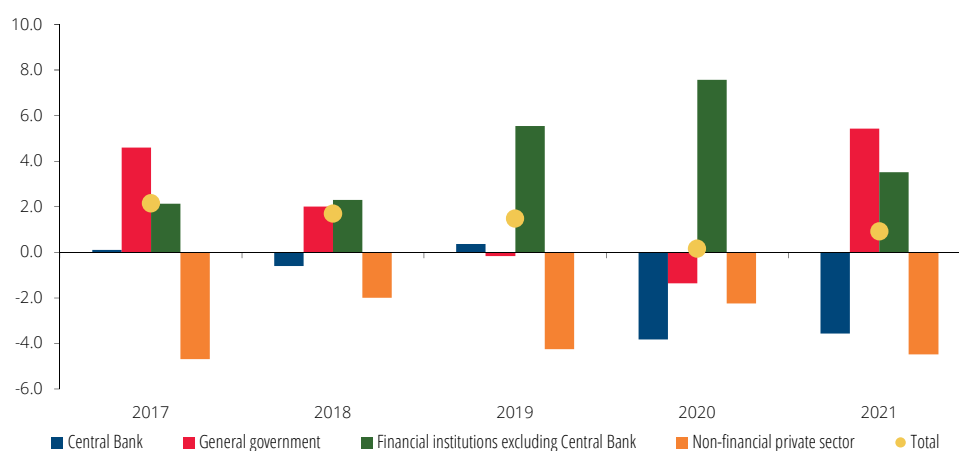


Sources: Banco de Portugal and Statistics Portugal.

In 2021, foreign investment continued to be higher than the financing obtained, resulting in a positive financial account balance (0.9% of GDP). Financial institutions (excluding the central bank) continued to invest in foreign assets in liquid terms (Chart I.8.4). Portuguese banks invested mainly in government bonds issued by euro area countries while the non-banking financial sector acquired bonds in non-resident investment funds. The lower balance presented by this sector relates to the increase in liabilities by 1.9% in 2021, having decreased by 3.3% in 2020.

General government external indebtedness decreased, largely reflecting the fall in government bonds held by non-residents, linked to the purchases made by the Banco de Portugal under the monetary policy purchase programmes.

Chart I.8.4 • Financial account balance, total and by institutional sector | Percentage of GDP

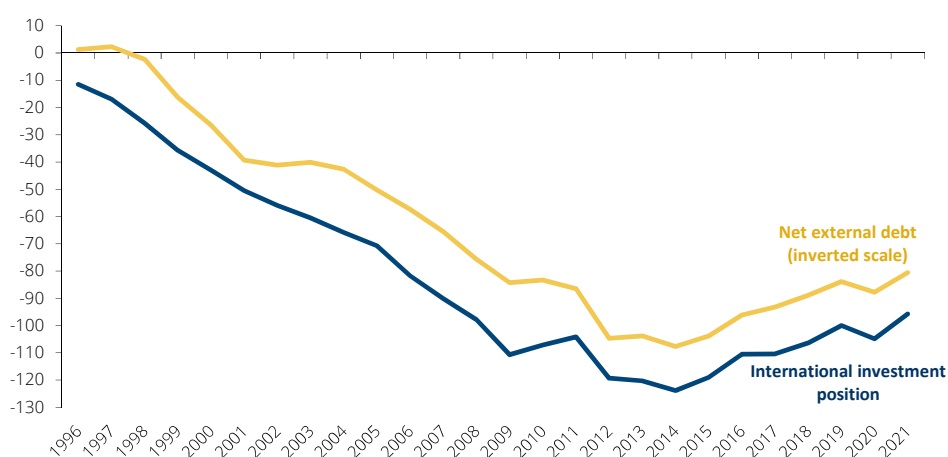


Sources: Banco de Portugal and Statistics Portugal. | Note: A positive (negative) signal corresponds to a net outflow (inflow) of funds in the Portuguese economy. The outflows of funds can occur by net acquisitions of external assets and redemptions in external liabilities. The inflows of funds correspond to sales of external assets or increase of liabilities held by non residents.

The non-financial private sector continued to obtain funding abroad, presenting a change in liabilities of 4.5% of GDP, while assets remained unchanged. Funding continued to be channelled through net flows of direct investment and, to a lesser degree, investment in long-term securities.

The international investment position (IIP) became less negative, moving up from -105% of GDP in 2020 to -96% by the end of 2021. This increase in the IIP was largely due to the decrease in liabilities and increase in assets categorised as Portfolio Investment. Net foreign debt fell from 88% by the end of 2020, to 81% by the end of 2021 (Chart I.8.5). The level and composition of the IIP has implications in terms of refinancing risk and vulnerability of the debt service to interest rate increases. Regardless of the recent decrease, the deficit in the investment income account stood at 2.1% of GDP, showing the importance of ensuring a more significant reduction of the external debtor position, particularly of the debt component, so as to prevent a possible rise in interest rates from translating into destabilising dynamics of the external accounts.

Chart I.8.5 • International investment position and External debt | Percentage of GDP



Sources: Banco de Portugal and Statistics Portugal.

II Special issue

The evolution of firms' liquidity
and leverage in 2020

The evolution of firms' liquidity and leverage in 2020¹

Introduction

In 2020 Portuguese firms were affected by the COVID-19 pandemic, an exogenous shock of high magnitude and uncertainty, with a global impact. The health response forced many firms to temporarily close their operations, with consequences on their ability to generate cash flow and income. Initially, this situation posed a liquidity risk to firms which usually have unpostponable expenses, both operational (wages and rents) and financial (interest and loan repayments), which, if not complied with, could put their continuity at risk in the short term. In the medium to long term, the pandemic shock poses a risk to the solvency of firms, which in many cases had to increase their debt in a high uncertainty environment regarding the time horizon and magnitude of the upturn.

Economic risks stemming from pandemic containment measures led governments and central banks to adopt various measures to support firms. Measures taken by governments consisted mainly of four types: moratoria on bank loans, government-backed credit lines, support to maintain employment (such as furlough schemes) and outright grants. In the European Union, these measures varied from country to country in terms of both magnitude and extent. Concurrently, the accommodative monetary policy was reinforced with the creation of a new asset purchase programme (PEPP) and the launch of a new set of longer-term refinancing operations (TLTRO-III and PELTRO), and some regulatory requirements were relaxed, in both cases with the aim of avoiding credit supply constraints.

The high level of public support raises questions regarding its effectiveness and efficiency. In particular, questions have been raised as to whether moratoria have contributed to delaying some unhealthy firms' default, as well as about the possible impact of increased leverage on the solvency of many firms. This last issue is particularly relevant in the Portuguese case, given the high leverage and low profitability of many firms.

The available literature indicates that public support measures were mainly targeted at viable firms heavily affected by the pandemic (Epaulard et al. (2021) and Demmou and Franco (2021)). Despite the increased leverage in many firms, existing evidence suggests little impact on their viability (Altavilla et al. (2021)). In the case of Portugal, Kozeniauskas et al (2022) conclude that the least productive firms were those that made most use of support measures.

