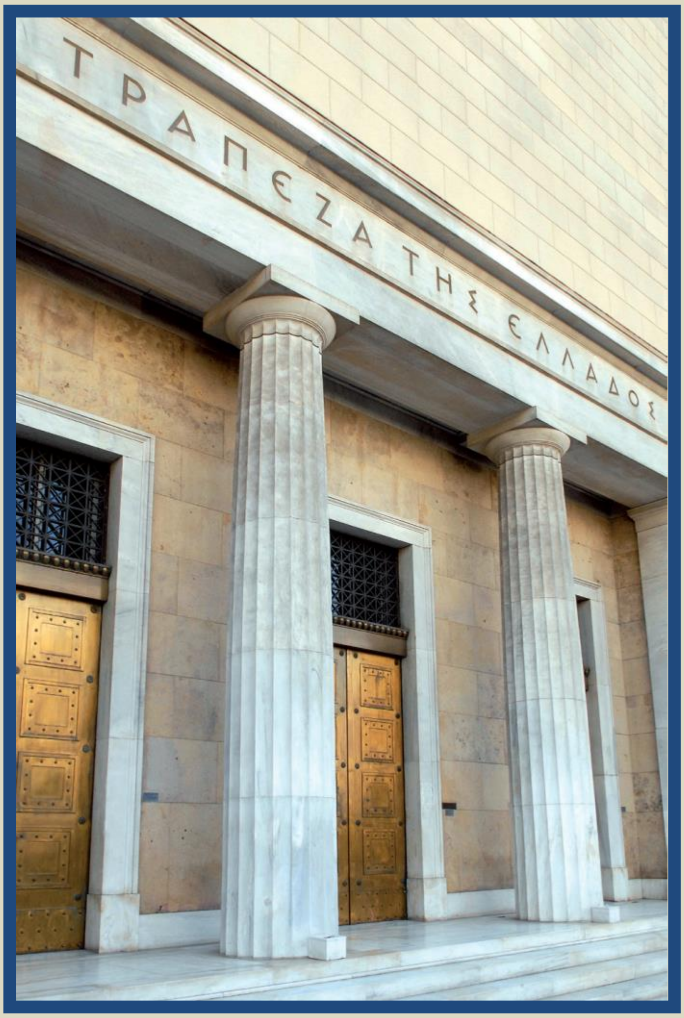
FINANCIAL STABILITY REVIEW



October
2024

BANK OF GREECE
EUROSYSTEM

FINANCIAL STABILITY REVIEW

October
2024

BANK OF GREECE
EUROSYSTEM

BANK OF GREECE

21, El. Venizelos Street

GR - 102 50 Athens

www.bankofgreece.gr

Financial Stability Department

Tel. **+30 210 320 5111**

Fax **+30 210 320 5419**

ISSN 2944-9065 (online)

DOI: https://doi.org/10.52903/finsta.en202410

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

The macroeconomic environment and geopolitical risks affect financial stability. In 2024, steady disinflation in the euro area and the economic recovery, albeit weaker than anticipated, led to a moderation of risks. Nevertheless, the current high valuations in money and capital markets accentuate the risk of a sharp repricing of assets. The interconnectedness of the government, corporate and financial sectors at international level is also a source of concern. The short-lived financial turmoil in August 2024 that was triggered mainly by the Japanese central bank's decision to increase its policy rates[1] brought to the fore this risk and highlighted the growing importance of the non-bank financial sector. Moreover, geopolitical risks from Russia's invasion of Ukraine, compounded by the recent conflicts in the Middle East, could weigh heavily on global economic growth and push up energy prices, implying an exogenous risk factor for the banking sector.

In the first half of 2024, the Greek economy maintained its growth momentum. Real gross domestic product (GDP) growth in Greece stood at 2.2% in the first half of 2024, mainly driven by consumption, while the external sector of the economy as a whole contributed negatively. The labour market also continued to improve further, with the unemployment rate falling to 10.9% in the first half of 2024 (from 11.5% in the first half of 2023).[2] Inflation, measured by the Harmonised Index of Consumer Prices (HICP), gradually declined, standing at 3.0% in January-September 2024, against 4.4% in the corresponding period of 2023. However, HICP excluding energy rose at a faster pace, reflecting upward pressures on food prices, as well as on the prices of non-energy industrial goods and services, thus affecting business operating costs and household disposable income. Tax revenue overperformance in January-August 2024 was a positive development, with the general government primary balance estimated at a surplus of 3% of GDP, up from 2,4% of GDP in 2023.

In the first half of 2024, the key fundamentals of the Greek banking sector remained at a satisfactory level. Bank profitability improved further, bank liquidity remained high, while capital adequacy was almost unchanged. Against this background, banks distributed dividends for the first time in fifteen years,[3] nevertheless implementing a prudent dividend policy. Moreover, throughout 2024, banks' credit rating upgrades by international rating agencies continued,[4] as did the disinvestment of the Hellenic Financial Stability Fund (HFSF) from the Greek significant institutions.[5]

---

[1] The announcement of weaker than anticipated employment and manufacturing figures for the US also contributed to this turmoil.

[2] The seasonally adjusted unemployment rate in August 2024 stood at 9.5%, against an upward revised 11.4% in August 2023 and 9.9% in July 2024 (Hellenic Statistical Authority).

[3] It should be noted that since 2014, when the Single Supervisory Mechanism (SSM) was launched, a dividend ban had been imposed on Greek banks.

[4] On 4 September 2024, S&P Global Ratings upgraded the long-term rating of Alpha Bank from BB to BB+, with stable outlook, while on 6 September, Fitch Ratings upgraded by one notch the Long-Term Issuer Default Rating of all four Greek significant institutions.

[5] Since October 2023, the Hellenic Financial Stability Fund has fully disinvested from Piraeus Bank, Alpha Bank and Eurobank, while maintaining an 8.39% stake in the capital of National Bank of Greece and a 72.54% stake in Attica Bank.

The liquidity of the Greek banking sector remained at a high level. The balance of residents' deposits in Greece in August 2024 amounted to EUR 201.9 billion, marginally up from December 2023, with liquidity ratios remaining above prudential requirements. Specifically, the Liquidity Coverage Ratio (LCR) stood at 209.3% in June 2024, from 220.7% in December 2023; the Net Stable Funding Ratio (NSFR) was 133.8% in June 2024, from 135.2% in December 2023; and the Asset Encumbrance Ratio improved significantly, dropping to 8.5% in June 2024, from 13.2% in December 2023. In anticipation of the 2025 deadline, Greek banks have implemented measures to ensure compliance with the Minimum Requirements for Own Funds and Eligible Liabilities (MREL). In January-September 2024, the Greek significant institutions issued senior preferred bonds of a nominal value of EUR 3,750 million, subordinated bonds of a nominal value of EUR 2,450 million and Additional Tier 1 instruments of a nominal value of EUR 300 million.

The quality of credit institutions' loan portfolios deteriorated marginally due to a one-off adjustment. Specifically, the total stock of non-performing loans (NPLs) reached EUR 10.4 billion in June 2024, up by 4.8% or EUR 476 million from December 2023, according to on-balance-sheet data on a solo basis.[6] This was mainly due to the inclusion within the NPL perimeter – pursuant to a supervisory requirement – of certain government-guaranteed loans. The ratio of NPLs to total loans in June 2024 rose marginally to 6.9%, from 6.7% in December 2023, as credit expansion mitigated the negative effect from the increase in NPLs. Thus, the system-wide NPL ratio remains high and a multiple of the European average (June 2024: 2.3%[7]) and efforts to reduce the legacy NPL stock must continue. In addition, the less significant institutions NPLs ratio remains particularly high, standing at 36.4% in June 2024. It should be noted that, by the end of 2024, this ratio is expected to drop substantially for the less significant institutions thanks to the inclusion in the "Hercules" government guarantee scheme of NPLs from the new entity created following the merger between Attica Bank and Pancreta Bank.

Greek banking groups' core profitability improved significantly. In the first half of 2024, Greek banks' profits after tax and discontinued operations amounted to EUR 2.3 billion, compared with profits of EUR 1.9 billion in the first half of 2023. Underlying this development were most importantly an increase in net interest income as a result of high key European Central Bank (ECB) interest rates and a decrease in loan-loss provisions. In detail, in the first half of 2024, the operating income of Greek banking groups increased by 10.8% compared to the first half of 2023. Net interest income grew by 11.4%, benefiting from the ECB's key interest rate hikes from July 2022 until September 2023, as the biggest part of the loan portfolio carries variable interest rates. In the same vein, net fee and commission income increased by 15.9%, supported by fees from payment transactions and asset management. As a result, core operating income (i.e. net interest income and net fee and commission income) grew by 12.2%. Gains from financial transactions also grew in the first half of 2024, thanks to gains from transactions in Greek government bonds and derivatives and hedging products. By contrast, other operating results dropped, burdened by

[6] On a consolidated basis, the stock of NPLs stood at EUR 10.6 billion, up by 4.3% or EUR 0.4 billion, from EUR 10.2 billion at the end of 2023.

[7] Source: Single Supervisory Mechanism (SSM).

one-off expenses in the first half of 2024. The cost of credit risk[8] declined significantly in the first half of 2024 to 0.7% of net loans. As a result, Greek banking groups posted profit after tax and discontinued operations, and the Return on Assets (RoA) and Return on Equity (RoE) ratios came to 1.5% and 13.8%, respectively.

The capital adequacy of the banking sector remained almost unchanged in the first half of 2024, as a rise in prudential own funds was offset by an increase in risk-weighted assets. In particular, the Common Equity Tier 1 (CET1) ratio on a consolidated basis fell marginally to 15.4% in June 2024, from 15.5% in December 2023, and the Total Capital Ratio (TCR) remained unchanged at 18.8%. These indicators are below the EU average (CET1: 15.8% and TCR: 19.9% in June 2024).[9] Moreover, the quality of Greek banks' prudential own funds remains low: in June 2024, Deferred Tax Credits (DTCs) amounted to EUR 12.5 billion, representing 41% of total prudential own funds (against 44% in December 2023) and 50% of CET1 capital (against 53% in December 2023).

***

In the current macroeconomic and financial environment, implementing an appropriate macroprudential policy to avoid the build-up of systemic risks and to enhance the resilience of the banking sector is all the more important. The Bank of Greece conducts a quarterly assessment of the intensity of cyclical systemic risks and the appropriateness of the Countercyclical Capital Buffer (CCyB) rate for Greece and sets or adjusts it, if necessary. The analysis of the additional indicators examined by the Bank of Greece confirms that overall, there is no excessive credit growth, however it points to emerging cyclical systemic risks in certain areas, such as credit to non-financial corporations, residential real estate prices and the current account. Furthermore, the stable macroeconomic environment, Greece’s upgrade to investment grade and the banking sector’s improved fundamentals and prudential indicators establish favourable conditions for creating adequate macroprudential space to safeguard financial stability over the medium term. In this context, by Executive Committee Act (ECA) 235/1/07.10.2024, the Bank of Greece introduced a positive neutral rate of the countercyclical capital buffer (PNR CCyB), which is activated in a standard risk environment, i.e. when cyclical systemic risks are neither subdued nor elevated. It thus allows institutions to absorb potential losses and maintain a smooth flow of credit to the real economy in the event of adverse shocks. Moreover, the target PNR CCyB for Greece has been set at 0.5%. In light of the above, the Bank of Greece set the countercyclical capital buffer rate for Greece at 0.25%, applicable from 1 October 2025.

In addition, the Bank of Greece identified Other Systemically Important Institutions (O-SIIs) in Greece for the year 2024, applying the relevant European Banking Authority (EBA) guidelines, and set the O-SII buffer rate for 2025 at 1.25% for Eurobank Ergasias Services and Holdings S.A. on a consolidated basis and at 1.00% for all other O-SIIs.

[8] Cost of credit risk is the ratio of credit risk provisions over loans after accumulated provisions.
[9] Source: Single Supervisory Mechanism (SSM).

Finally, the Bank of Greece has enacted macroprudential borrower-based measures (BBMs) for loans and other credit to natural persons secured by residential real estate located in Greece, effective as of 1 January 2025. In more detail, ECA 227/1/08.03.2024 introduced a cap on the loan-to-value ratio at origination (LTV-O) of 90% for first-time buyers and 80% for second and subsequent borrowers, as well as a cap on the debt service-to-income ratio at origination (DSTI-O) of 50% for first-time buyers and 40% for second and subsequent borrowers. Up to 10% of the total number of new loans and other credit can be exempted from the above LTV-O and DSTI-O caps.

***

For the first half of 2024, the Greek insurance market, despite challenges associated with the international macroeconomic and financial environment and climate change, maintained its capital adequacy almost at the same level as at end-2023. Insurance undertakings continued their efforts to address both existing and emerging risks, adapting their business models and reviewing, where necessary, their pricing and investment policies. This adaptation strategy testifies to the flexibility and resilience of the Greek insurance market in a constantly changing environment.

The smooth operation of financial market infrastructures, i.e. payment, clearing and settlement systems, contributed positively to the stability of the domestic financial system through the efficient processing of transactions. As regards the electronic means of payment used, in the first half of 2024 both the volume and value of credit transfers and direct debits maintained their upward trend, while no significant changes were observed to card payment transactions. The fraud-to-transaction ratios in terms of number and value of fraud incidents decreased as regards to card payment transactions and significantly decreased for credit transfers.

In June 2024, the total value of exposures[10] under management by Credit Servicing Firms (CSFs) amounted to EUR 86.3 billion, of which 81% relates to exposures managed by CSFs on behalf of Credit Purchasers[11] and the remaining 19% concerns the management of exposures on behalf of credit institutions. The portfolio of exposures under management in June 2024 consisted mainly of NPLs (83%) and, to a lesser extent, performing exposures (17%).

According to the revised framework (Law 5072/2023) on credit servicers and credit purchasers, CSFs authorised under Article 1 of Law 4354/2015 (Government Gazette A 176)[12] needed to be assessed by the Bank of Greece for compliance with the provisions of the new framework before being re-authorised. The Bank of Greece has authorised until now 14 CSFs, extended the licenses of 4 existing CSFs until the end of 2024, and withdrew 5 licenses after their holders had voluntarily relinquished them.

[10] Exposures include all debt instruments (loans and advances and debt securities), excluding off-balance-sheet exposures and write-offs. It should be noted that Bank of Greece Executive Committee Act 206/1/03.06.2022 (available only in Greek) modified, inter alia, supervisory data and information to be submitted by CSFs to the Bank of Greece.

[11] Any discrepancies between the supervisory data analysed in this section of the Financial Stability Review and the data regularly published by the Bank of Greece on its website are mainly due to the different perimeter of each data release.

[12] The Bank of Greece had authorised a total of 26 CSFs, of which 3 had ceased operations before the launch of the re-authorisation process.

The business of Payment Institutions (PIs) and Electronic Money Institutions (EMIs) grew in 2024. The total value of payment transactions carried out by PIs in the 2024 reference period (from 01.07.2023 to 30.06.2024) amounted to EUR 60.5 billion, up by 4% against 2023[13] (EUR 58.2 billion). In the same vein, the total annual value of payment transactions carried out by EMIs stood at EUR 29.7 billion, up by 11% compared to 2023 (EUR 26.8 billion). These developments had a positive impact on the own funds and profitability of PIs and EMIs.

***

The outlook for the Greek economy is positive. According to the Bank of Greece's most recent estimates,[14] real GDP growth is projected to stand at 2.2% in 2024 (from 2.3% in 2023) and accelerate to 2.5% in 2025. The utilisation of funds under the Recovery and Resilience Facility is expected to help achieve sustainable growth rates for real GDP and total factor productivity. Higher investment is a prerequisite for accelerating economic growth. Strengthening the banks' intermediation function would also help in this direction.