This Special issue adds to the discussion in progress by detailing the factors that contributed to the change in liquidity (cash and bank deposits over assets ratio) and leverage (liabilities-to-assets ratio). The breakdown of the change in liquidity allows to understand how have firms reacted to the decrease in their turnover. In particular, it makes it possible to analyse whether firms have offset the shock solely by adjusting their operating costs or whether, furthermore, they have scaled back investment and/or turned to external sources of capital. The way firms have offset the economic shock caused by the pandemic has implications for their future. A significant fall in

1. Prepared by Nuno Silva and Pedro Dias Moreira.

investment may affect the growth of firm's activity and the access to external financing, if through indebtedness, raises questions regarding solvency in the medium/long term. The breakdown of the leverage ratio allows for a detailed analysis of the impact on the leverage ratio of changes in financing sources, both internal (income) and external (shareholders and creditors) to the firm.

The sample under consideration is made up of 239 thousand firms that have reported *Informação Empresarial Simplificada* (IES) over the past three available years (2018, 2019 and 2020). These firms represent 80% of the total assets of non-financial corporations operating in Portugal. The contribution of entries and exits of firms was not computed due to some reporting delays, which may lead to an overestimation of the impact of firms' exit and an underestimation of firms' entry. The results presented are weighted by firms' assets, to avoid an over-representation of micro firms.

Firms' liquidity increased in 2020. This development reflected a significant drop in operating costs, in particular in supplies and external services, and in investment. Investment fell mainly in large firms. Liquidity increased more markedly in smaller firms, as a result of a smaller reduction in cash flow from operating activities and an increase in cash flow from financing, in particular through debt, showing the impact of government-backed credit lines, which were mainly intended for SMEs. The increase in liquidity was less pronounced in those sectors hardest hit by the pandemic, reflecting a sharper fall in gross profit, compared to less affected sectors. Furthermore, dividends paid to shareholders were substantially reduced and, in the case of firms in the most affected sectors, there was an increase in loans. These developments offset the drop in cash flows associated with the gross profit. Despite the sharper downturn in activity, firms in the most affected sectors experienced a fall in investment close to that observed in other sectors. Firms that benefited from support policies that facilitated bank lending maintained their investment at the 2019 level.

In aggregate terms, the leverage of firms decreased further in 2020, in line with what had been observed in recent years. The decrease in leverage was associated with a reduction in dividends and, to a lesser extent, in the liabilities of firms in the least affected sectors. However, firms in the most affected sectors raised their leverage due to losses and increased liabilities. The increase in liabilities was more prominent for firms that benefited from government-backed credit lines, despite these firms having a below than average leverage and higher than average pre-crisis profitability.

The evolution of firms' liquidity in 2020

The change in firms' cash and bank deposits, hereinafter referred to as change in cash only, is usually broken down into three components: cash flow from operating activities (CFO), cash flow from investing (CFI) and cash flow from financing activities (CFF).

$$\Delta Cash_t = CFO_t + CFI_t + CFF_t.$$

Cash flows from operating activities result from the firm's activity, namely from gross profit (Table 1), changes in working capital, cost of supplies and external services and employee expenses, operating subsidies, tax paid and other operating cash flows. Cash flows from investing include the investment and interest received and similar income. Cash flows from financing include changes in debt, dividends paid to shareholders (net of capital injections), the change in assets and liabilities of shareholders/partners and interest paid and similar expenses.

For firms at a mature stage, in general, cash flows from operations are positive and cash flows from investing and from financing are negative. This pattern reflects the generation of profits used to pay lenders and support investments. Even so, it is common for firms to offset temporary decreases in cash flows from operations with external financing, debt in particular, which is reflected in a positive

contribution of cash flows associated with financing. Positive cash flows from financing are also common in younger firms or in those with large investment opportunities but unable to internally generate the capital required to make these investments.

Table 1 • Definitions of some of the variables used

Variable	Definition
Gross profit	+ Sales and services provided – Costs of goods sold and material consumed
Change in working capital	– Change in inventories – Change in current biological assets – Change in accounts receivable – Change of advances to suppliers – Change in other accounts receivable + Change of suppliers account + Change of advances from customers + Change in other accounts payable – Impairment of inventories – Impairment of accounts receivable
Other operating flows	+ Change in production inventories + Own work capitalised +/- Deferrals – Change in other current assets + Other income and earnings – Other expenses and losses
Investment	– Change in investment assets – Depreciation and amortization expenses – Impairment of investments
Debt	+ Change in obtained funding + Change in post-employment benefit obligations + Change in financial liabilities held for trading + Change in other financial liabilities + Change in non-current liabilities held for sale + Change in other current liabilities
Dividends net of capital injections	– Change in equity + Net income + Change in other equity accounts

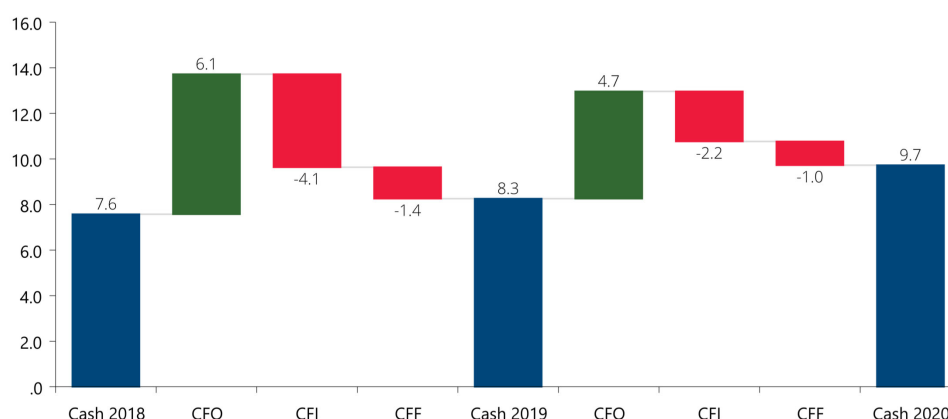
In 2020 the cash-to-assets ratio increased by 1.5 p.p., from 8.3% to 9.7% (Chart 1). The increase in liquidity occurred in a context of a sharp slowdown in economic activity, which dropped the cash flow from operations from 6.1% to 4.7%. This drop was more than offset by a fall in investment, from 4.1% to 2.2%, and by a less negative financing flow (from -1.4% to -1.0%). The increase in cash flow was accompanied by a decrease in heterogeneity with the coefficient of variation decreasing by 3 p.p. Chart 2 shows that the number of firms with a very low cash-to-assets ratio has dropped.

The decrease in operating costs, in conjunction with public support, made it possible to reduce the impact of the slowdown in economic activity on cash flow from operations.

The main contribution to the decrease in operating costs was the 2 p.p. decrease in expenditure on supplies and external services (Table 2). Moreover, employee expenses dropped slightly (0.2 p.p.) and operating subsidies increased (0.3 p.p.). These dynamics reflect public support, namely furlough schemes – simplified furlough and support for progressive resumption. Firms

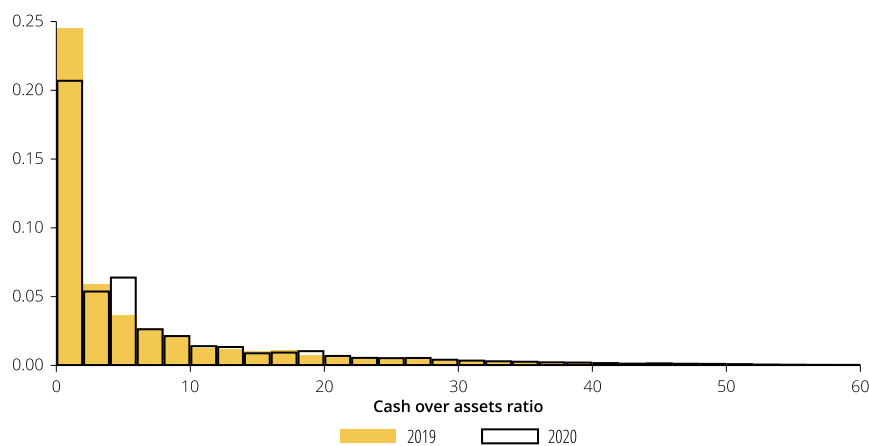
continued to consider employee expenses in the accounts, while recording a subsidy associated to the benefit of these measures. The decrease in operating costs contributed to a decline in cash flow from operations (-1.4 p.p.) more moderate than that of the gross profit (-3.8 p.p.). This result is evident by comparing the distributions of the change in cash flows from operating activities and gross profit in 2019 and 2020, shown in Chart 3, which illustrates that the distribution of cash flows from operations in 2020 is closer to that observed in 2019 than in the case of gross profit.

Chart 1 • Contributions to the firms' annual change in cash | Percentage of assets



Source: Informação Empresarial Simplificada. | Notes: The blue bars represent the cash amount at the end of the year. The green bars are positive flows (cash inflows) and the red bars are negative flows (cash outflows). CFO corresponds to cash flow from operating activities, CFI to cash flow from investing and CFF to cash flow from financing activities. The cash amount and flows are presented as a percentage of the average assets from 2018 to 2020. All values are calculated at the firm level and then an assets weighted average is calculated.

Chart 2 • Firms cash distribution | Percentage of assets



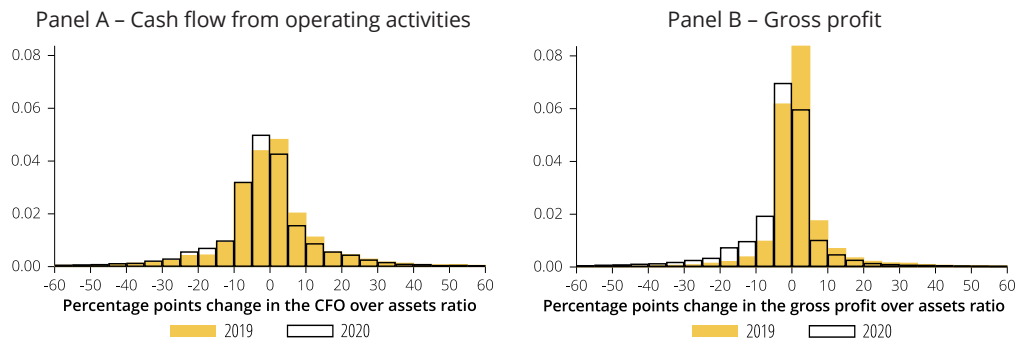
Source: Informação Empresarial Simplificada. | Notes: The histogram is weighted by the assets.

The fall in investment was sharper in firms where a greater decrease in cash flow from operations was observed. Chart 4 shows the ratio between the change in cash flow from operations and the change in cash flow from investing for firms that have increased/decreased their cash flow from financing. The sharper fall in investment in the case of firms with negative cash flow from financing points to the importance of external financing to mitigate such an adjustment.

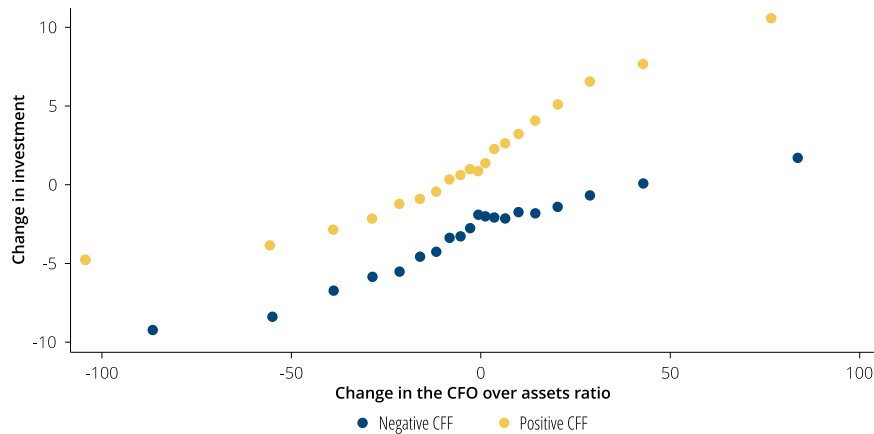
Table 2 • Cash flow decomposition | Percentage of assets

	2019	2020	Change
Cash	8.3	9.7	1.5
Cash flow from operating activities	6.1	4.7	-1.4
Gross profit	34.4	30.6	-3.8
Change in working capital	-0.2	-0.3	-0.1
Supplies and external services	-16.9	-14.9	2.0
Employee expenses	-11.5	-11.2	0.2
Operating subsidies	0.2	0.6	0.3
Government	-0.9	-0.8	0.1
Others	1.0	0.7	-0.3
Cash flow from investing	-4.1	-2.2	1.9
Change in investment assets	-4.3	-2.4	1.9
Interests received and similar income	0.2	0.2	0.0
Cash flow from financing activities	-1.4	-1.0	0.3
Debt	0.9	0.9	-0.1
Dividends net of capital injections	-1.8	-1.2	0.6
Shareholders assets/liabilities	0.3	0.1	-0.2
Interests paid and similar expenses	-0.9	-0.8	0.0

Source: Informação Empresarial Simplificada.

Chart 3 • Distribution of change in gross profit and cash flow from operating activities in 2019 and 2020 | Percentage of assets

Source: Informação Empresarial Simplificada. | Notes: CFO corresponds to cash flow from operating activities. Only firms that were present between 2017 and 2020 were considered. The assets were computed as the average between 2017 and 2020. The histograms were weighted by the assets.

Chart 4 • Relationship between the change in investment and the change in the cash flow from operating activities (CFO) | Percentage of assets

Source: Informação Empresarial Simplificada. | Notes: This type of graph (binscatter) groups the observations of the abscissa axis into different groups with the same number of elements and then the average of the variable of the ordinate axis is calculated. The binscatter is not asset weighted.

In the case of cash flow from financing, the drop in its negative contribution from -1.4 p.p. to -1 p.p. resulted from the decrease in dividends paid to shareholders (0.6 p.p.). The contribution of debt to cash flow from financing remained the same as in 2019, despite the drop in debt servicing costs for firms that applied to credit moratoria and government-backed credit lines.