The outlook for the banking sector is inevitably linked to Greece's macroeconomic trajectory, which is in turn also affected by international developments. A deterioration in international financial conditions could have adverse effects both on the global financial system and on the financial situation of firms and households at the domestic level. Moreover, on the single monetary policy front, as the ECB gradually cuts its key interest rates, banks' core profitability may be negatively affected, especially if they fail to meet their credit growth targets. At the same time, a definitive resolution of the remaining NPL stocks and a convergence of the NPL ratio to the European average remain a challenge, as well as addressing climate change and cyber attack risks. It should be noted that the latter risk is closely associated with geopolitical tensions and, therefore, effectively tackling it calls for international cooperation and further investigation of financial system interconnections.

Safeguarding financial stability also largely depends on promoting reforms at European Union (EU) level. Heightened geopolitical risks due to the proliferation of armed conflicts, as well as political developments associated with the upcoming presidential election in the United States exacerbate uncertainty. Thus, in an environment of intensifying exogenous factors, with strong interconnections and rapid transmission of risks, it is now evident that promoting reforms with the aim to remove inherent weaknesses at EU level is a priority. The set-up of a common European Deposit Insurance Scheme (EDIS) at Banking Union level is deemed necessary to strengthen depositors' confidence, especially in case of cross-border turmoil and systemic crisis. The introduction of a common framework for Crisis Management and Deposit Insurance (CMDI) should facilitate the integration of the currently fragmented banking sector in the EU. In this context, the implementation of the policy proposals outlined in the Draghi Report[15] is expected to help resolve competitiveness issues facing the EU on the one hand, and on the other hand, ensure a level playing field for all European banks, as they would all be subject to a single regulatory and

---

[13] Reference period: 01.01.2023-31.12.2023.

[14] These estimates have not taken into account the second estimate of the Annual National Accounts for the year 2023 and the revised figures for the years 1995-2022, which were announced by the Hellenic Statistical Authority on 17.10.2024.

[15] Draghi Report September 2024.

resolution framework.[16] However, the positive impact from the proposed actions depends on the extent to which they will be implemented. Lastly, in the context of bolstering the competitiveness of euro area banks, cross-border initiatives[17] aiming at bank consolidation and the creation of entities with critical size on a global scale are assessed positively.

[16] The Draghi proposals aim at improving the functioning, productivity and competitiveness of the EU as a whole, rather than of a specific group of countries or of individual sectors.
[17] An indicative example is the acquisition by Italy's UniCredit of a significant equity stake in Germany's Commerzbank.

II. MACROECONOMIC ENVIRONMENT, MONEY AND CAPITAL MARKETS

1. ECONOMIC ACTIVITY: DEVELOPMENTS AND PROSPECTS

The Greek economy continued to grow during the first half of 2024 at rates significantly higher than in the euro area, mainly on the back of stronger private consumption. Fixed investment, especially related to machinery and transport equipment, also provided additional momentum. Exports of goods rebounded in the second quarter, but the external sector of the economy as a whole contributed negatively due to the strong growth of imports. Public consumption had a negative contribution for a second consecutive quarter. On the supply side, services and industry had a positive contribution, whereas construction and the primary sector contributed negatively. Business expectations remained high in the first semester of 2024 as well, unlike consumer confidence, which remained low. The Purchasing Managers' Index (PMI) still points to growth of Greek manufacturing output, in line with the high growth rates recorded by the Industrial Production Index of the Hellenic Statistical Authority (ELSTAT) for January-July 2024.

In more detail, gross domestic product (GDP) grew by 2.2% year-on-year in the first half of 2024, mainly due to an increase in final demand, since net exports had a negative contribution. Private consumption rose at a higher pace in the first half of 2024 (2.0%, up from 1.5% in the first half of 2023), due to the substantial recovery of retail sales. Private demand was partly supported by

Table II.1 GDP and its main components (2020 – Q2 2024)

(Annual percentage changes, annual data: constant market prices of 2020, quarterly data: constant market prices of 2015)

	2020	2021	2022	2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Private consumption	-6.2	5.1	8.6	1.8	1.3	2.1	2.1	2.0
Public consumption	3.0	1.8	0.1	2.6	-1.1	1.4	-5.1	-3.6
Gross fixed capital formation	1.7	21.7	16.4	6.6	5.1	-5.5	3.1	3.9
Residential investment	19.0	31.8	57.8	24.7	27.5	-18.8	-13.9	-7.1
Other construction	-4.7	18.4	8.3	10.2	4.6	13.2	9.4	0.7
Equipment	-0.3	23.8	16.1	1.7	15.4	-11.2	7.5	15.5
Domestic demand	**-3.6**	**7.2**	**7.6**	**1.8**	**1.3**	**0.9**	**0.8**	**1.2**
Exports of goods and services	-21.5	24.4	6.6	1.9	2.7	2.6	-3.7	2.1
Exports of goods	4.2	14.4	4.1	0.1	1.6	-1.0	-8.6	2.0
Exports of services	-42.8	37.6	9.4	3.9	4.6	5.2	2.4	2.8
Imports of goods and services	-7.3	17.4	11.0	0.9	4.1	0.0	3.1	9.6
Imports of goods	-4.0	16.6	13.2	-0.3	5.1	1.6	2.6	10.5
Imports of services	-18.9	20.3	2.6	5.8	0.5	-4.0	4.4	6.9
Real GDP at market prices	**-9.2**	**8.7**	**5.7**	**2.3**	**2.1**	**1.3**	**2.1**	**2.3**

Sources: Hellenic Statistical Authority (ELSTAT) and Bank of Greece
Annual data: non-seasonally adjusted. Quarterly data: seasonally adjusted.

an increase in disposable income, as the nominal disposable income of households and non-profit institutions serving households (NPISHs) rose by 1.1% in the first quarter of 2024, while income from dependent employment posted stronger growth (by 2.7%). By contrast, public consumption declined significantly by -4.4%.

Investment continued to grow in the first half of 2024, outpacing economic activity. More specifically, gross fixed capital formation increased by 3.5% in the first half of 2024, compared with 8.8% in the same period of 2023. This slowdown is attributable to lower residential investment, which decreased by -10.5% in the first half of 2024, compared with an increase of 47.1% in the same period of 2023. By contrast, investment in "machinery and weapon systems" increased by 11.9% and in "transport equipment" by 10.6%. Finally, investment in "other construction" rose at a lower pace by 4.9%, "information and communication technology equipment" by 0.2% and "other products" by 1.1%.

The contribution of net exports in the first half of 2024 was negative (-3.1%), due to higher imports and lower exports. As regards imports, their rise of 6.4% was due to an increase in imports of both goods and services. On the other hand, a 0.9% decrease in exports is attributed to a decline in exports of goods, as exports of services increased.

On the supply side, the total gross value added increased by 1.4% in the first half of 2024. At the sectoral level, growth was posted in "construction" (7.5%), "professional, scientific and technical services, administrative and support services" (1.1%) and "wholesale and retail trade services, repair services of motor vehicles and motorcycles, transportation and storage, accommodation and food services" (0.7%). Conversely, the primary sector fell significantly by -8.7%, "construction" by -0.9%, "public administration and defence, mandatory social security, education, human health and social work activities" by -0.4% and "arts, entertainment and recreation" by -0.2%.

The current account deficit stood at EUR 8.6 billion in January-July 2024, up from EUR 7.3 billion in the same period in 2023, due to a decline in exports and a simultaneous increase in imports. The surplus of the services balance widened, driven primarily by an improvement in the travel balance and secondarily in the transport balance. The deficit of the primary income account increased year-on-year, mainly due to lower net receipts from other primary income.

The labour market improved further in the first half of 2024. More specifically, total employment rose by 2.0%, dependent employment by 1.4%, while the self-employed increased by 2.6%. The unemployment rate fell to 10.9%, from 11.5% in the first half of 2023. This included a significant improvement for women (13.7%, from 15.0% in the first half of 2023), as well as for youth aged 20-29 years (19.4%, from 21.4% in the first half of 2023). At the same time, the long-term unemployment rate fell to 5.7%, from 6.5% in the first half of 2023.

However, the labour market is tightening, as the job vacancy rate has been increasing steadily over the past 13 quarters, particularly in construction, manufacturing production, trade and tourism. In the first half of 2024, compensation per employee increased by 5.2%, compared with 5.4% in the same period of 2023, but has not caused any severe deterioration in the competitiveness of the Greek economy, as unit labour costs were slightly lower than the euro area average. In the same vein, the Labour Cost Index increased by 8.1%, largely reflecting the 6.4% raise in the minimum wage implemented in April 2024.

Inflation, measured by the Harmonised Index of Consumer Prices (HICP), gradually decelerated, but remained relatively high at 3.0% in January-September 2024, against 4.4% in the corresponding period of 2023. Nevertheless, HICP excluding energy recorded high rates of increase. This reflects upward pressures on food prices, as well as on the prices of industrial goods and services.

According to the latest projections of the Bank of Greece,[18] the real GDP growth rate is expected to reach 2.2% in 2024 and 2.5% in 2025. Inflation is projected at 2.9% in 2024 and at 2.2% in 2025. Risks to the growth forecasts of the Bank of Greece are tilted to the downside and concern: (i) a deterioration of the euro area growth rate, compounded by the geopolitical crises in Ukraine and the Middle East, and the ensuing implications for the global economic environment; (ii) the recent increase in electricity prices, which will feed into inflation; (iii) a lower-than-expected implementation rate of NextGenerationEU actions; and (iv) potential delays in implementing reforms.

[18] These estimates have not taken into account the second estimate of the Annual National Accounts for the year 2023 and the revised figures for the years 1995-2022, which were announced by the Hellenic Statistical Authority on 17.10.2024.

2. FISCAL DEVELOPMENTS

In January-August 2024, tax revenue overshot the targets of both the Budget and the Stability Programme 2024, mainly due to improvements in incomes and business profitability, employment and tax compliance and, to a lesser extent, higher inflation.

The overperformance of tax revenue that has been consistently recorded in recent years strongly suggests that the effort to reduce tax evasion is paying off handsomely. Recent reforms on the tax evasion front, which resulted in improved tax compliance and a significant increase in tax revenue, mainly include the new way of imputing self-employed income, the interconnection of cash registers with POS, as well as the automation and digitalisation of business transactions and financial data recording and control by the Independent Authority of Public Revenue (IAPR) through the myData platform.

In July, the taxation of refineries' windfall profits was extended for 2024. This is expected to further contribute to the overperformance of tax revenue in 2024 and create more fiscal space. As a result, in September it was announced that low-income pensioners, disabled benefit recipients and uninsured elderly people would receive special financial assistance of EUR 200 in December, and a supplementary public investment budget of EUR 900 million was approved for 2024.

The aforementioned developments were incorporated into the forecasts of the Medium-Term Fiscal-Structural Plan (MTFSP) 2025-2028, which were published in September and prepared for the first time under the revised fiscal stability framework. The MTFSP is submitted by all the Member States of the European Union (EU) and constitutes a single fiscal and structural policies plan. It has been designed as a medium-term plan over a four-year horizon (extendable to 7 years) and its main objective is to ensure that the public debt-to-GDP ratio remains on a downward path. The main rule for monitoring the fiscal path is the expenditure benchmark, which is set by the European Commission. According to this rule, the expenditure ratio, that is nationally financed net primary expenditure,[19] may increase at a rate that does not exceed the set benchmark. This country-specific benchmark is calculated on the basis of a debt sustainability analysis carried out by the European Commission for all countries and acts as an automatic stabiliser (allowing expenditure to rise in recessions and contract in periods of overheating of the economy), thus ensuring countercyclicality.

Specifically for 2024, the annual change in net primary expenditure is set in the MTFSP at 2.6% and sovereign debt is expected to fall to 153.7% of GDP (compared with 161.9% of GDP in 2023). In 2024, the general government primary balance according to ESA is estimated at a surplus of 2.4% of GDP, compared with 1.9% of GDP in 2023, overshooting the forecast (primary surplus of 2.1% of GDP) in the 2024 Stability Programme and the 2024 Budget, despite a downward revised (by 0.3 percentage point) forecast for real GDP growth of 2.2% compared with the Stability Programme.

Over the period 2025-2028, the growth rate of nationally financed net primary expenditure is projected to be above 3% per year (the expenditure ceilings are set at 3.7%, 3.6%, 3.1% and 3.0%

[19] General government public expenditure excluding interest payments, EU-financed expenditure, cyclical unemployment spending and one-off expenditure, and net of discretionary revenue measures.

respectively) and economic activity is projected to grow at a slower pace (by 2.3%, 2.0%, 1.5% and 1.3% respectively). Under these conditions, the budget balance is expected, with a high degree of certainty, to turn out below the 3% of GDP deficit threshold throughout the above period and the public debt-to-GDP ratio is projected to continue its downward path (to 133.4% of GDP in 2028) on the back of primary surpluses (2.5% of GDP in 2025 and 2.4% each year thereafter), as well as the debt-reducing impact of the interest rate-growth differential (‘snowball effect’).

The 2025 projections were specified in the 2025 Draft Budget, which was published on 7 October 2024. The forecast for a primary surplus of 2.5% includes new fiscal measures of EUR 1.1 billion, effective from 2025, including most importantly a one-percentage-point reduction in social security contributions; separate taxation of overtime compensation for National Healthcare System (ESY) doctors; and an across-the-board increase in public sector wages from April 2025, so that the introductory wage is not below the level of the minimum wage. A 3.7% increase in net primary expenditure implies a rise of EUR 3.7 billion and incorporates, among other things, the estimated increase in pension payments based on new retirements and the inflation and GDP rule (around EUR 1 billion); the normal increase in the ordinary expenditure of general government entities based on commitments and inflation (EUR 1 billion); as well as increased physical deliveries of military equipment (estimated at EUR 860 million).

The estimates for 2024, as well as the projections for 2025-2028, are consistent with the fiscal projections of the Bank of Greece. Fiscal policy in 2024 and 2025 is estimated to be marginally expansionary, on the back of increased investment spending through the Recovery and Resilience Facility. Fiscal policy therefore remains broadly consistent with the monetary policy effort to contain inflation, while safeguarding the fiscal stimulus from public investment financed by the Recovery and Resilience Facility to support both the recovery of the economy and the green and digital transitions.

On the structural side, the MTFSP 2025-2028 includes an ambitious reform and investment plan aimed at further increasing potential output and strengthening human capital, as well as improving public administration efficiency. Key policy priorities include increasing citizens' purchasing power and employment; improving the productive and technological capacity of the Greek economy; addressing the challenges posed by demographics, geopolitical developments and the climate crisis; sound public finances; maintaining financial stability; as well as further developing Greek capital markets and improving the business regulatory framework.

In line with the above policy priorities, significant actions have been undertaken, many of which have been incorporated into the National Recovery and Resilience Plan “Greece 2.0”, including achieving higher growth rates; improving competition; effectively using state-owned property; offering stronger support to young families; further curbing tax evasion and cutting red tape; bolstering entrepreneurship; reviewing public expenditure to ensure its more rational allocation; strengthening the health system; and upgrading the education system.

Maintaining fiscal credibility and implementing the reform agenda in a timely fashion, including through the effective use of the resources of the Recovery and Resilience Facility, must be a key government priority over time, with a view to ensuring high and sustainable economic growth and prosperity.