To assess differences in firms' adjustment to the unexpected slowdown in economic activity, the analysis is complemented in detail by (i) size, (ii) exposure of the sector of activity to the pandemic crisis and (iii) use of State support (credit moratoria and government-backed credit lines).

Table 3 breaks down the change in cash for firms of different sizes. The sample used comprises 196,000 micro firms (corresponding to 22% of total assets), 36,000 small firms (22% of total assets), 6,000 medium-sized firms (25% of total assets) and 1,000 large firms (30% of total assets). The weight of cash on firms' assets tends to shrink with their size, which reflects a greater cash management ability and scale effects in large firms. Moreover, large firms have a more diversified customer base, which makes them less exposed to adverse economic shocks, and find it easier to obtain financing. These features make size a relevant factor in characterising how firms reacted to the pandemic and how they managed their liquidity.

Table 3 • Cash flow decomposition by firm size | Percentage of assets

	Micro			Small			Medium			Large		
	2019	2020	Change	2019	2020	Change	2019	2020	Change	2019	2020	Change
Cash	11.7	13.3	1.6	9.9	11.9	2.1	7.1	8.4	1.3	5.5	6.6	1.1
Cash flow from operating activities	4.0	3.5	-0.5	5.9	4.8	-1.1	6.4	6.1	-0.4	7.7	4.4	-3.3
Gross profit	28.2	25.3	-2.9	37.7	34.1	-3.7	34.5	31.3	-3.2	36.4	31.5	-4.9
Change in working capital	-0.7	-0.1	0.6	-0.7	-0.7	0.0	-0.4	0.3	0.7	0.7	-0.6	-1.3
Supplies and external services	-14.0	-12.4	1.6	-18.1	-16.1	1.9	-17.5	-15.7	1.8	-17.6	-15.1	2.5
Employee expenses	-9.3	-9.3	0.0	-13.3	-13.2	0.2	-11.0	-10.7	0.3	-12.1	-11.6	0.4
Operating subsidies	0.4	0.8	0.4	0.3	0.9	0.6	0.2	0.5	0.3	0.1	0.3	0.2
Government	-0.8	-0.7	0.0	-0.9	-0.8	0.1	-0.8	-0.8	0.0	-1.1	-0.9	0.2
Others	0.2	0.0	-0.2	0.9	0.8	-0.2	1.3	1.1	-0.2	1.3	0.9	-0.4
Cash flow from investing	-3.5	-2.9	0.6	-3.7	-2.7	1.0	-3.0	-1.8	1.2	-5.7	-1.6	4.1
Change in investment assets	-3.6	-2.9	0.7	-4.0	-3.0	0.9	-3.3	-2.1	1.2	-5.9	-1.8	4.1
Interests received and similar income	0.1	0.1	0.0	0.3	0.3	0.1	0.2	0.3	0.0	0.2	0.2	-0.1
Cash flow from financing activities	0.5	0.9	0.4	-1.3	0.0	1.3	-2.8	-3.0	-0.1	-1.6	-1.6	0.0
Debt	1.3	1.5	0.2	0.9	1.2	0.3	0.0	0.3	0.2	1.4	0.7	-0.8
Dividends net of capital injections	-0.1	0.0	0.1	-1.2	-0.5	0.7	-2.0	-2.3	-0.3	-3.2	-1.6	1.6
Shareholders assets/liabilities	-0.2	-0.2	0.0	-0.1	0.1	0.3	0.3	0.0	-0.2	1.1	0.3	-0.8
Interests paid and similar expenses	-0.5	-0.5	0.0	-0.9	-0.8	0.1	-1.1	-1.0	0.1	-0.9	-1.0	0.0

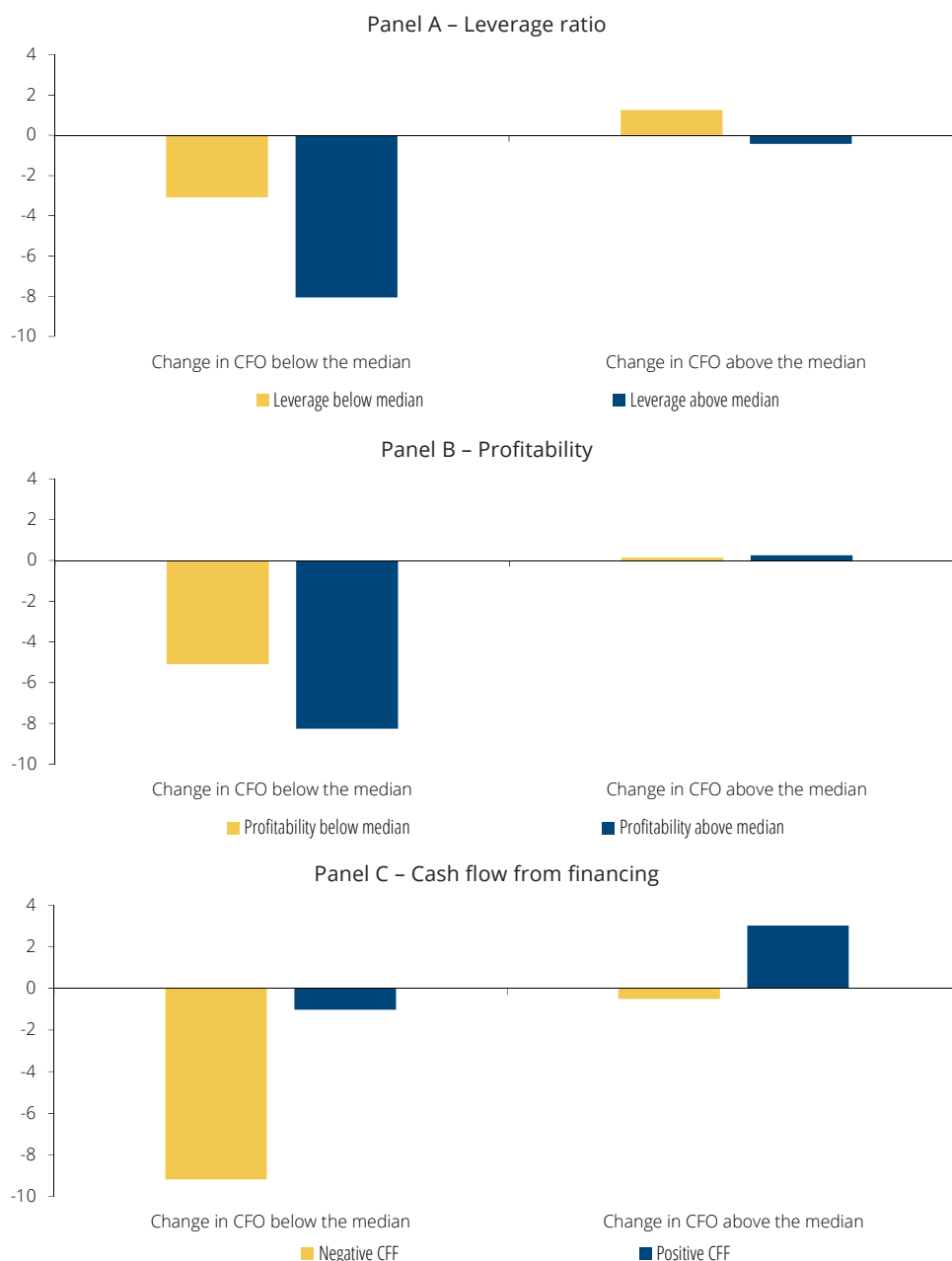
Source: Informação Empresarial Simplificada. | Notes: The firm's classification follows the criteria of the European Commission Recommendation of 6 May 2003 on the definition of micro, small and medium-sized companies (2003/361/EC). The cash amount and flows are presented as a percentage of the average assets from 2018 to 2020. All values are calculated at the firm level and then an assets weighted average is calculated.

Liquidity increased in all size classes of firms, but the increase was more significant for smaller firms. The latter experienced a smaller decrease in their cash flow from operations and an increase in cash flow from financing, mainly through debt, which should be related to the fact that government-backed credit lines are mainly intended for SMEs. According to data from the Central Credit Register, in 2020 new government-backed loans accounted for around 49% of the total amount of new loans to SMEs with a maturity of more than one year. The share of loans under moratoria accounted for 34% of the total amount of the stock of loans to firms in December 2020, without much differentiation by size.

Large firms have reduced their investment more than the others, which, together with a decrease in dividends paid, contributed to mitigate the effects of the drop in cash flows from operations. The fall in investment in large firms contributed 1.2 p.p. to the 1.9 p.p. reduction in aggregate investment. Chart 5 shows the change in investment for large firms with different leverage, profitability and financing flow levels, conditioning on changes in cash flow from operations. The charts show that the fall in investment occurred mainly in the most leveraged large firms, with higher

profitability and negative cash flow from financing. The greater decline in investment in the case of more leveraged firms is likely to be related to financial constraints arising from the greater risk of insolvency of these firms. The fact that the fall in investment was higher in the most profitable firms is likely to be related to the fact that these are the firms that typically invest the most. The smaller reduction in investment in firms with positive financing flow suggests that raising external financing was important to avoid an abrupt investment adjustment.

Chart 5 • Large firms change in investment as a function of leverage, profitability and financing cash flow, conditional on the change in operating cash flow | Percentage of assets

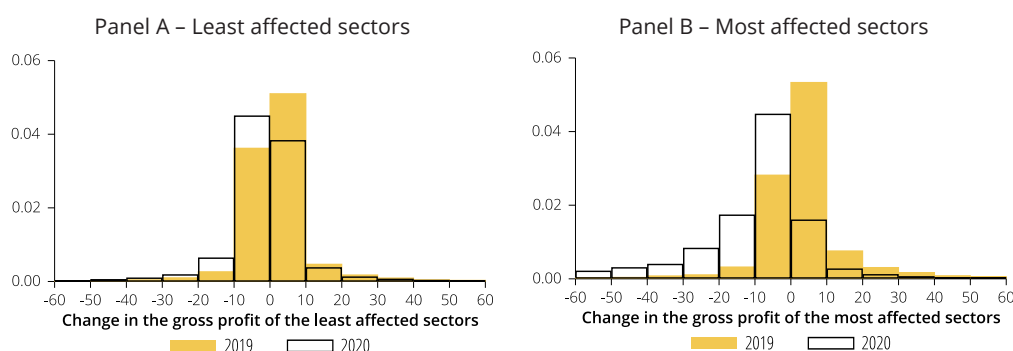


Source: Informação Empresarial Simplificada. | Notes: CFO and CFF correspond, respectively, to cash flow from operating activities and cash flow from financing activities. The median CFO is calculated based on 2020 values. The median leverage ratio and profitability are calculated based on 2019 values. Profitability is measured through the EBITDA to assets ratio. All values are calculated at the firm level and then an assets weighted average is calculated.

Table 4 breaks down the change in cash for firms in the least and most affected sectors. The distinction between the two groups is based on the intensity of human contact needed to carry out firms' activities. The most affected sectors thus include trade and repair of vehicles, accommodation and food services, air transport and storage, as well as arts, entertainment, sports and recreation.

Liquidity increased in the sectors most and least affected by the pandemic. Even so, the increase was more marked in sectors less affected by the pandemic, reflecting a slighter decrease in gross margin (-1.1 p.p.). This decrease contrasts with a -17.7 p.p. variation in the case of the firms in the most affected sectors. A comparison of the distribution of gross profit in 2019 and 2020 (Chart 6) shows that, in the case of firms in the most affected sectors, the proportion of those with a very negative change rose significantly. Conversely, in the case of less affected sectors, an increase can be observed in the percentage of firms around slightly negative values.

Chart 6 • Distribution of change in gross profit in 2019 and 2020 for the most and least affected sectors | Percentage of assets



Source: Informação Empresarial Simplificada. | Notes: CFO corresponds to cash flow from operating activities. Only firms that were present between 2018 and 2020 were considered. The assets were computed as the average between 2018 and 2020. The histograms were weighted by the assets.

Firms in the most affected sectors offset the reduction in gross profit with a decrease in supplies and external services (Table 4). In addition, these sectors experienced a decrease in employee expenses, divestment in working capital and an increase in operating subsidies, reflecting the public support measures, in particular the furlough schemes – simplified furlough and support for progressive resumption. The cut in costs with supplies and external services was greater than expected given the historical relation between the change in these costs and the change in gross profit. The opposite occurred in the case of employee expenses. These developments suggest that furlough schemes – simplified furlough and support for progressive resumption – may have played an important role in maintaining employment.

Furthermore, firms in the most affected sectors dropped investment in response to the impact of the reduction in economic activity. Despite having reduced much more cash flow from operations, firms in the most affected sectors decreased their investment only slightly above those in the least affected sectors. This evolution was driven by the strong increase in financing flows, both through debt and a net capital injection from shareholders.

Large firms in less affected sectors contributed the most to the decline in aggregate investment. Table 5 breaks down the investment for the most and least affected firms detailed by firm size. In the case of large firms, the fall in investment was sharper in firms in the least affected sectors, where the majority of these firms are located. The fall in investment in these firms contributed 1.1 p.p. to the 1.9 p.p. drop in aggregate investment.