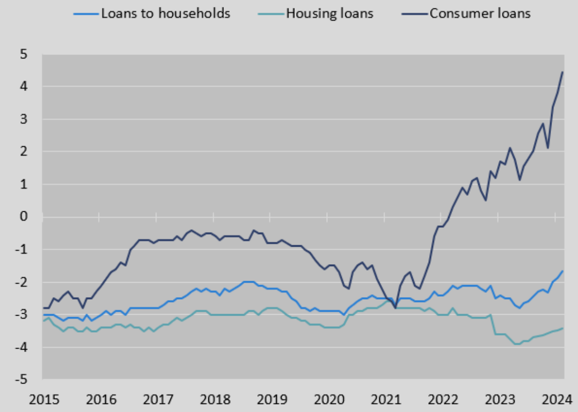
3. FINANCIAL CONDITION OF HOUSEHOLDS

3.1 DEVELOPMENTS IN HOUSEHOLDS' CREDIT AND INDEBTEDNESS

The annual rate of change in household lending[20] by domestic monetary financial institutions (MFIs) remained in negative territory in 2024 (August 2024: -0.7%, see Chart II.1). Specifically, the annual rate of change in housing loans remained negative (August 2024: -2.7%), while the annual rate of change in consumer loans has turned positive since March 2022 (August 2024: 5.8%).

Chart II.1 Financing of households by domestic monetary financial institutions (2015 - August 2024)

(twelve-month rate of change)



Source: Bank of Greece.

Note: The growth rates reflect changes in the balances, which have been adjusted for loan write-offs, securities depreciation, foreign exchange variations and reclassifications.

According to the results of the *Bank Lending Survey*,[21] demand for housing loans declined in the third quarter of 2024, after remaining unchanged in the first half of 2024. On the contrary, credit institutions reported that the demand for consumer and other household loans barely moved in the third quarter of 2024. On the loan supply side, it was reported that the overall terms and conditions for issuing new loans and the credit standards for loans to households had remained unchanged in the third quarter of 2024. In addition, the rejection rate both for housing loans and for consumer and other loans also remained unchanged.

3.2 HOUSEHOLDS' INTEREST RATE RISK

The cumulative increase of 450 basis points in the ECB key interest rates from July 2022 to September 2023 impacted domestic interest rates gradually.[22] The weighted average interest rate on all outstanding loans to households rose by 229 basis points (August 2024: 6.17%, June 2022: 3.88%), having peaked at 6.20% in April 2024 (232 basis points above the June 2022 level), reflecting the tightening of the monetary policy stance in the euro area. This increase was more marked in long-term housing loans, which account for the bulk of housing loans. Expectations for a change in the ECB's monetary policy stance and the recent consecutive cuts in key ECB interest rates (25 basis points in June 2024, 25 basis points in September 2024 and 25 basis points in October 2024) have already started to feed into lending rates. In particular, the weighted average interest rate on the outstanding balances of housing loans with a maturity of over five years decreased by 8 basis points in the period April-August 2024, following an overall increase of 241 basis points compared to June 2022 (August 2024: 4.32%, April 2024: 4.40%, June 2022: 1.99%), while the corresponding interest rate on housing loans with a maturity of over one and up to five years, which make up the bulk of housing loans, remained unchanged in the period April-August 2024, 160 basis points higher than in June 2022 (April-August 2024: 5.46%, June 2022: 3.86%).

---

[20] Including the financing of private non-profit institutions serving households (NPISHs) by domestic monetary financial institutions.

[21] Bank Lending Survey.

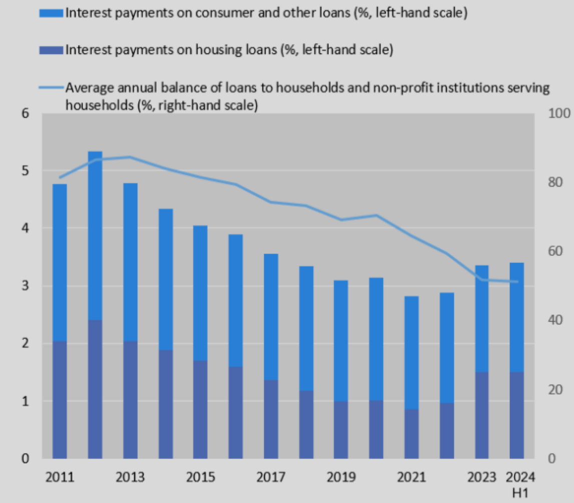
[22] The first increase in the ECB's key interest rate took effect in July 2022, therefore the impact on lending rates is calculated based on their level in June 2022 (i.e. before the first increase in the ECB's key interest rates).

Similarly, the weighted average interest rate on the outstanding balances of consumer and other loans to households decreased by 14 basis points in the period April-August 2024 for loans with a maturity of up to one year, also decreased by 1 basis point for loans with a maturity between one and five years, while for loans with a maturity of over five years it increased by 4 basis points.

Interest payments on housing loans as a percentage of household gross disposable income remained unchanged in the first half of 2024 following a substantial increase observed in 2023 on the back of higher interest rates on existing loans. Interest payments on consumer and other loans as a percentage of household gross disposable income remained almost unchanged both in 2023 and in the first half of 2024 (see Chart II.2). Nonetheless, the average annual balance of loans to households as a percentage of household gross disposable income has further declined due to a decrease in average loan balances and an increase in household average gross disposable income.

Chart II.2 Household debt and interest payments on housing, consumer and other loans as a percentage of gross disposable income (2011 – June 2024)

(% of gross disposable income)



Sources: Bank of Greece calculations and Hellenic Statistical Authority.

Notes:

1. Interest payments are approximated by the product of the weighted average interest rate per category of outstanding performing loans and the average annual balance of household finance per each category.
2. Household finance includes housing, consumer and other loans that are on the balance sheets of domestic credit institutions and credit servicing firms (CSFs) operating in Greece.
3. Household finance also includes the securitised loans which remain on the balance sheets of domestic credit institutions (such as synthetic securitisations).
4. The annualised gross disposable income is derived as the sum of four quarterly income observations. The latest observation for 2024 takes into account the observations from Q2 2023-Q1 2024. It is noted that the income of all households is taken into account whether or not they are in debt.

3.3 HOUSEHOLDS' INCOME RISK

The evolution of households' disposable income is a key determinant of the relative ease of servicing their loan obligations. According to quarterly data from the non-financial accounts of the institutional sectors compiled by the Hellenic Statistical Authority (ELSTAT), household nominal disposable income increased by 1.1% in the first quarter of 2024, while real disposable income decreased by 2.2%, due to inflation. The increase in nominal disposable income over this period is mainly attributed to positive contributions from self-employed income as well as dependent labour income.

Furthermore, in the course of 2024 the labour market continued to improve.[23] In particular, the unemployment rate in August 2024 stood at 9.5%, compared with 11.4% in August 2023. Notable improvements were recorded in the unemployment rate for women (August 2024: 11.6%, August 2023: 15.1%) and for young people under 24 (August 2024: 19.4%, August 2023: 28.3%), although the latter remains elevated.

[23] For more details on developments in the labour market, see Section II Economic activity: developments and prospects.

3.4 HOUSE PRICE RISK

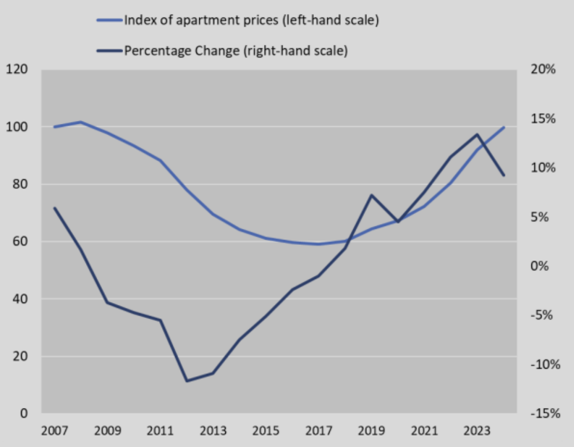
Residential real estate prices continued to increase at a single-digit rate in the second quarter of 2024. Specifically, apartment prices (in nominal terms) rose by 9.2% year-on-year in Q2 2024, albeit at a slower pace than in previous quarters. Prices for newly built apartments (up to five years old) increased at an average annual rate of 10.7% in Q2 2024, while older apartments saw a price rise of 8.3%. A geographical breakdown shows strong price growth rates in major urban centres, notably Athens (9.1%), Thessaloniki (12.1%) and other large cities (7.3%).

The outlook for the Greek real estate market remains moderately positive in the coming period. However, the current environment, characterised by mounting construction costs and elevated interest rates, poses challenges to real estate investment profitability, thereby potentially dampening domestic property market prices, which have been strongly bolstered by foreign investment in recent years. Over the short term, prices are expected to maintain their upward trend, contingent upon continued robust demand from abroad. At the same time, housing affordability has deteriorated in recent years, propelled by the widespread commercial use of residential properties, the effective withdrawal from the market of properties tied-up as collateral for non-performing loans in foreclosure proceedings, and persistently subdued construction activity, which has impeded the smooth replenishment of the housing stock. This raises significant issues that policymakers should factor in when deciding whether to introduce new measures. In this context, initiatives aimed at supporting the renovation of older homes (e.g. the "Upgrading My Home" programme) and increasing housing supply (e.g. the "Social Compensation" programme) are expected to help address these issues by expanding the housing stock. Likewise, initiatives focused on supporting demand from specific social groups (e.g. the "My Home II" programme) by facilitating home-ownership are also expected to have a positive impact.

In addition, real estate prices are still below historical highs. Based on the index of apartment prices compiled by the Bank of Greece for the whole country, the index peaked in the third quarter of 2008 (102.2) and then edged down steadily, reaching a low in the third quarter of 2017 (58.9). Since then, the index of apartment prices has been steadily rising, reaching 99.7 in the second quarter of 2024, which is 2.5 points below its peak (see Chart II.3). It should be noted that the price index for apartments in Athens stood at 105.4 in the second quarter of 2024, having surpassed its previous peak (second quarter of 2008: 101.4).

Chart II.3 Index of apartment prices and annual percentage change

(2007 = 100)



Source: Bank of Greece.

Developments in rental prices follow a similar pattern, with the corresponding index reaching 103.2 in the third quarter of 2024, compared with 98.7 in the third quarter of 2023.[24] In contrast to the apartment price index, the rent price index remains significantly below its peak (124.3 in the third quarter of 2011).

Box II.1 Loans collateralised by residential real estate – Overview of disbursements in the first half of 2024

The Bank of Greece collects quarterly data on loan disbursements collateralised by residential real estate, in accordance with Bank of Greece Executive Committee Act 175/1/2020.[1] For the purposes of this Act, a residential real estate (RRE) loan refers to a loan to a natural person secured by residential real estate, regardless of the purpose of the loan. In this regard, the reporting perimeter includes mortgages, renovation and consumer loans secured by residential real estate, as well as loans to self-employed persons and sole proprietors secured by residential real estate.

The main conclusions for the first half of 2024 are summarised as follows:

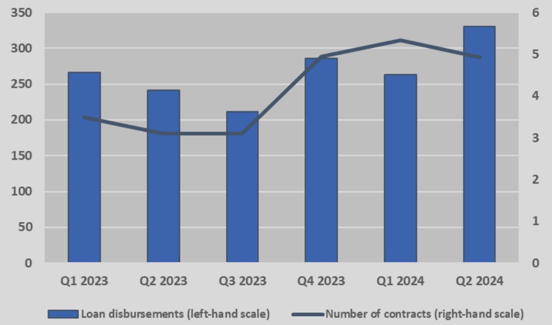
(a) Loan disbursements of RRE loans stood at EUR 593 million, up by 16.9% compared to the first half of 2023 (see Chart 1), and remain low both in absolute terms and compared with the levels prior to the global financial crisis.[2]

(b) The increase in disbursements was not accompanied by a loosening of credit origination standards. The analysis of key indicators (i.e. LTV-O, LTV-C, DSTI-O, LSTI-O, LTI-O, DTI-O)[3] shows that credit institutions so far maintain prudent lending standards.

Analysis of key figures and indicators

Chart 1. RRE loan disbursements and number of contracts

(Q1 2023 – Q2 2024, EUR million and thousand contracts)



Source: Bank of Greece.

The amount of RRE loan disbursements reached EUR 593 million, increased by 16.9% compared to the first half of 2023 (EUR 508 million), and the number of new loan contracts amounted to 10,257. The average disbursement amount in the first half of 2024 was EUR 57.9 thousand, down from EUR 77.2 thousand in the first half of 2023.

The market share of the four significant institutions as regards RRE loan disbursements amounted to 94.7%, having increased when compared to the first half of 2023 (93.0%). Less significant commercial banks and cooperative banks held a share of 4.3% and 1.0% respectively. Finally, the share of foreign credit institutions' branches was negligible.

The weighted average loan-to-value ratio at origination (LTV-O) stood at 61.2%, down by 53 basis points compared to the first half of 2023 (61.7%) (see Table 1). Analysing the frequency

[24] Source: data from the Organisation for Economic Cooperation and Development (OECD), 2015 = 100, https://data.oecd.org/price/housing-prices.htm

distribution of the LTV-O, 29.0% of disbursements exhibited an LTV-O of less than or equal to 50%, while 88.0% of disbursements had an LTV-O of less than or equal to 80%. Regarding the stock of RRE loans, the weighted average of the current loan-to-value ratio (LTV-C) stood at 61.8%, with 74.5% of these loans having an LTV-C of less than or equal to 80%.

Table 1 Key figures and indicators of RRE loan disbursements

	Loan disbursements (in EUR million)	Number of contracts	LTV-O	LTV-C	LSTI-O	DSTI-O	LTI-O	DTI-O
			(%)					
Q1 2024	262.7	5,328	61.7	64.2	23.4	30.7	3.9	4.6
Q2 2024	330.7	4,929	60.8	61.8	23.6	30.5	3.8	4.6
H1 2024	593.4	10,257	61.2	61.8	23.5	30.6	3.8	4.6

The weighted average loan-to-income ratio at origination (LTI-O) was 3.8, suggesting that total RRE loans are almost four times the total annual disposable income of borrowers. However, it is worth noting that 40.1% of disbursements displayed an LTI-O of less than or equal to 3. In addition, the weighted average debt-to-income ratio at origination (DTI-O) stood at 4.6, and 31.5% of new loans had a DTI-O of less than or equal to 3. Equally importantly, the weighted average of the loan service-to-income ratio at origination (LSTI-O) amounted to 23.5%, while the weighted average debt service-to-income ratio at origination (DSTI-O) was considerably higher at 30.6%.

Additional features

- Most RRE loan disbursements (96.9%) are intended for the purchase of “owner-occupied” residences, while only 3.1% are designated as “buy-to-let” loans.
- Almost all new loans are fully amortising.
- Loan disbursements with an initial rate fixation period of more than 10 years accounted for 45% of total new loans, and loan disbursements with an initial rate fixation period between 5 and 10 years accounted for 15% of total new loans. Hence, the bulk of new disbursements have a long fixed-interest rate period, protecting borrowers from potential future increases of key interest rates. The percentage of disbursements with an initial rate fixation period of less than or equal to one year amounted to 16% of total new loans.
- The average maturity upon origination of the loan disbursements is 24.3 years. 16% of new loan contracts have a maturity of up to 15 years, 35% have a maturity from 15 to 25 years, 44% have a maturity from 25 to 30 years, while the remaining 5% have a maturity above 30 years.

Joint distribution of indicators

As regards the joint distributions of selected indicators, 65% of loan disbursements exhibit an LTV-O of less than or equal to 80% and an LSTI-O of less than or equal to 30%, whereas 49% of loan disbursements show an LTV-O of less than or equal to 80% and a DTI-O of less than or equal to 4 (see Tables 2 and 3 below).

Table 2 Joint distribution of loan-to-value at origination (LTV-O) and loan service-to-income at origination (LSTI-O) of RRE loan disbursements (H1 2024)

(%)

Loan-to-value at origination (LTV-O)	Loan service-to-income at origination (LSTI-O)			
	≤30%	(30%-50%]	>50%	**Total**
LTV-O <= 80%	65.0	21.0	2.4	**88.4**
LTV-O (80%-90%]	7.9	3.1	0.2	**11.2**
LTV-O (90%-110%]	0.3	0.0	0.0	**0.3**
LTV-O >110%	0.1	0.0	0.0	**0.1**
Total	**73.3**	**24.1**	**2.6**	**100.0**

According to the joint distribution of the LTV-O and the LSTI-O, we classify RRE loan disbursements in three risk clusters, namely low, medium and high. Specifically, the bulk of loan disbursements (i.e. 72.9%) are classified as low risk (highlighted in green), indicating borrowers with sufficient income and debt-servicing capacity. Additionally, 26.9% of loan disbursements fall within the medium-risk category (highlighted in orange). The high-risk category (marked in red) accounts for only 0.2% of the total. These high-risk exposures are found within the cluster of LTV-O above 80% and LSTI-O above 50%, as well as the cluster of LTV-O above 90% and LSTI-O above 30%.

Table 3 Joint distribution of loan-to-value at origination (LTV-O) and debt-to-income at origination (DTI-O) of RRE loan disbursements (H1 2024)

(%)

Loan-to-value at origination (LTV-O)	Debt-to-income at origination (DTI-O)			
	≤4	(4-6]	>6	**Total**
LTV-O <= 80%	48.8	24.8	14.8	**88.4**
LTV-O (80%-90%]	2.6	3.6	5.0	**11.2**
LTV-O (90%-110%]	0.2	0.1	0.0	**0.3**
LTV-O >110%	0.0	0.0	0.0	**0.1**
Total	**51.6**	**28.5**	**19.8**	**100.0**

Moreover, considering the joint distribution of LTV-O and DTI-O, 51.4% and 43.4% of RRE loan disbursements are classified as low and medium risk, respectively, with 5.2% classified as high risk.

In conclusion, the analysis of the indicators shows that in the first half of 2024 credit institutions applied prudent credit origination standards on RRE loans.

Evolution of distribution tails in indicators for RRE loans

In addition to the analysis above, the level of prudence applied by domestic banks during the origination of RRE loans can also be assessed by examining the distribution tail of DTI-O, DSTI-O and LTV-O ratios, along with loan maturity at origination (see Chart 2).

Evidently, the distribution tail of the DTI-O, DSTI-O and LTV-O narrowed in the second quarter of 2024 compared to the first quarter (-491 basis points, -303 basis points and -51 basis points, respectively). By contrast, the distribution tail of loan maturity at origination increased by 156 basis points relative to the first quarter of 2024.

For the DTI-O ratio, the fourth quarter of 2023 and the first quarter of 2024 recorded the highest share of loans with a ratio above 6. This is partly driven by the impact of the "My Home" Programme, which affected both the distribution and the weighted average of the DTI-O ratio. Notably, in the second half of 2023, the weighted average DTI-O ratio for Programme loans was 6.5, compared with 4.3 for the rest of RRE loans (see the April 2024 *Financial Stability Review* for a comparison of Programme loans with other RRE loans). The reduction in the DTI-O tail in the second quarter of 2024 reflects a smaller share of "My Home" Programme loans in total RRE loan disbursements for that quarter.

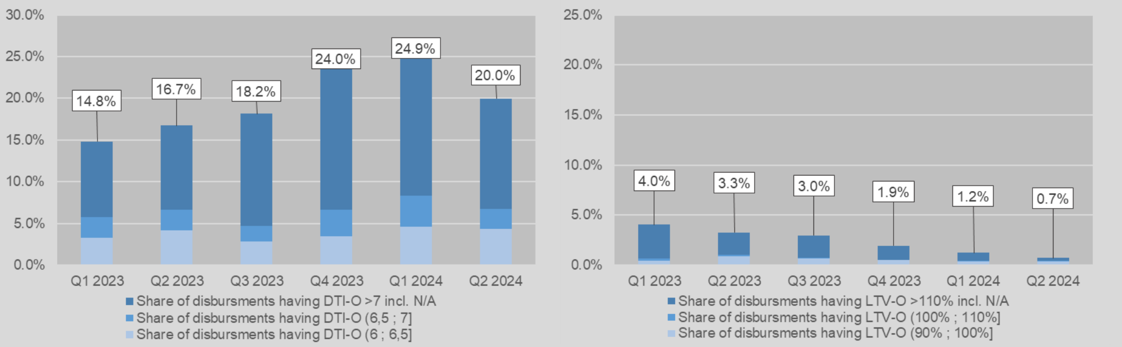
The LTV-O ratio tail also decreased over the reviewed period, reflecting credit institutions' higher down payment requirements for mortgage borrowers. This may be affected by developments in the domestic residential property market, which is now only 2.5 percentage points below its 2008 peak.

The tail of the DSTI-O ratio distribution over this period generally aligned with that of the DTI-O ratio, though it showed lower volatility. This is attributed to the fact that debt burden depends on the overall debt level. However, debt burden is inversely related to loan maturity, a relationship reflected in the evolution of the tails of these two distributions. This interdependence is evident in the fact that the lowest tail value of the DSTI-O distribution coincides with the highest tail value for loan maturity at origination (see Q4 2023 in Chart 2).

Chart 2 Evolution of distribution tails in indicators

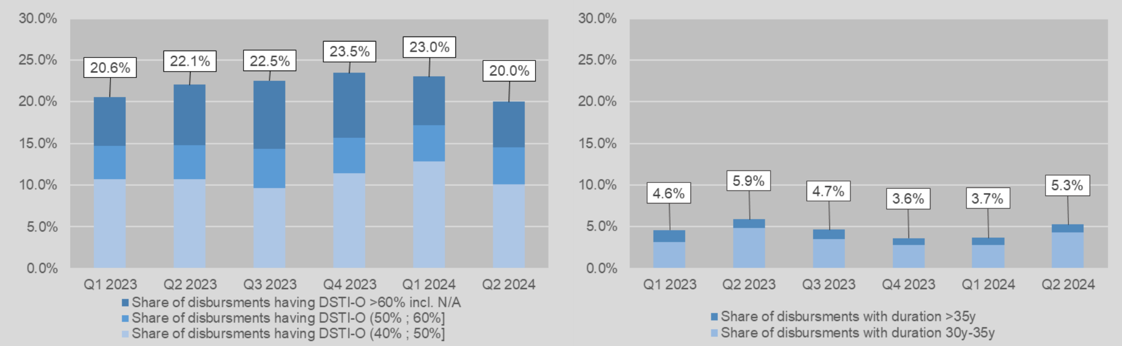
DTI-O ratio | **LTV-O ratio**

(Q1 2023 – Q2 2024, % of new disbursements in the period)



DSTI-O ratio | **Loan maturity at origination**

(Q1 2023 – Q2 2024, % of new disbursements in the period)



Source: Bank of Greece.

It is worth noting that the reduction in the DSTI-O distribution tail coincides with the announcement of the enactment of borrower-based measures, including a cap on the DSTI-O ratio, effective from 1 January 2025 (see ECA 227/1/2024).

In conclusion, the analysis of distribution tails for these ratios and loan maturity at origination confirms that domestic credit institutions still apply prudent lending standards to RRE loans. Moreover, the recent revision of supervisory reporting requirements for these loans (see Box II.2 "Revision of the framework on closing real estate data gaps (ESRB/2016/14, ESRB/2019/3)") is expected to improve the monitoring of lending standards and enable the introduction of effective measures should signs of easing be detected, thereby safeguarding financial stability.

[1] The present analysis refers to the banking sector, since leasing companies have reported neither loan disbursements nor loan balances collateralised by residential real estate.
[2] In the period 2005-2007, annual mortgage flows stood on average at EUR 12 billion (Bank of Greece data on credit to the private sector from domestic MFIs).
[3] The key indicators are the following: Loan-to-value ratio at origination (LTV-O); Current loan-to-value ratio (LTV-C); Debt-service-to-income ratio at origination (DSTI-O); Loan service-to-income ratio at origination (LSTI-O); Loan-to income ratio at origination (LTI-O); and Debt-to-income ratio at origination (DTI-O). Weighted averages are calculated based on exposure amounts.

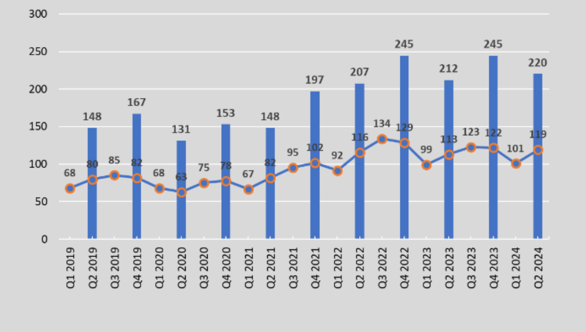
4. FINANCIAL CONDITION OF ENTERPRISES

4.1 FINANCIAL DATA

In the first half of 2024, the revenues of Greek corporates increased year-on-year. According to Hellenic Statistical Authority (HSA) data,[25] the turnover for all enterprises and activities of the economy as a whole amounted to EUR 220.2 billion, up by 3.8% compared to the first half of 2023 (Chart II.4).

Chart II.4 Turnover evolution for all enterprises and the activities of the economy as a whole

(EUR billion)



Note: quarterly and half-yearly data are depicted in line and bars respectively.

Source: Hellenic Statistical Authority.

The largest year-on-year increase in turnover was recorded in the "Construction" sector (17.1%) while the largest decrease was seen in businesses within the “Electricity, Gas, Steam, and Air Conditioning Supply” sector (27%), reflecting a further decline in energy prices. The turnover of the sector "Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles", which accounts for more than 1/3 of the turnover for all businesses, grew by 3%. A marginal increase (1.3%) was recorded in the turnover of the “Manufacturing” sector, which represents more than 1/5 of the total turnover of the economy.

Analysing ELSTAT’s quarterly data, turnover in Q1 2024 reached EUR 100.8 billion, up by 1.5% year-on-year. The largest turnover increase in Q1 2024 was recorded in the “Administrative and Support Service Activities” sector, by 20.0%, while the largest decrease was seen in the “Electricity, Gas, Steam, and Air Conditioning Supply” sector, by 33.5%. Similarly, in Q2 2024, turnover reached EUR 119.4 billion, showing a 5.7% increase compared with Q2 2023. The strongest turnover increase in Q2 2024 compared to Q2 2023 was recorded in the “Construction” sector, by 16.6%, while the largest decrease was seen in the “Electricity, Gas, Steam, and Air Conditioning Supply” sector, by 19.8%.

In Q1 2024, Greek businesses’ profitability growth declined year-on-year. In particular, according to the latest available data from ELSTAT,[26] the gross operating surplus of Greek corporates increased by 2.7% in Q1 2024 (compared with an increase of 7.3% in the same period of 2023), while the net operating surplus decreased by 4.4% (against an increase of 4.2% in the same period of 2023). Therefore, in Q1 2024 the performance of the business sector in terms of operating profits – as expressed by the net profit share, i.e. the ratio of net operating surplus to net value added – declined to 35.1%, compared with 37% in the corresponding period of 2023, remaining however significantly higher than the average of the pre-pandemic period 2017-2019 (28.1%).

[25] Press Release – Evolution of turnover of enterprises for H1 2024

[26] Quarterly Non-Financial Accounts of Institutional Sectors for Non-Financial Corporations (S.11) / 1st Half 2024

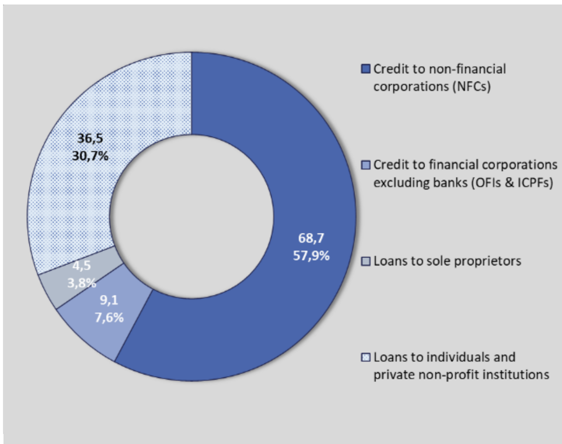
4.2 CREDIT TO NON-FINANCIAL CORPORATIONS AND INDEBTEDNESS

Financing of non-financial corporations by domestic Monetary and Financial Institutions (MFIs) is a significant part of the total financing of the private sector. In the first half of 2024, credit expansion to non-financial corporations (NFCs) accelerated. Greek banks slightly eased lending standards to enterprises, according to the Bank Lending Survey,[27] with loan demand increasing in the first months of the year and remaining stable thereafter. At the European level, loan demand has weakened due to high interest rates and lower investment, while the recent interest rate cuts by the ECB helped reduce corporate borrowing costs in the second half of 2024.

In particular, the financing of NFCs by domestic MFIs represents 58% of the total financing of the private sector in the country (see Chart II.5). The annual rate of change of NFC financing by MFIs in August 2024 remained positive (10.5%), moving at higher levels compared to December 2023 (5.8%) and August 2023 (2.4 %, see Chart II.6).[28]

Chart II.5 Credit to the domestic private sector by domestic MFIs

(EUR billion; %, August 2024)

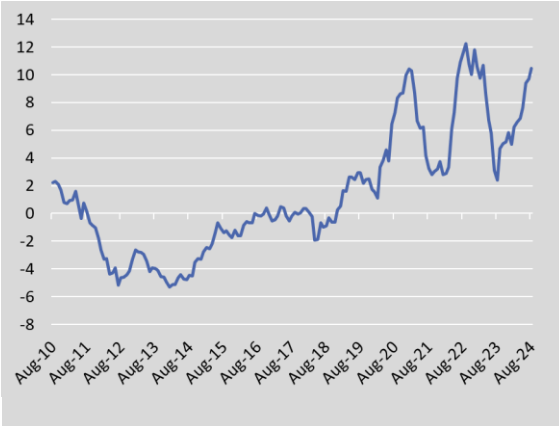


Source: Bank of Greece.

Note: Outstanding amounts at end of period, including securitised loans and corporate bonds.

Chart II.6 Annual rate of change in credit to NFCs by domestic MFIs (August 2020-August 2024)

(%, annual growth rates)



Source: Bank of Greece.

Note: Growth rates are derived from the changes in outstanding amounts corrected for loan write-offs, exchange rate variations and reclassifications or sales of loans.

According to the results of the Bank Lending Survey published by the Bank of Greece on a quarterly basis, credit standards on loans to NFCs "remained basically unchanged" in the first, second and third quarters of 2024, while the overall terms of granting loans "eased somewhat"[29] in the first and second quarters of 2024 compared to the fourth quarter of 2023 and "remained basically unchanged" in the third quarter of 2024. Overall demand for NFC loans increased in the first quarter of 2024, especially for loans to large corporations. During the second quarter of 2024, the

[27] The Bank Lending Survey is conducted on a quarterly basis by the national central banks of the euro area in collaboration with the European Central Bank (ECB), on a sample of approximately 150 banks from all euro area countries, which includes the four significant credit institutions in our country.

[28] The acceleration of bank loan disbursements linked to the Recovery and Resilience Facility (RRF), whose share is estimated at approximately 10%, also contributed to this development.