Table 4 • Cash flow decomposition for the least and most affected sectors by the pandemic
| Percentage of assets

	Least affected sectors			Most affected sectors		
	2019	2020	Change	2019	2020	Change
Cash flow from operating activities	7.6	9.2	1.5	11.6	12.7	1.1
Gross profit	6.0	5.2	-0.7	7.0	1.9	-5.1
Change in working capital	29.7	28.6	-1.1	59.1	41.4	-17.7
Supplies and external services	0.0	-0.4	-0.3	-1.1	0.1	1.2
Employee expenses	-13.7	-13.0	0.6	-33.8	-24.6	9.2
Operating subsidies	-10.2	-10.3	0.0	-17.8	-16.2	1.6
Government	0.2	0.4	0.2	0.5	1.7	1.2
Others	-0.9	-0.8	0.1	-0.9	-0.9	0.0
Cash flow from investing	1.0	0.8	-0.2	1.0	0.4	-0.6
Change in investment assets	-3.6	-1.8	1.8	-6.6	-4.4	2.2
Interests received and similar income	-3.8	-2.0	1.8	-6.8	-4.6	2.2
Cash flow from financing activities	0.2	0.2	0.0	0.2	0.2	0.0
Debt	-1.7	-1.9	-0.2	0.5	3.7	3.2
Dividends net of capital injections	0.7	0.1	-0.6	2.1	4.8	2.7
Shareholders assets/liabilities	-1.8	-1.4	0.4	-1.4	0.2	1.7
Interests paid and similar expenses	0.3	0.2	-0.1	0.7	-0.5	-1.2
Juros pagos e gastos similares	-0.9	-0.8	0.0	-0.9	-0.9	0.0

Source: Informação Empresarial Simplificada. | Notes: The sectors most affected by the pandemic are essentially retail trade and vehicles repair, accommodation and food services, air transport and storage, arts, entertainment and recreation activities. The cash amount and flows are presented as a percentage of the average assets from 2018 to 2020. All values are calculated at the firm level and then an assets weighted average is calculated.

The impact of the pandemic on firms was mitigated by public support measures. Table 6 breaks down the change in cash by measures used to support corporate financing – credit moratoria on existing loans and government-backed credit lines. The firms that have not made use of moratoria and government-backed credit lines represent 71%. The firms that made use of moratoria only, credit lines only and both measures represent 12%, 7% and 10%, respectively.

Table 5 • Investment cash flow for the most and least affected sectors by the pandemic, by firm size | Percentage of assets

	Micro			Small			Medium			Large		
	2019	2020	Change	2019	2020	Change	2019	2020	Change	2019	2020	Change
Least affected	-3.1	-2.6	0.5	-3.1	-2.3	0.8	-2.5	-1.6	0.9	-5.2	-1.0	4.2
Most affected	-5.4	-4.0	1.4	-6.4	-4.5	1.9	-5.5	-3.0	2.5	-9.3	-6.1	3.1

Source: Informação Empresarial Simplificada. | Notes: The firm's classification follows the criteria of the European Commission Recommendation of 6 May 2003 on the definition of micro, small and medium-sized companies (2003/361/EC). The sectors most affected by the pandemic are essentially retail trade and vehicles repair, accommodation and food services, air transport and storage, arts, entertainment and recreation activities. The cash amount and flows are presented as a percentage of the average assets from 2018 to 2020. All values are calculated at the firm level and then an assets weighted average is calculated.

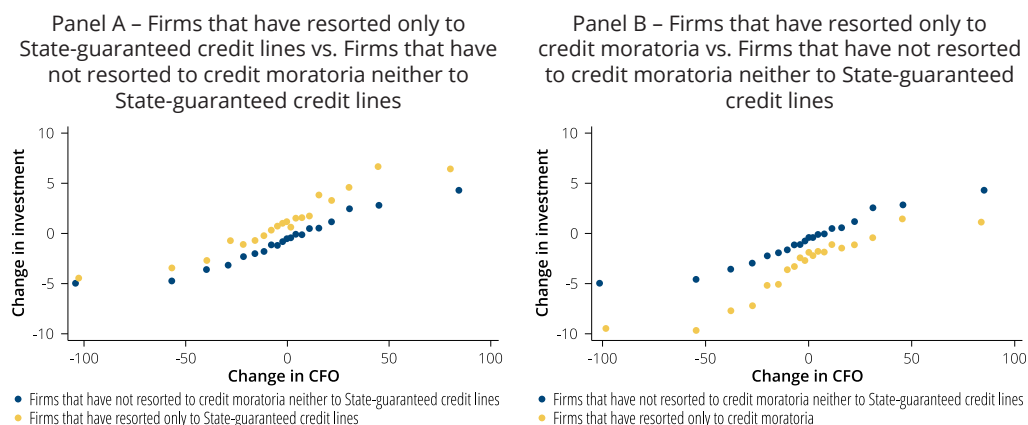
Liquidity increased in all clusters of firms, but more in those firms that made use of government-backed credit lines. This increase took place notwithstanding the sharper drop in cash flows from operations and the smaller fall in investment observed in these firms. For those firms that have resorted only to credit lines, cash flows from investing remained similar to those in 2019. A micro (unweighted) analysis shows that, for firms that had resorted to credit lines, the fall in investment will have been lower than for those that have not made use of moratoria or credit lines, controlling for the evolution of cash flow from operations (Chart 7 – Panel A). This pattern is not observed in most firms that had resorted to moratoria only (Chart 7 – Panel B), although it can be observed in the aggregate (Table 6). The difference between micro results and aggregate results largely reflects the behaviour of larger firms.

Table 6 • Cash flow decomposition by support policies used | Percentage of assets

	Firms that have not resorted to credit moratoria neither to State-guaranteed credit lines			Firms that have resorted only to credit moratoria			Firms that have resorted only to State-guaranteed credit lines			Firms that have resorted both to credit moratoria and State-guaranteed credit lines		
	2019	2020	Change	2019	2020	Change	2019	2020	Change	2019	2020	Change
Cash	9.2	10.2	1.0	4.5	5.5	1.0	9.8	14.5	4.8	5.1	8.2	3.1
Cash flow from operating activities	6.3	5.1	-1.2	4.7	3.9	-0.7	7.3	4.6	-2.7	6.1	2.9	-3.2
Gross profit	31.4	28.7	-2.7	28.7	24.6	-4.1	57.1	50.1	-7.0	46.6	38.3	-8.3
Change in working capital	0.0	-0.1	0.0	0.0	0.2	0.2	-1.5	-2.1	-0.6	-0.8	-1.4	-0.6
Supplies and external services	-15.1	-13.6	1.5	-14.6	-12.5	2.1	-28.7	-25.0	3.7	-24.0	-19.8	4.2
Employee expenses	-10.1	-10.1	0.1	-10.0	-9.4	0.6	-19.8	-19.6	0.1	-16.7	-15.9	0.8
Operating subsidies	0.2	0.4	0.2	0.2	0.6	0.4	0.4	1.4	1.0	0.3	1.3	1.0
Government	-1.0	-0.9	0.1	-0.4	-0.2	0.2	-1.3	-1.0	0.2	-0.6	-0.6	0.0
Others	0.9	0.7	-0.3	0.7	0.6	-0.1	1.0	0.9	-0.2	1.3	1.0	-0.3
Cash flow from investing	-3.7	-1.4	2.3	-3.8	-2.8	1.0	-5.6	-5.6	0.0	-6.3	-4.7	1.6
Change in investment assets	-3.9	-1.6	2.3	-4.0	-3.0	1.0	-5.7	-5.7	0.0	-6.4	-4.8	1.6
Interests received and similar income	0.2	0.2	0.0	0.3	0.3	0.0	0.1	0.1	0.0	0.1	0.1	0.0
Cash flow from financing activities	-1.8	-2.7	-0.9	-0.8	-0.2	0.6	-0.9	5.8	6.7	0.4	4.9	4.5
Debt	0.8	-0.5	-1.2	1.2	0.2	-1.0	0.7	7.7	7.0	2.1	6.6	4.5
Dividends net of capital injections	-2.2	-1.7	0.5	-0.5	1.0	1.4	-1.2	-0.9	0.3	-0.6	-0.2	0.4
Shareholders assets/liabilities	0.5	0.3	-0.2	-0.3	-0.3	0.0	0.2	-0.4	-0.6	-0.1	-0.6	-0.5
Interests paid and similar expenses	-0.8	-0.8	0.0	-1.2	-1.1	0.1	-0.6	-0.6	0.0	-1.0	-0.9	0.1

Source: Informação Empresarial Simplificada. | Notes: The cash amount and flows are presented as a percentage of the average assets from 2018 to 2020. All values are calculated at the firm level and then an assets weighted average is calculated.