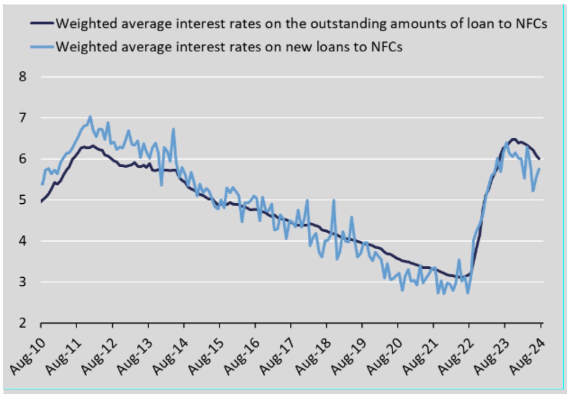
[29] The average of banks' responses in the first, second and third quarter 2024 was 3.75, 3.5 and 3 respectively, compared with 3 in the fourth quarter of 2023. It is noted that the average of banks' responses is on a scale of 1 to 5, where: 1=lending conditions “tightened considerably”, 2=“tightened somewhat”, 3=“remained basically unchanged”, 4=“eased somewhat” and 5=“eased considerably”.

demand for loans to SMEs remained unchanged,[30] while it increased marginally during the third quarter, in line with banks' expectations. Banks' expectations for the demand for loans to SMEs for the fourth quarter of 2024 appear moderate. In the same vein, during the first quarter of 2024, total demand for loans increased and remained stable in the second quarter of 2024, with banks expecting it – according to the Bank Lending Survey – to "remain basically unchanged" for the third quarter, as it did. The average of the responses for the factors affecting the demand for loans from NFCs was higher than 3 for the option "mergers/acquisitions and business restructuring" (3.25 for Q3 2024, where 3 = "remained basically unchanged" and 4 = "increased somewhat"). In contrast, the average number of responses to the same question was lower than 3 (2.75) for the option "internal financing". It should be pointed out that at the European level, in the third quarter of 2024 there was a slight increase in the demand for loans from businesses, for the first time since the third quarter of 2022,[31] led by SMEs.[32]

The borrowing costs of NFCs in the first half of 2024 were affected by expectations of a cut in key ECB interest rates. The weighted average new loan rate fell by 28 basis points to 5.73% in August 2024, from 6.01% in December 2023, but remained at a high level. In the same vein, in the examined period the weighted average interest rate on existing loans decreased by 43 basis points to 5.95%, from 6.38% (see Chart II.7). It is worth noting that, for both existing and new loan contracts to NFCs, Greek banks' interest rates are among the highest in the euro area. It should be pointed out that a reduction of lending rates significantly helps businesses reduce their operating costs.

Chart II.7 Weighted average interest rates on new and outstanding loans to NFCs by MFIs (August 2010 – August 2024)

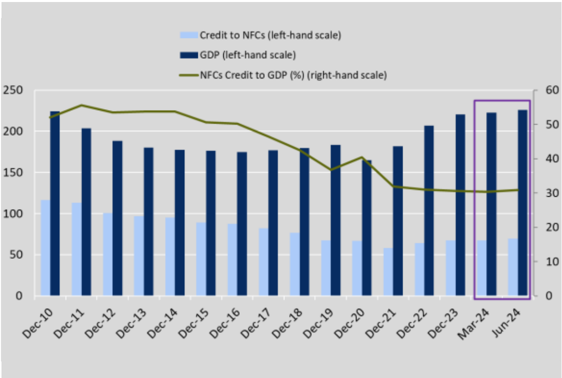
(%)



Source: Bank of Greece.

Chart II.8 Ratio of NFC credit to Gross Domestic Product (December 2010 – June 2024)

(EUR million, %)



Sources: Bank of Greece, Hellenic Statistical Authority.
Note: GDP and financing figures are shown on an annualised basis.

[30] The average of banks' responses was 3.50 in the first quarter, 3 in the second and 3.25 in the third quarter. It is noted that the average of banks' responses is on a scale of 1 to 5, where: 1=loan demand "decreased considerably", 2="decreased somewhat", 3="remained basically unchanged", 4="increased somewhat", 5="increased considerably".

[31] The euro area bank lending survey – Third quarter of 2024 (ECB).

[32] There was considerable variation across euro area countries, with banks in Germany, Spain and France reporting an increase in demand, while those in Italy and eight of the remaining 16 countries reported a decrease. The net increase in demand for loans was mainly due to the reduction in interest rates, with a limited contribution from fixed capital investment, after about two years of negative impact from these factors.

The financing of NFCs as a percentage of GDP stood at 30.8%, showing a small increase in June 2024 compared to 2023 (30.6%, see Chart II.8).

Box II.2 Revision of the framework on closing real estate data gaps (ESRB/2016/14, ESRB/2019/3)

The Bank of Greece, in its capacity as the macroprudential authority, adopted, by Executive Committee Act 175/1/29.07.2020, the Recommendation of the European Systemic Risk Board (ESRB/2016/14), as amended by Recommendation ESRB/2019/3, on closing real estate data gaps (hereinafter, the "ESRB Recommendation"). Establishing a harmonised framework across Europe for monitoring developments in the residential and commercial real estate markets, which are the key segments of the property market for financial stability purposes, is essential for the timely identification of vulnerabilities that could lead to financial crises. In this context, monitoring a reliable and comparable set of key indicators for residential and commercial real estate loans and investments on a regular basis helps identify systemic risks that are building up and assess whether there is a need for potential macroprudential interventions. These indicators provide valuable information that enables more effective selection and calibration of macroprudential tools applicable to credit providers (e.g. sector-specific capital requirements, including those for the real estate sector), thereby helping to avert future instances of excessive credit expansion and, consequently, a resurgence in non-performing loans. Furthermore, these indicators guide national authorities in employing borrower-based measures.

The Executive Committee of the Bank of Greece issued a new Act repealing Executive Committee Act 175/1/29.07.2020, having regard to:

- the European Central Bank (ECB) and the ESRB's call upon national authorities to collect detailed data for assessing credit standards on loans to individuals secured by residential real estate;
- the introduction of borrower-based measures (Executive Committee Act 227/1/08.03.2024) and the need to monitor their implementation; and
- the development of a methodology for identifying and monitoring vulnerabilities in the commercial real estate sector as part of the Bank of Greece's compliance with ESRB Recommendation ESRB/2022/9 of 1 December 2022 on vulnerabilities in the commercial real estate sector in the European Economic Area.

The main changes introduced by ECA 231/3/15.07.2024 are as follows:

- Revised definitions (e.g. first-time buyer, loan flows) and updated calculation methods for indicators (e.g. loan-to-value ratio – LTV) to enhance clarity and harmonise approaches for completing the reports to be submitted.
- New data on loans secured by residential real estate, including joint distributions of the loan-to-value at origination (LTV-O) ratio and the debt service-to-income at origination (DSTI-O) ratio, increased granularity in frequency distribution data for these indicators, and data on loans to which ECA 227/1/08.03.2024 measures do not apply.
- New templates and dimensions for commercial real estate loans. The additional information to be collected includes, for instance, frequency distributions of the loan-to-

value at origination (LTV-O) ratio, the interest coverage at origination (ICR-O) ratio and the debt service coverage at origination (DSCR-O) ratio, as well as a breakdown by sector of economic activity.

- More frequent (half-yearly) submission of data on the stock of commercial real estate loans and investments (previously annual).

The new Executive Committee Act took effect on 1 October 2024, thus allowing sufficient time for domestic data providers to adjust.[1]

[1] The provisions of ECA 231/3/15.07.2024 apply to credit institutions incorporated and operating in Greece, branches in Greece of credit institutions incorporated in EU or non-EU countries, and leasing companies incorporated and operating in Greece.

5. DEVELOPMENTS IN DOMESTIC AND INTERNATIONAL MONEY AND CAPITAL MARKETS

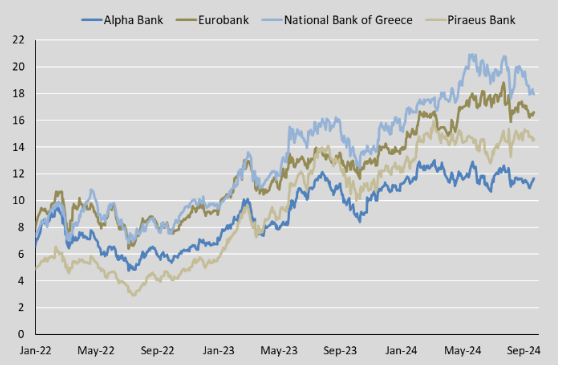
During the first nine months of 2024, the positive climate in money and capital markets continued, resulting in the prevalence of upward trends for the majority of stock market indices globally. Contributing to the rise were the gradual easing of inflationary pressures, the milder, compared to initial estimates, slowdown of economic growth internationally, as well as the start of the rate-cutting cycle by central banks.

In Greece, the economy continued to grow at a satisfactory rate, creating a favourable macroeconomic environment. The Greek government's commitment to fiscal discipline, combined with the new upgrade of Greece's debt outlook in September 2024 by Moody's[33] and DBRS,[34] an improvement of the financial situation of Greek non-financial corporations,[35] conditions of political stability, as well as a further improvement of the financial figures of the Greek banking sector contributed decisively to maintaining the upward trend of the Greek stock market. As a result, during the first nine months of 2024 the domestic stock market indices edged upwards, while the Athens Composite Share Price Index (ATHEX) reached a new almost ten-year high in May 2024 (1,502.79 points), up by 16.2% compared to the end of the previous year.

Regarding the significant banks whose stocks are listed on the Athens Exchange, the Market Capitalisation to Weighted Assets Index (Market Cap/RWAs, see Chart II.9) tracked the ATHEX, rising substantially during the first nine months of 2024, due to the positive course of banks' financial figures, the upgrade of their credit rating in September 2024 by two rating agencies (Standard & Poor's[36] for Alpha Bank and Fitch[37] for all significant banks), as well as the favourable macroeconomic environment.

Chart II.9 Greek banks' capitalisation index as a percentage of weighted assets

(1.1.2022-30.9.2024, daily prices, %)



Sources: Athens Exchange and Bank of Greece

[33] On 13 September 2024, the credit rating agency Moody's revised its outlook for Greece to "positive" from "stable", maintaining its rating at Ba1.

[34] On 6 September 2024, the credit rating agency DBRS upgraded the trend on Greece to positive, keeping Greece's Issuer Ratings at BBB (low).

[35] See Section II.4 "Financial condition of enterprises".

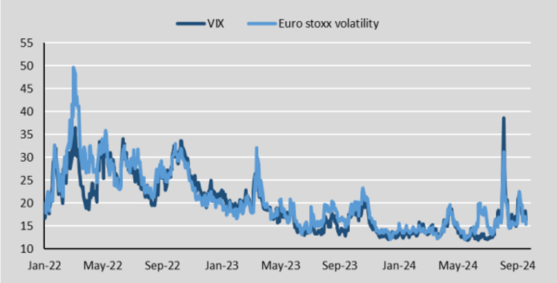
[36] Report [Standard and Poor's.]

[37] On 6 September 2024, Fitch Ratings upgraded the Long-Term Rating (Issuer Default Rating – IDR) category of the four significant Greek banks by one notch.

Volatility in international stock markets during the period January-September 2024 remained low, with the exception of early August, when a sharp increase was observed. The rise in volatility during this period was triggered by the surprise decision by the Bank of Japan (BoJ) at the end of July 2024 to increase its key interest rate by 15 basis point to 25 basis points, sparking a sell-off in money, foreign exchange and capital markets, which resulted in a sharp repricing of financial assets globally.[38] The brief market turmoil highlighted once again the high level of interconnectedness between markets worldwide and the speed with which shocks can be transmitted internationally. Despite increased uncertainty worldwide, under the influence of adverse geopolitical developments (Russia-Ukraine, Middle East) and political uncertainty from the upcoming US election, volatility in international money and capital markets has now abated significantly (see Chart II.10).

Chart II.10 European and US financial markets' volatility

(1.1.2022- 30.9.2024, daily prices, %)

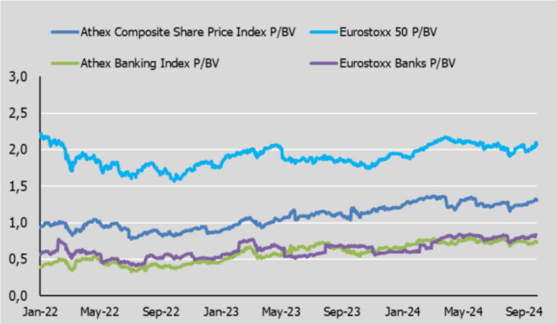


Source: Bloomberg.

The difference in valuations between European and Greek stocks marginally narrowed during the first nine months of 2024, as the ATHEX increased more than the Euro Stoxx 50[39] index (12.3% vs. 10.6%, respectively). The Price to Book Value (P/BV) of European stocks during the same period rose from 1.93 to 2.07, while the corresponding index of the ATHEX rose from 1.20 to 1.30 in that period. It should be noted that the European average P/BV came to 2.04 in the specific period and continues to be significantly higher than the corresponding Greek one (1.28 – see Chart II.11).

Chart II.11 Stock market indices

(1.1.2022- 30.9.2024, daily prices, %)



Sources: Athens Exchange and Börse Frankfurt.

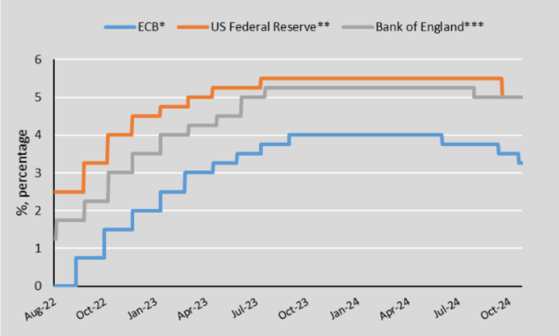
[38] The BoJ's key interest rate hike, combined with investors' expectations for further BoJ monetary policy tightening and an accelerated pace of Fed rate cuts, led to a narrowing of the yield differential between Japanese government bonds and US Treasuries, making the "carry trade" strategy unattractive. This resulted in a sharp unwinding of carry trades. It should be noted that the carry trade strategy relies on borrowing funds at a very low interest rate from one country, in this case from Japan, in order to then place these funds in other markets and financial instruments with a higher yield, such as US equities.

[39] The Euro Stoxx 50 is the stock market index of the euro area designed by Stoxx, an index provider owned by Deutsche Börse Group. The index consists of 50 stocks of companies considered leaders in their respective sectors and belonging to the high capitalisation category in 11 countries of the euro area.

Since June 2024, the European Central Bank, the Bank of England and the US Federal Reserve (Fed) have embarked on a rate-cutting cycle. In particular, the European Central Bank first reduced its deposit facility rate[40] in June 2024 by 25 basis points,[41] following up with two cuts of 25 basis points each in September[42] and October.[43] In the same vein, in August 2024 the Bank of England[44] reduced its key interest rate by 25 basis points and, finally, on 18 September 2024 the Fed[45] cut its key interest rate by 50 basis points (see Chart II.12).

Chart II.12 Central banks' key interest rates

(1.8.2022-22.10.2024, daily prices, %)



* Deposit facility rate.

** Key interest rate (upper limit)

*** Key interest rate

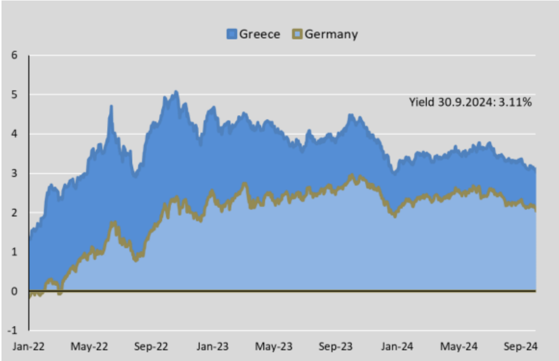
Sources: European Central Bank, US Federal Reserve, Bank of England.

Euro area ten-year bond yields during the period January 2024-September 2024 presented a mixed picture. Initial uncertainty over the stance of the ECB's monetary policy in 2024 contributed to an increase in most euro area bond yields during the first half of 2024. However, the first cut of the ECB's key interest rate in June 2024, as well as its further reduction in September, led to a decline in yields, as a result of which at end-September 2024 they came to a level marginally higher than at the beginning of 2024.