Chart 7 • Relationship between the change in investment and the change in the cash flow from operating activities | Percentage of assets



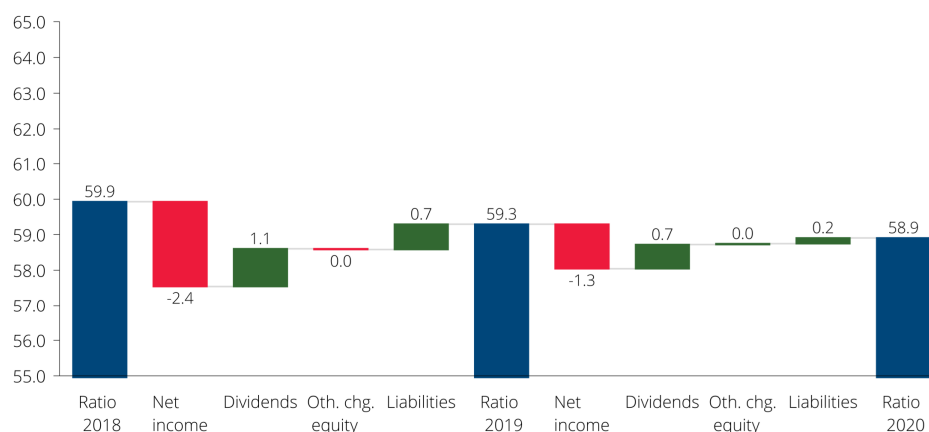
Source: Informação Empresarial Simplificada. | Notes: This type of graph (binscatter) groups the observations of the abscissa axis into different groups with the same number of elements and then the average of the variable of the ordinate axis is calculated. The binscatter is not asset weighted.

The evolution of firms' leverage in 2020

The leverage ratio is measured as the ratio between firms' total liabilities and assets, where assets can be calculated as the sum of equity and liabilities. This ratio is one of the key solvency indicators of firms. In order to understand its development, its change was broken down into different contributions: net income, dividends and other changes in equity and liabilities (Chart 8). Positive (negative) contributions indicate an increase (decrease) in the leverage ratio.

In 2020, notwithstanding the slowdown in economic activity caused by the pandemic, Portuguese firms continued their deleveraging process, albeit at a lower pace. This slowdown was due to a reduction in net income contribution, which was only partially mitigated by a cut in dividends paid and a smaller increase in liabilities.

Chart 8 • Annual change in the leverage ratio and contributions | In percentage points



Notes: The blue bars represent the leverage ratio at the end of the year. The green bars are positive contributions (increase in leverage) and the red bars are negative contributions (decreases in leverage). Results are aggregated through an asset weighted average. Contributions were estimated on the basis of the first and second order terms of the second-order Taylor series expansion of the leverage ratio.

Table 7 breaks down the change in the leverage ratio in detail by (i) size, (ii) exposure of the sector of activity to the pandemic crisis and (iii) access to State support (credit moratoria and government-backed credit lines).

Table 7 • Decomposition of the leverage ratio change | Percentage of assets

	Leverage ratio 2018	Net income	Dividends	Other changes in equity	Liabilities	Leverage ratio 2019	Net income	Dividends	Other changes in equity	Liabilities	Leverage ratio 2020
Size											
Micro	53.8	-2.0	0.0	-0.1	1.0	52.7	-1.2	0.0	-0.1	0.7	52.2
Small	57.7	-2.3	0.7	-0.1	0.9	56.9	-1.3	0.3	-0.1	0.4	56.2
Medium	61.2	-2.8	1.2	0.1	0.3	59.9	-2.0	1.3	0.2	0.2	59.7
Large	64.9	-2.4	2.1	0.1	0.8	65.4	-0.6	1.0	0.0	-0.3	65.6
Sectors											
Least affected	58.9	-2.4	1.1	0.0	0.6	58.2	-1.8	0.8	0.0	-0.1	57.2
Most affected	65.5	-2.4	1.0	-0.2	1.2	65.0	1.9	-0.2	0.0	1.1	67.8
Support policies											
Firms that have not resorted to credit moratoria neither to State-guaranteed credit lines	58.4	-2.6	1.3	0.0	0.6	57.7	-1.5	1.0	0.0	-0.3	56.9
Firms that have resorted only to credit moratoria	65.2	-1.2	0.3	0.2	0.7	65.2	-0.6	-0.6	0.4	-0.1	64.3
Firms that have resorted only to State-guaranteed credit lines	58.0	-3.1	0.7	-0.1	1.1	56.6	-1.5	0.5	-0.1	2.6	58.1
Firms that have resorted both to credit moratoria and State-guaranteed credit lines	65.7	-1.7	0.4	-0.1	1.3	65.5	-0.2	0.2	-0.1	1.6	67.1

Source: Informação Empresarial Simplificada. | Notes: The firm's classification follows the criteria of the European Commission Recommendation of 6 May 2003 on the definition of micro, small and medium-sized companies (2003/361/EC). The sectors most affected by the pandemic are essentially retail trade and vehicles repair, accommodation and food services, air transport and storage, arts, entertainment and recreation activities. Results are aggregated through an asset weighted average. Contributions were estimated on the basis of the first and second order terms of the second-order Taylor series expansion of the leverage ratio.

Large firms have slightly raised their leverage, while micro, small and medium-sized firms have reduced it. Table 7 shows that these developments are the result of different dynamics in the contributions of capital and liabilities. Larger firms have reduced the amount of their liabilities. However, as they distributed more dividends than the net income for the current period, their leverage increased. A firm-level analysis shows that a high number of large firms distributed dividends above the 2020 net income (38% weighted by assets and 41% unweighted), which should be related to the fact that the dividend is typically set on based on the previous year's results. In the opposite direction, smaller firms slightly increased liabilities and kept dividend payments below net income for the year, allowing them to continue deleveraging.

Firms in the most affected sectors, which on average had a higher than average leverage ratio in 2019, experienced a significant increase in their leverage, resulting from a rise in liabilities and negative net income. These effects were partially mitigated by a negative contribution from dividends (increase in shareholders' capital). In the opposite direction, firms in the least affected sectors slightly reduced their leverage, mainly through positive results and a slight decline in liabilities.

The leverage ratio increased for firms that have only resorted to the credit lines or both support measures and decreased for the remaining firms. This increase in the leverage ratio is mainly explained by the increase in liabilities, as these firms had higher net income than the dividends paid. The increase in liabilities was more significant in firms that had access to government-backed credit lines, which are, however, less leveraged than the average of firms in the economy. These firms also had higher than average profitability in 2019.