Similarly, the yields of Greek government bonds saw a marginal increase during the first nine months of 2024, while the yield differential (spread) of the ten-year Greek government bond against its German counterpart (Bund) decreased marginally from 103 basis points at the beginning of January 2024 to 99 basis points at end-September 2024 (see Chart II.13).

Chart II.13 Greek and German 10-year bond yields

(1.1.2022-30.9.2024 daily prices, %)



Source: Public Debt Management Agency.

[40] It should be noted that the key interest rates of the ECB are the deposit facility rate, the main refinancing operations rate and the marginal lending facility rate.

[41] European Central Bank.

[42] European Central Bank

[43] European Central Bank.

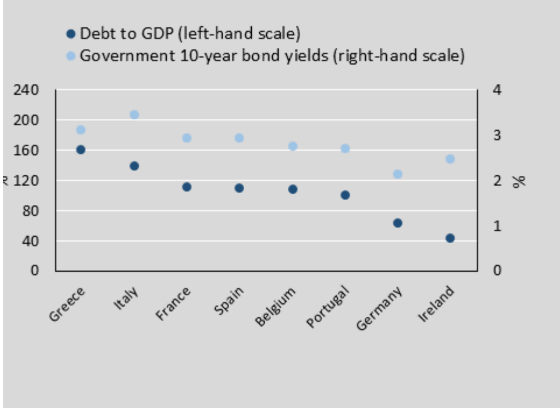
[44] Bank of England.

[45] US Federal Reserve.

The ten-year government bond yield in relation to the debt-to-GDP ratio of Greece reached a lower level compared to the corresponding bond yields of the other euro area countries in relation to their debt-to-GDP ratios. It should be noted that the ten-year Italian government bond yield rose to a higher level than its Greek counterpart, despite Italy's lower debt-to-GDP ratio (see Chart II.14).

Chart II.14 Debt–to-GDP ratio and 10-year government bond yields

(30.9.2024, percentage %)



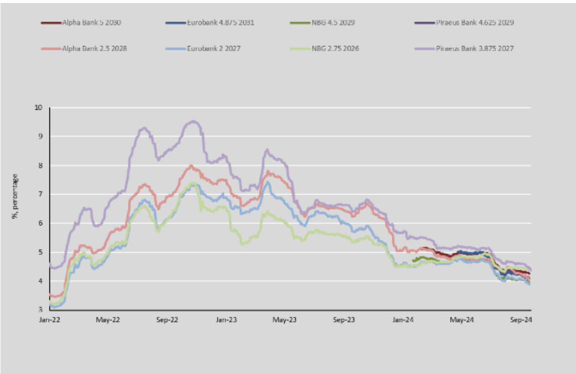
Sources: Public Debt Management Agency, Eurostat.

In the USA, the 10-year Treasury yield fell marginally to 3.78% at end-September 2024, from 3.88% at the beginning of January 2024. It should be noted that the US Federal Reserve has set its benchmark rate in the range of 4.75% to 5%, following the interest rate cut that took place in September 2024.

Significant Greek banks' bond yields declined during the period January 2024-September 2024, due to an improvement of banks' financial figures, as well as the upgrades of their creditworthiness by credit rating agencies (see Charts II.15 and II.16). Credit rating upgrades, combined with the disinvestment of the Financial Stability Fund from the equity capital of significant banks, have given new impetus to attracting investors' funds.[46] Against this background, Greek banks issued bonds (both senior preferred and subordinated) of a total of EUR 6.5 billion during the first nine months of 2024. It should be pointed out that the decline in banks' funding costs is inextricably linked to the effort to cover the Minimum Requirement for own funds and Eligible Liabilities (MREL). Therefore, any future credit rating upgrades of the four significant banks will further contribute positively to this effort.

Chart II.15 Evolution of yields of senior preferred bonds issued by Greek banks

(1.1.2022-30.9.2024, percentage %)



*For each of the 4 significant banks, the oldest and the most recent bond issuance have been chosen (issuance before 31.8.2024)
Sources: Börse Frankfurt and Börse München.

Chart II.16 Evolution of yields of subordinated and perpetual bonds issued by Greek banks

(1.1.2022-30.9.2024, percentage %)

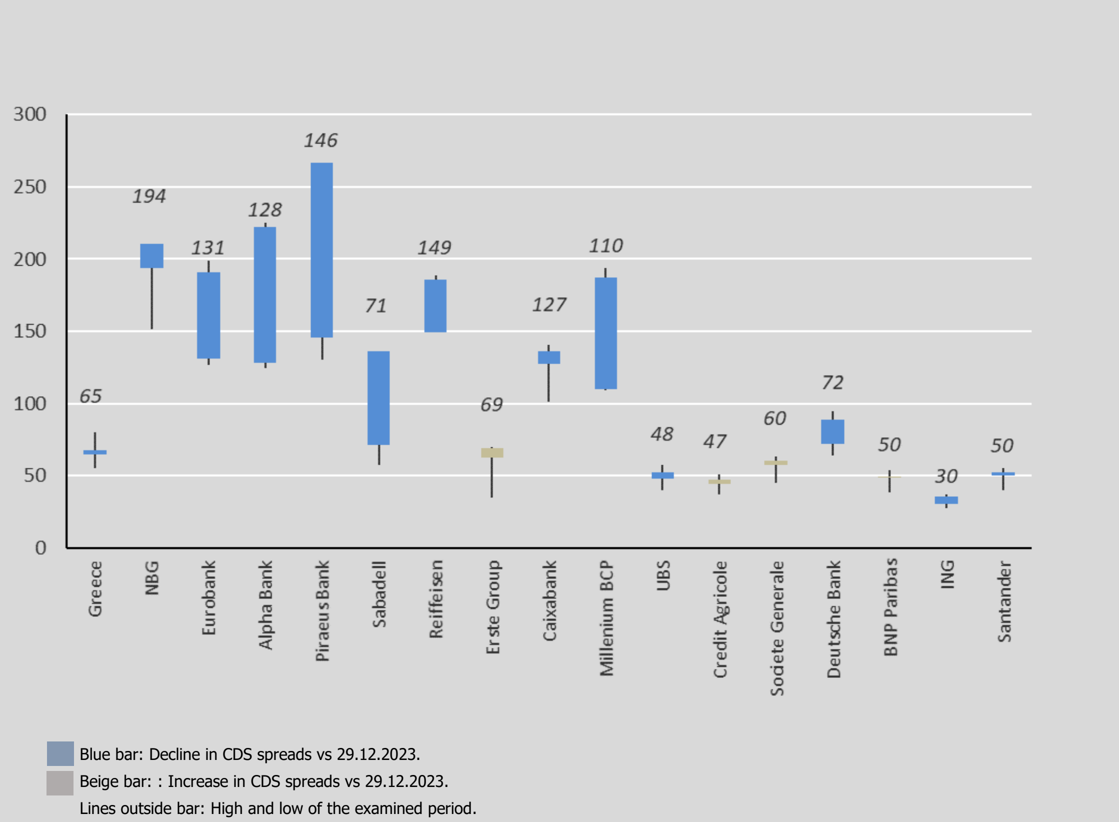
*For each of the 4 significant banks, the oldest and the most recent bond issuance have been chosen (issuance before 31.8.2024)
Sources: Börse Frankfurt and Börse München.

[46] According to the best practices of investment funds (e.g. mutual funds, other institutional investors, etc.), as a prerequisite for investing in a financial instrument, the issuer of the instrument must have been assigned investment grade rating by at least two internationally recognised rating agencies.

Finally, due to the improvement in the economic climate, Greece's 5-year Credit Default Swaps (CDS) decreased between January 2024 and September 2024, reaching 65 basis points at end-September 2024, from 67 basis points at end-December 2023 (Chart II.17).

Chart II.17 5-year CDS spreads of the Greek sovereign, Greek and European banks

(29.12.2023-30.9.2024, basis points)



Source: Bloomberg.

The prices of five-year credit risk swaps for all significant Greek banks followed a similar downward trend until September 2024.

III. THE BANKING SECTOR

1. KEY BALANCE SHEET FIGURES

In June 2024, Greek banking groups' assets stood at EUR 321.5 billion, up by 0.8% (or EUR 2.6 billion) compared to December 2023 (see Table III.1).

Table III.1 Structure of assets and liabilities of Greek commercial banking groups

(in EUR million)

	2023		June 2024		Change
Assets		%		%	
Cash & balances with the central bank	36,973	11.6	34,121	10.6	-2,852
Due from banks	8,003	2.5	7,751	2.4	-251
Loans & advances to customers (net)	157,675	49.4	159,507	49.6	1,832
Derivative financial instruments	4,966	1.6	4,671	1.5	-295
Debt securities	64,979	20.4	68,742	21.4	3,762
Investment in subsidiaries & associates, tangible and intangible assets	11,038	3.5	11,713	3.6	675
Non-current assets held for sale	7,554	2.4	7,546	2.3	-7
Other assets	27,752	8.7	27,460	8.5	-292
Total	**318,940**	**100**	**321,510**	**100**	**2,570**
	2023		**June 2024**		**Change**
Liabilities		%			
Deposits from customers	233,737	73.3	235,611	73.3	1,874
Due to banks	22,941	7.2	19,427	6.0	-3,514
Debt securities in issue & other borrowed funds	13,013	4.1	15,137	4.7	2,124
Liabilities related to assets held for sale	4,810	1.5	4,690	1.5	-120
Other liabilities	12,578	3.9	12,658	3.9	81
Total equity	31,862	10.0	33,986	10.6	2,125
Total	**318,940**	**100**	**321,510**	**100**	**2,570**

Source: Bank of Greece.

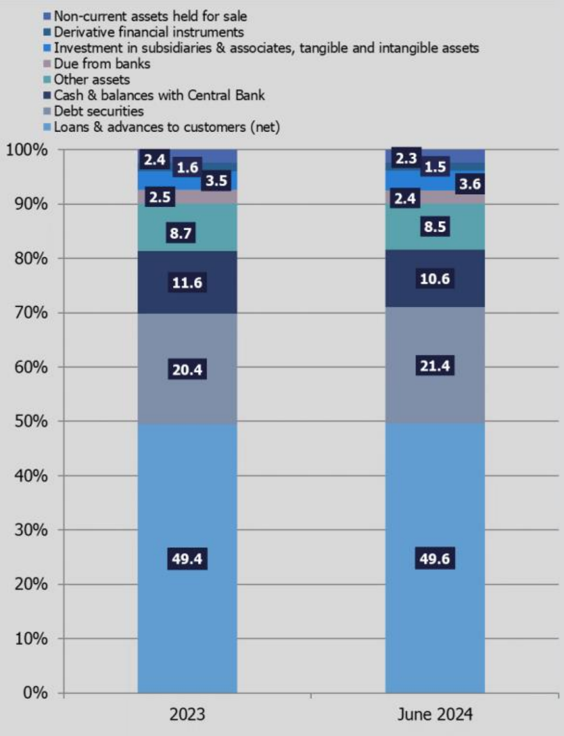
More specifically, changes in assets' volumes and composition are mainly attributed to:

(i) A rise of EUR 3.8 billion in debt securities, mainly due to an increase in foreign government bonds and corporate bonds, resulting in a rise in the share of debt securities in total assets (June 2024: 21.4%, December 2023: 20.4%).

(ii) A decrease of EUR 2.9 billion in cash, mainly cash balances with the Bank of Greece, as a result of the repayment of Targeted Longer-Term Refinancing Operations (TLTRO III) funding from the Eurosystem. Consequently, the share of cash in total assets decreased (June 2024: 10.6%, December 2023: 11.6%, see Chart III.1 and Table III.1).

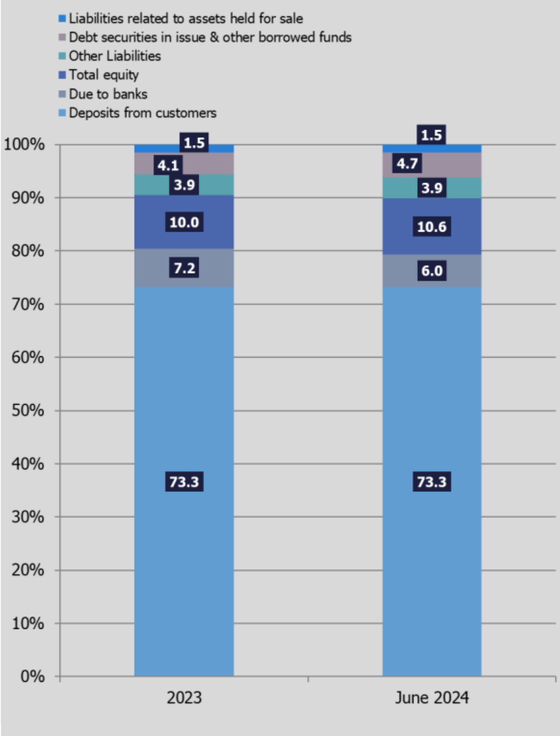
(iii) An increase of EUR 1.8 billion in net loans, as loan disbursements exceeded the reduction of balances due to loan repayments. As a result, the ratio of net loans to total assets increased marginally (June 2024: 49.6%, December 2023: 49.4%, see Chart III.1).

Chart III.1 Structure of assets of Greek banking groups
(%)



Source: Bank of Greece.

Chart III.2 Structure of liabilities of Greek banking groups
(%)



Source: Bank of Greece.

On the liabilities side, the most significant developments were as follows:

(i) A decrease of EUR 3.5 billion in amounts due to credit institutions, as a result of the partial repayment of TLTRO III funding. Consequently, the ratio of amounts due to credit institutions over total liabilities fell (June 2024: 6.0%, December 2023: 7.2%).

(ii) A rise of EUR 2.1 billion in banking groups' equity, mainly due to an increase in reserves and retained earnings. As a result, the ratio of equity to total liabilities rose (June 2024: 10.6%, December 2023: 10.0%).

(iii) An increase in debt securities in issue and other borrowed funds by EUR 2.1 billion, resulting in a rise of their share in total liabilities (June 2024: 4.7%, December 2023: 4.1%; see Chart III.2 and Table III.1). The banks have undertaken a series of bond issuances in their effort to meet the minimum requirements for own funds and eligible liabilities (MREL) by 2025, as well as to strengthen their capital base.

(iv) An increase of EUR 1.9 billion in customers' deposits. Nevertheless, the ratio of customers' deposits to total liabilities remained stable at 73.3% (see Chart III.2).

2. RISKS

2.1 CREDIT RISK

Evolution of key figures

In the first half of 2024, the asset quality of credit institutions' loan portfolios deteriorated slightly. In June 2024, the total stock of non-performing loans (NPLs) stood at EUR 10.4 billion, up by 4.8% or EUR 476 million compared to the end of 2023 (EUR 9.9 billion), according to on-balance-sheet data on a solo basis[47] (see Table III.2). However, in the second quarter of 2024, the total stock of NPLs decreased by 6% or EUR 671 million compared to the first quarter of 2024.

Table III.2 Key figures – Total portfolio

(in EUR million, on-balance-sheet items)	Dec-23	Jun-24
Breakdown of NPLs		
Total loans	**149,595**	**151,022**
Performing loans	**139,641**	**140,593**
NPLs	**9,954**	**10,430**
Unlikely-to-pay	3,245	2,669
Past due > 90 days	2,535	3,709
91-180 days	410	530
181-360 days	388	648
>1 year	1,737	2,531
Denounced loans	4,173	4,052
Breakdown of forborne loans		
Forborne loans	**8,537**	**7,403**
Performing forborne loans	5,010	4,427
Non-performing forborne loans	3,527	2,977
Breakdown of impairment losses and write-offs		
Accumulated impairment on NPLs	**4,577**	**4,278**
Total collateral	**95,712**	**95,845**
Collateral on performing loans	**89,654**	**89,429**
Collateral on NPLs	**6,058**	**6,416**
Unlikely-to-pay	2,311	1,837
Past due > 90 days	1,435	2,274
Denounced loans	2,311	2,305
Collateral on non-performing forborne loans	**2,486**	**1,961**
Flows breakdown of non-performing loans and write-offs	**Dec-23**	**Jun-24**
Flows of non-performing loans	**815**	**576**
Flows to performing loans	-1,827	-746
Flows from performing loans	2,642	1,322
Write-offs	**1,041**	**256**
of which write-offs of denounced loans	759	190

Source: Bank of Greece.