Conclusion

In 2020 there was a significant decrease in Portuguese firms' revenues. The magnitude of the reduction was uneven by sector of activity, reflecting the restrictions placed by the pandemic on the economic activity of some sectors. Despite the drop in revenues, Portuguese firms increased liquidity and reduced leverage. The drop in leverage resulted from firms in the least affected sectors. Firms in the most affected sectors adjusted by cutting operating costs, investment and dividend distribution and by increasing their debt. In the case of least affected sectors, investment fell mainly in large firms. Public support measures, such as moratoria and guaranteed credit lines, made the access to financing easier, which may have contributed to avoid a more abrupt investment adjustment and short-term financial problems with potential consequences for the maintenance of the firm's activity and for the banking system. However, in the case of firms in the most affected sectors, the increase in debt contributed to an increase in the leverage ratio. This reinforces the need for these firms to resume the deleveraging process in progress before the pandemic, to avoid that measures taken merely contribute to postponing insolvencies. This is a minor problem for firms that had access to government-backed credit lines, as these firms have on average a lower than average leverage ratio and higher pre-crisis profitability.

References

- Altavilla, C., Ellul, A., Pagano, M., Polo, A., & Vlassopoulos, T. (2021). "Loan guarantees, bank lending and credit risk reallocation". *Center for Financial Studies Working Paper*, (672).
- Cros, M, A Epaulard and P Martin (2021), "Will Schumpeter Catch Covid-19?", *CEPR Discussion Paper 15834*.
- Demmou, L. and Franco, G. (2021), "From hibernation to reallocation: Loan guarantees and their implications for post-COVID-19 productivity", *OECD Economics Department Working Papers*, No. 1687, OECD Publishing, Paris
- Kozeniauskas, N., Moreira, P., & Santos, C. (2022). "On the cleansing effect of recessions and government policy: Evidence from Covid-19". *European Economic Review*, 104097.

III Series

Quarterly series for the Portuguese
economy: 1977-2021

Annual series on household
wealth: 1980-2021

Quarterly series for the Portuguese economy: 1977-2021

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

The update released in this Bulletin maintains the same breakdown as previously and includes, for the first time, quarterly figures for 2021. The data is consistent with the latest version of the Quarterly National Sector Accounts published by Statistics Portugal on 25 March 2022 and mainly follows the methodological procedures described in detail in Cardoso and Sequeira (2015).¹

The quarterly series were revised to incorporate the [Long time series for the Portuguese economy](#) (SLEP 2020), published by Statistics Portugal and Banco de Portugal in December 2021,² a change mainly impacting the period prior to 1995. In annual terms, the series on expenditure correspond exactly to SLEP 2020. As for the disposable income block, level differences result from taking into account non-profit institutions serving households (SLEP 2020 only include information for households). The labour market block shows small discrepancies associated with differences in estimates used for the population in the Labour Force Survey and SLEP 2020.

In quarterly terms, the published series for GDP and the main expenditure components match the data released by Statistics Portugal for the period from 1995 onwards. As of this publication, the household disposable income series for the period from the first quarter of 1999 onwards also match those published by Statistics Portugal (Quarterly National Sector Accounts), adjusted for seasonal and calendar effects.

In the labour market block, series are grouped according to two different measures: full-time equivalent (FTE, National Accounts concept) and thousands of individuals (Labour Force Survey concept). The FTE employment series correspond, in annual terms, to those released by Statistics Portugal since 1995. The series measured in thousands of individuals and the unemployment rate series only differ from those currently published by Statistics Portugal due to seasonal adjustments.³

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

These series for the 1977-2021 period are available in electronic format on the Banco de Portugal's webpage for this *Economic Bulletin* and on *BPstat* | Statistics Online under the domains [National accounts](#) and [Population and labour market](#).

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

2. In the previous version, the series used the annual historical series of the Banco de Portugal – Pinheiro et al. (1999), *Séries longas para a economia portuguesa pós II Guerra Mundial*, Vol. I – Statistical series, revised and enlarged version for 1994 and 1995 (in Portuguese only), Banco de Portugal – as a reference for the growth rates for the period prior to 1995.

3. The quarterly long series are consistent with the new series of the Labour Force Survey released from 2021 onwards. For further details, see the [Note](#) published by Statistics Portugal.

Annual series on household wealth: 1980-2021

The annual series on household wealth, for the period 1980-2021, correspond to an update of the estimates published in the *Economic Bulletin* of May last year. These wealth estimates, published annually,¹ include the financial component (assets and liabilities) and housing (the main component of non-financial wealth). The concepts and methodology are identical to those described in Cardoso, F., Farinha, L. and Lameira, R. (2008).²

The financial series (assets and liabilities) presented here are consistent with the latest version of national financial accounts published by the Banco de Portugal, which are available for the 1994-2021 period. The financial series for the period before 1994 were estimated using the implicit rates of change in the previous wealth series and obtained in accordance with the methodology described in detail in Cardoso and Cunha (2005).

For the period from 2000 to 2019, the housing wealth series uses as a reference the households' housing capital stock estimates provided by Statistics Portugal.³ This series was extended to the 1980-1999 and 2020-2021 periods. For the period before 2000, the series was obtained by retrospectively matching the rates of change in the total housing capital stock, which is part of the [Long time series for the Portuguese economy](#) (SLEP 2020) published by Statistics Portugal and Banco de Portugal in December 2021. For 2020 and 2021, the series has been estimated respecting the growth rate of an indicator for the housing capital stock based on a methodology similar to that used in calculating the capital stock series of SLEP 2020. The calculation of the capital stock series is based on the perpetual inventory method, which consists of successively accumulating fixed capital investment (in this case, housing investment), assuming hypotheses for its service life and its survival and depreciation method.⁴ Data in current prices for 2020 and 2021 were obtained using as stock deflator an estimate based on the House Price Index published by Statistics Portugal.

The capital stock estimates made available by Statistics Portugal do not include the value of land underlying dwellings, which is included in the wealth series published here. The value of that land was estimated based on the ratio set for tax purposes (namely, regarding housing evaluations for the municipal property tax), which corresponds to 25% of the housing overall value.

1. The series are only available in electronic format on Banco de Portugal's webpage for this *Economic Bulletin*.
2. Cardoso, F., Farinha, L. and Lameira, R. (2008), "Household wealth in Portugal: revised series", *Occasional Paper* No. 1, Banco de Portugal. This publication corresponds to the revised series previously published in Cardoso, F. and Cunha, V. (2005), "Household wealth in Portugal: 1980-2004", *Working Paper* No. 4, Banco de Portugal, where the calculation methodology is described in more detail.
3. Statistics Portugal published the capital stock accounts in November 2017 for the first time, available on the National Accounts area of its website. For further details, see: Statistics Portugal (2017), "Capital stock (Base 2011) 2000-2015", Press release of 24 November 2017.
4. For more details on the methodology for calculating the capital stock series of SLEP 2020 see [Long Times Series for the Portuguese Economy](#) (2021), Statistics Portugal and Banco de Portugal (methodology in Portuguese only).