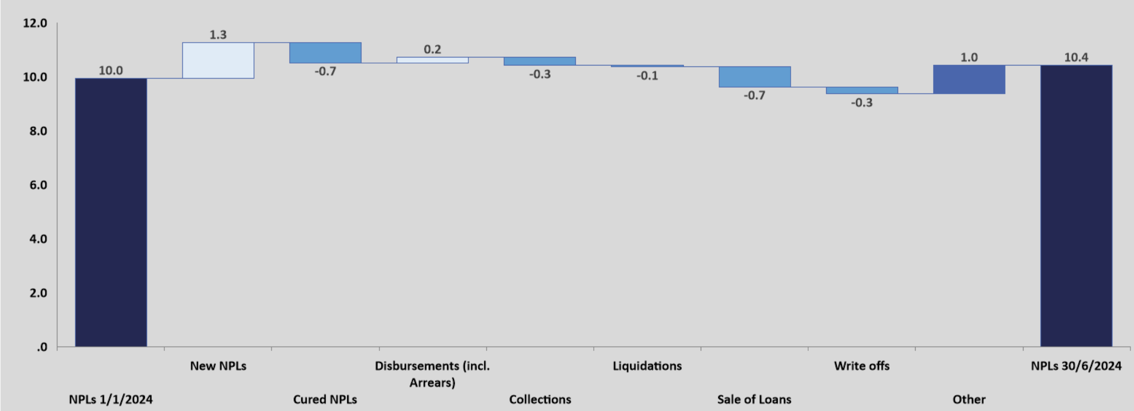
It should be noted that the total reduction of NPLs from their March 2016 peak has reached 90.3% or EUR 96.8 billion.

[47] On a consolidated basis, the NPL stock stood at EUR 10.6 billion, up by 4.3% or EUR 0.4 billion from EUR 10.2 billion at the end of 2023.

The increase of NPLs during the first half of 2024 is due to the inclusion in the NPL perimeter – pursuant to a supervisory requirement – of certain government-guaranteed loans. This is a non-recurring development (see Chart III.3).

Chart III.3 Flows of non-performing loans in the first half of 2024

(in EUR billion)



Note 1: The categories "Liquidations" and "Sale of Loans" include any partial write-off amounts related to these categories. The "Write-offs" category includes pure loan write-offs.
Note 2: NPL sales transactions directly or through securitisations are included in the categories "Sale of Loans" and "Other".
Note 3: Loans guaranteed by the Greek State to special social groups are included in the category "Other".
Source: Bank of Greece.

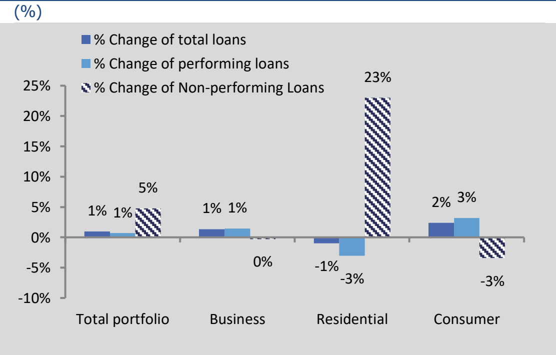
It is noted that the net inflow of new NPLs (i.e. the sum of "new NPLs" and "disbursements" net of "cured NPLs" – see Chart III.3) in the first half of 2024 is positive, despite the significant cured loans flow. At the same time, NPL reduction through collateral liquidation remained negligible.

It is important to note that the transfer of NPLs out of the banking sector does not automatically imply the removal of the debt from the economy; the debt remains and is now managed by credit servicing firms (CSFs).

The total stock of outstanding loans (both performing and non-performing) on a solo basis amounted to EUR 151 billion, recording a slight increase of 1.0%, coming mainly from the business loan portfolio and specifically loans to large corporates (2.6%). Additionally, new NPLs in the residential mortgage loan portfolio contributed to the aforementioned increase (inclusion of loans guaranteed by the Greek State in the NPL perimeter) (see Chart III.4).

Chart III.4 Percentage change of Greek banks' total (performing and non-performing) loans per portfolio in the first half of 2024

(%)



Source: Bank of Greece.

The ratio of NPLs to total loans at the end of the first half of 2024 stood at 6.9%, compared with 6.7% at the end of 2023. It should be noted that credit expansion mitigated the effect of the increase in NPLs. However, in the less significant institutions (LSIs), the ratio of NPLs to total loans remains particularly high, at 36.4% in the first half of 2024, down by 1.2% compared to

December 2023, a reduction mostly related to some of these institutions' credit expansion. Nevertheless, a material decline of this ratio is expected by the end of 2024 after the inclusion of a significant portion of the NPLs of Attica Bank and Pancreta Bank in the "Hercules" asset protection scheme. Additionally, the system-wide NPL ratio remains higher than the European average (June 2024: 2.3%[48]). Consequently, banks must continue their efforts to reduce their existing NPL stock, especially in light of emerging challenges.

The ECB's tightening of its monetary policy in response to inflationary pressures created a high interest rate environment. Such an environment clearly poses direct challenges to the cost of financing and the debt repayment capacity of households and corporations. The securitisation of NPLs, through the government's asset protection scheme ("Hercules" – HAPS III) is expected to contribute to a further reduction of NPLs, especially for the LSIs. Maintaining a satisfactory level of economic growth in Greece and improving the conditions for lower-income households, combined with declining inflation, will ease the pressures on households' and businesses' financial situation.

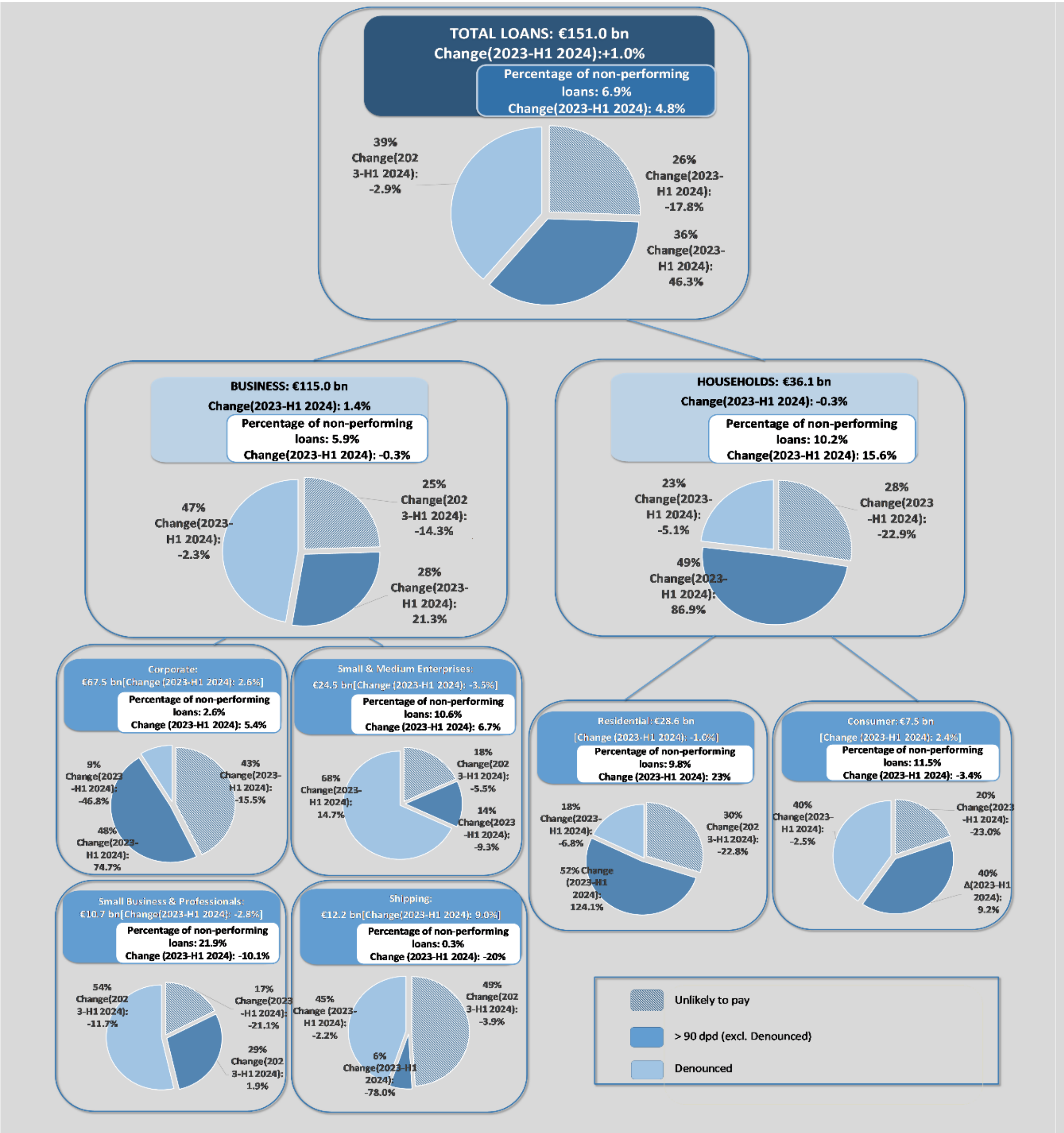
Structure and evolution of non-performing loans (NPLs)

An increase in the stock of NPLs was recorded for most loan portfolios during the first half of 2024, with the largest increase in NPLs being recorded in household loans (15.6%) and specifically mortgage loans (23%), both in percentage terms and in absolute terms (EUR 0.5 billion). This is mainly attributable to the aforementioned inclusion in the NPL perimeter – pursuant to a supervisory requirement – of government-guaranteed loans to special social groups (see Chart III.5).

[48] Source: . Source: Single Supervisory Mechanism – SSM.

Chart III.5 Structure and evolution of Greek commercial banks' total loans and NPLs by loan portfolio category in the first half of 2024

(in EUR billion, %)



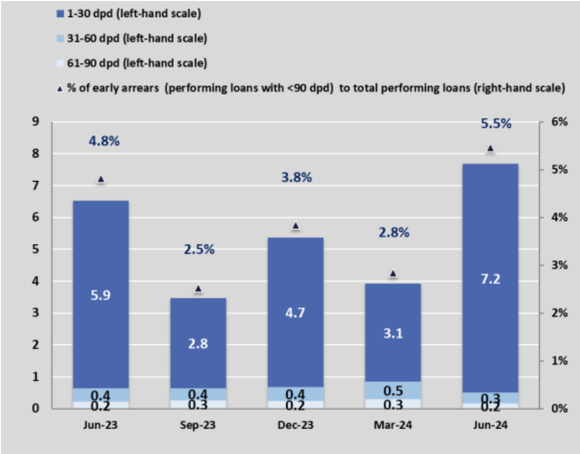
Source: Bank of Greece.

Unlikely-to-pay loans amounted to EUR 2.7 billion (26% of NPLs) in June 2024, down by 17.8% compared to December 2023 (EUR 3.2 billion).

Loans that are 1 to 90 days past due (early arrears) increased by 43% to EUR 7.7 billion in June 2024, from EUR 5.4 billion at the end of 2023, while the ratio of these loans to total performing loans increased to 5.5% in June 2024, compared with 3.8% in December 2023 (see Chart III.6). This increase is mainly driven by business loans from 1 to 30 days past due.

Chart III.6 Structure of early arrears per arrears bucket and ratio of early arrears to total performing loans

(in EUR billion, %)



Source: Bank of Greece.

Loans over 90 days past due (excluding denounced loans) amounted to EUR 3.7 billion (35.6% of NPLs) in June 2024, up by 46.3% compared to December 2023 (EUR 2.5 billion), due to the aforementioned inclusion in the NPL perimeter of loans guaranteed by the Greek State that are in the process of being repaid by the Greek State. However, it should be noted that 68.2% of the NPLs in this category are more than one year past due, a percentage that has remained relatively stable since the end of 2023 (68.5%). The corresponding delinquency rate reaches 61.8% for business loans, 78.8% for residential loans and 58.6% for consumer loans.

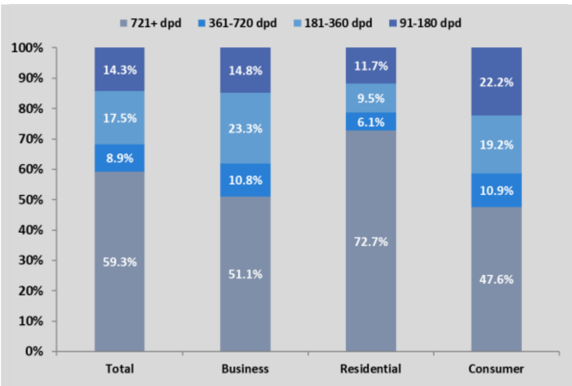
The structure of NPL balances over 90 days past due per portfolio as at June 2024 is presented in Chart III.7.

At the same time, 38.8% of NPLs relate to denounced loans, which in June 2024 amounted to EUR 4.1 billion, down by 2.9% (-EUR 0.1 billion) compared to the end of 2023, mainly due to sale transactions.

Finally, the quality of the portfolio is reflected in the allocation of the total loan stock per stage, in accordance with International Financial Reporting Standard 9 (IFRS 9): in June 2024, compared to December 2023, there is a marginal increase in stage 3 loans due to an increase in NPLs, as well as a rise in stage 1 loans due to credit expansion (see Chart III.8).

Chart III.7 NPLs' balance structure in the arrears bucket of more than 90 days past due (excluding denounced loans) per portfolio (June 2024)

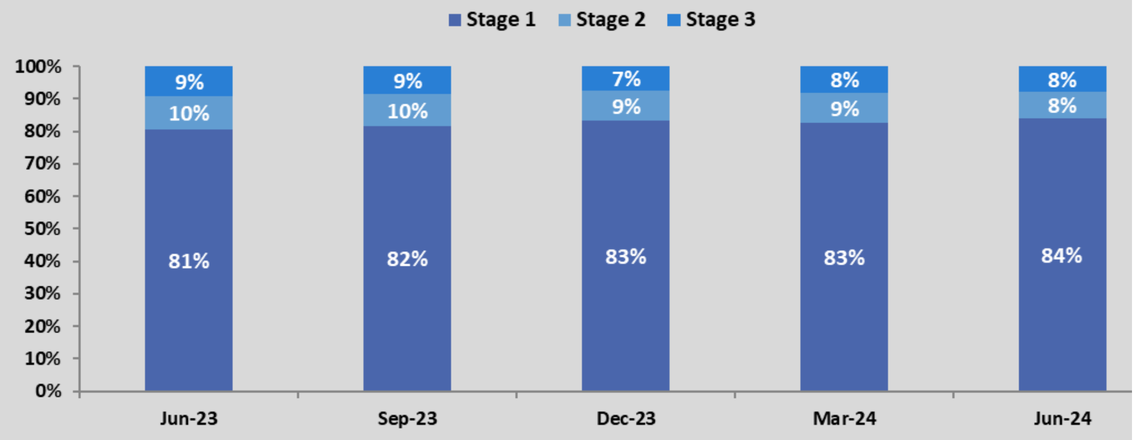
(%)



Source: Bank of Greece.

Chart III.8 Allocation of the total loan stock per stage according to IFRS 9

(%)



Source: Bank of Greece.

Indicators for monitoring and evaluation of NPLs

Regarding the indicators for monitoring and evaluation of the management of NPLs for June 2024, the following are observed (see Table III.3):

Table III.3 Total portfolio – Key indicators

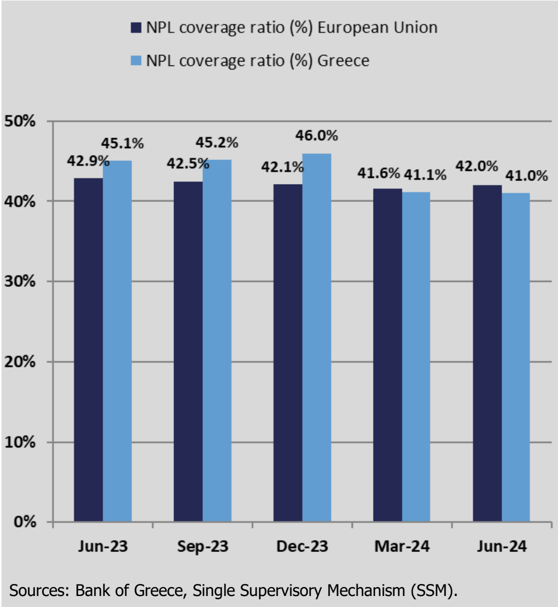
(%. on-balance-sheet items)	Dec-23	Jun-24
Credit quality indicators		
NPL ratio	**6.7**	**6.9**
> 90 days past due	4.5	5.1
NPL structure		
Unlikely-to-pay	**32.6**	**25.6**
Past due > 90 days	**25.5**	**35.6**
91-180 days	4.1	5.1
181-360 days	3.9	6.2
>1 year	17.4	24.3
Denounced loans	**41.9**	**38.8**
Forborne to total loans		
Forborne loans	**5.7**	**4.9**
Forborne performing loans	3.3	2.9
Forborne non-performing loans	2.4	2.0
Coverage ratios and write-offs		
Coverage ratio of NPLs	**46.0**	**41.0**
Total write-offs to total loans	**0.7**	**0.2**
Total write-offs to NPLs	**10.5**	**2.5**
NPL collateral coverage ratio	**60.9**	**61.5**
Collateral coverage on forborne non-performing loans	70.5	65.9
Total NPL coverage (provisions + collaterals)	106.8	102.5
Cost of Credit risk	**Q4 2023**	**Q2 2024**
Loan-loss impairment to net loans	1.1	0.7
Loan-loss impairment to total assets	0.5	0.4

Source: Bank of Greece.

- The NPL coverage ratio (accumulated provisions) stood at 41% in June 2024, compared with 46% in December 2023. In particular, the cumulative provisions for the coverage of NPLs established by banks in June 2024 amounted to EUR 4.3 billion, compared with EUR 4.6 billion at the end of 2023. This decrease is mainly due to the sale transactions (including NPLs transferred to the available-for-sale portfolio) that took place within the first half of the year. It should be noted that since the first quarter of 2024, the level of the NPL coverage ratio in Greece is slightly below the corresponding European average (see Chart III.9), as a result of an increase in the denominator (NPLs) and a simultaneous decrease in the numerator (cumulative provisions).

Chart III.9 NPL coverage ratio

(%)



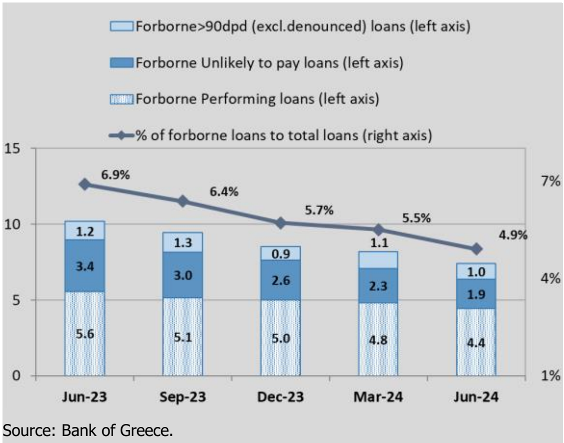
Sources: Bank of Greece, Single Supervisory Mechanism (SSM).

- The collateral coverage ratio for NPLs in June 2024 was 61.5%, higher than at the end of 2023 (60.9%), while the collateral coverage ratio on forborne non-performing loans amounted to 65.9%, compared with 70.5% at the end of 2023.
- Total forborne loans[49] in June 2024 fell to EUR 7.4 billion, from EUR 8.5 billion in December 2023, representing 4.9% of total loans (5.7% in December 2023) (see Chart III.10). The decrease in forborne loans since December 2023 is mainly due to sales of NPLs carried out in 2024.

  It should be noted that 14% of forborne loans are in arrears by more than 90 days, an increased percentage compared to the end of 2023 (10.6%).

Chart III.10 Evolution of forborne loans per category and evolution of the ratio of forborne loans to total loans

(in EUR billion, %)



Source: Bank of Greece.

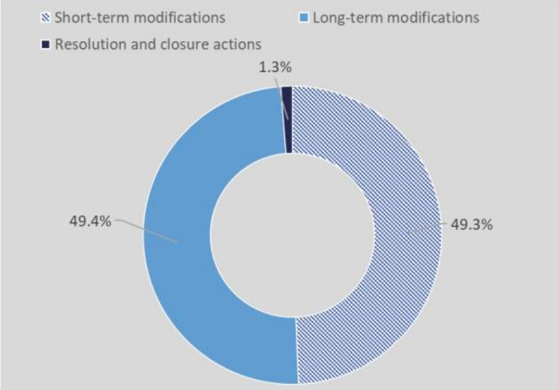
- 72.1% of NPLs over 90 days past due have not been modified (forborne), compared with 64.4 % at the end of 2023, while the corresponding rates for residential, consumer and business loans stand at 86.5%, 73.8% and 60.7%, respectively.
- Loan write-offs in the first half of 2024 amounted to EUR 256 million, of which EUR 190 million relate to denounced loans, in particular business loans (EUR 150 million).

[49] Bank of Greece Executive Committee Act 175/29.7.2020 provides an indicative typology of forbearance and resolution and closure solutions for performing and non-performing loans.

- During the first half of 2024, the flows from performing to non-performing loans were EUR 1.3 billion (of which EUR 1.0 billion concern the aforementioned loans guaranteed by the Greek State), while the flows from non-performing to performing loans were EUR 0.7 billion, leaving positive net flows to non-performing loans of EUR 576 million. It should be noted that net flows to NPLs were observed in both the first and second quarters of 2024, with a reduced trend in the second quarter (EUR 360 million in Q1 and EUR 216 million in Q2).
- It should be noted that EUR 149 million, i.e. 1.4% of the NPLs, relate to loans that are under legal protection status and for which the issuance of a final court decision is pending. Of these, EUR 74 million relate to loans that have already been denounced. Loans in this category concern either natural persons (e.g. Law 3869/2010[50]) or legal entities (e.g. Law 4307/2014, Bankruptcy Code). Regarding the sub-categories, approximately 3.2% of non-performing residential loans are subject to legal protection, while the corresponding percentage for consumer loans is 2.7%.

Chart III.11 Allocation of forborne loans balance per modification type

(%)



Source: Bank of Greece.

The vast majority of forborne loans is divided between long-term modifications (49.4%) and short-term modifications (24.5%), followed by resolution and closure actions (1.3%) (see Chart III.11). The percentage of forborne non-performing loans in June 2024 was 27%, significantly reduced compared to December 2023 (41.6%).

Credit risk per sector for business loans

In July 2024, financing to businesses, according to on-balance-sheet data, amounted to EUR 115 billion, accounting for about 76.1% of the total financing of Greek credit institutions to the economy. The NPL ratio in the business portfolio was 5.9%, mainly driven by the high ratio in the category of small and medium-sized enterprises (SMEs) (10.6%) and Small Business Professionals (SBPs) (21.9%).

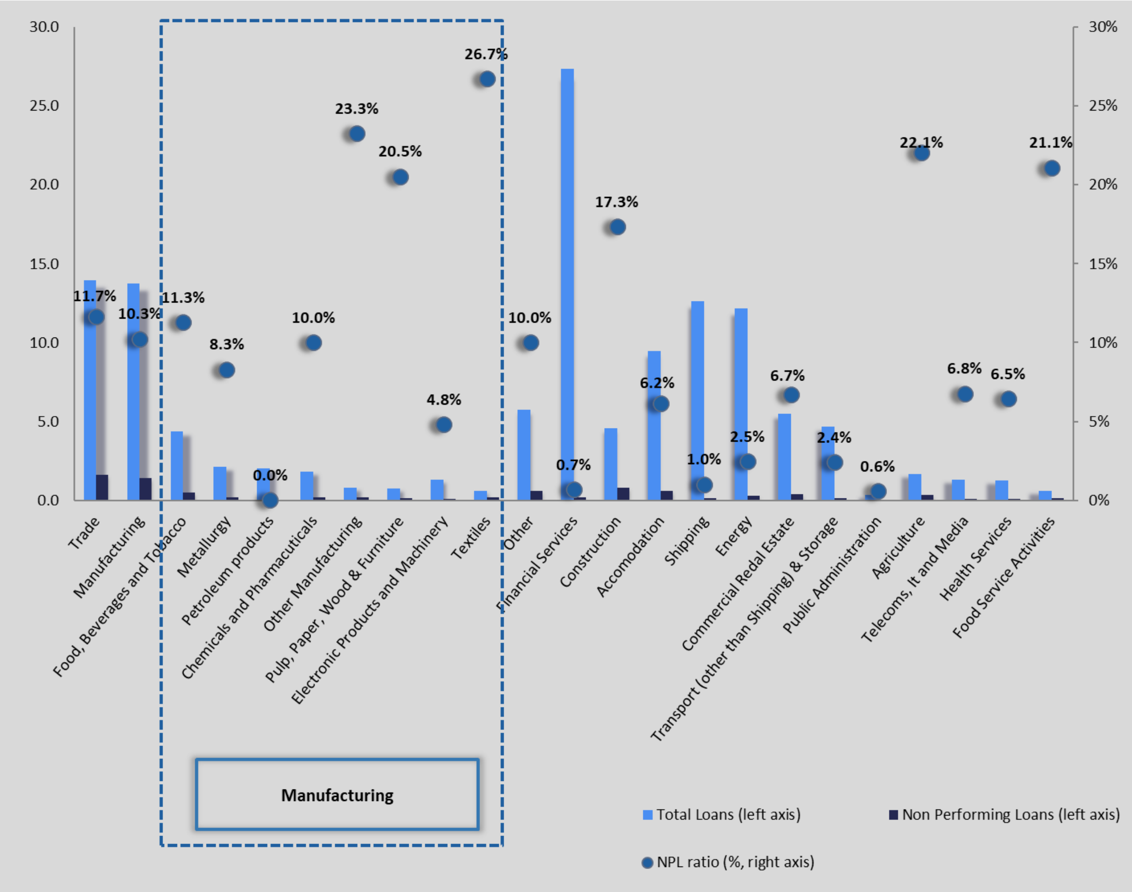
As regards the sectoral breakdown of financing to the Greek economy, the largest share concerns financial corporations (24% of total corporate financing). The NPL ratio for this sector (0.7% in July 2024) is much lower than the corresponding average ratio for business loans.

The highest NPL ratios are recorded in the sectors of Agriculture (22.1%), Food Service Activities (21.1%), Construction (17.3%), Trade (11.7%), Manufacturing (10.3%) and Telecommunications, IT and Media (6.8%). High NPL ratios are also recorded in sub-sectors of Manufacturing, such as Textiles (26.7%), Other Manufacturing (23.3%) and Pulp, Paper, Wood & Furniture (20.5%), which, however, concern lower lending balances and therefore have a lower effect on the overall NPL ratio of the Manufacturing sector. The lowest ratios are indicatively observed in Financial Services (0.7%) and Transport (2.4%) (see Chart III.12).

[50] The law, last amended in September 2018, provides that banking secrecy will be lifted with respect to borrowers benefiting from its provisions, who will cease to qualify for protection if they raise any objection. At the same time, borrowers will declare that they authorise any credit institution to disclose to their creditors the data of any bank accounts and products, permitting them to process and exchange the data they hold or receive from credit institutions.

Chart III.12 Sectoral breakdown of business loans and NPLs for the first half of 2024

(in EUR billion, %)



Source: Bank of Greece.

The outlook for banks' portfolio quality is expected to be affected primarily by the following factors:

a) the securitisation of NPL portfolios under the "Hercules" government guarantee scheme, which will contribute to a reduction of the NPL stock; and

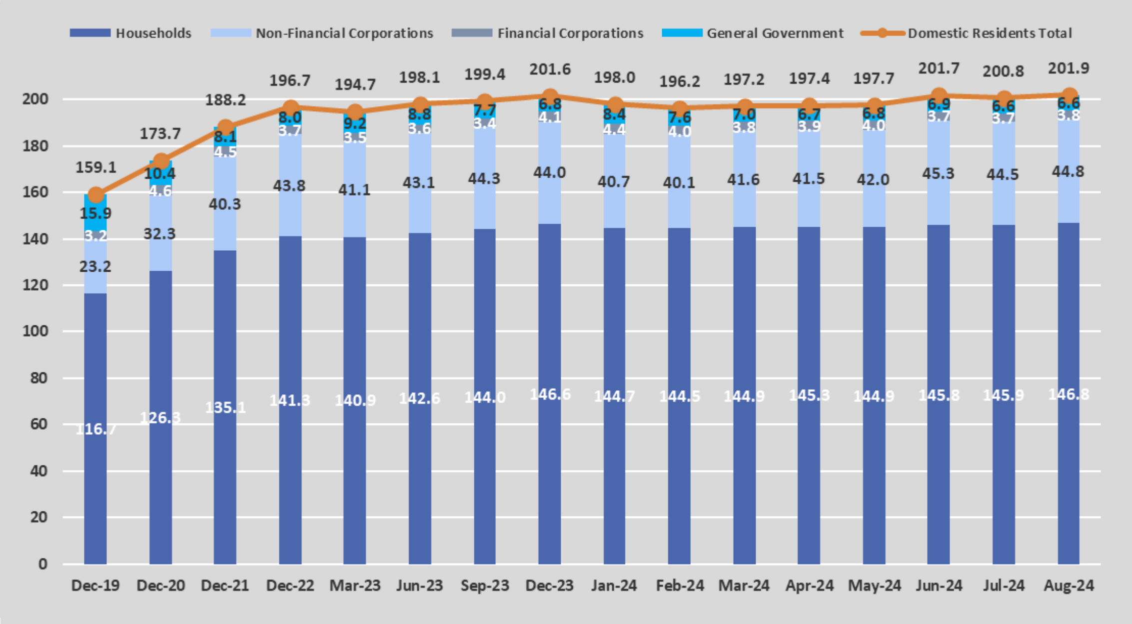
b) the pace of ECB key interest rate cuts, combined with mounting geopolitical risks and uncertainty in the international financial environment.

2.2 LIQUIDITY RISK

The liquidity of the Greek banking sector remained satisfactory during the first half of 2024 despite the adverse macroeconomic environment. The balance of deposits in Greece by domestic residents in August 2024 amounted to EUR 201.9 billion, slightly higher than in December 2023 (see Chart III.13). The temporary decline in deposits observed in January and February 2024 is partly due to seasonal factors. Additionally, a portion of liquidity was channeled into loan repayments, with this tendency being more pronounced in business loans. Since March 2024, deposits exhibited an upward trend.

Chart III.13 Deposits and repos of domestic non-MFIs in MFIs in Greece (excluding the Bank of Greece)

(in EUR billion)



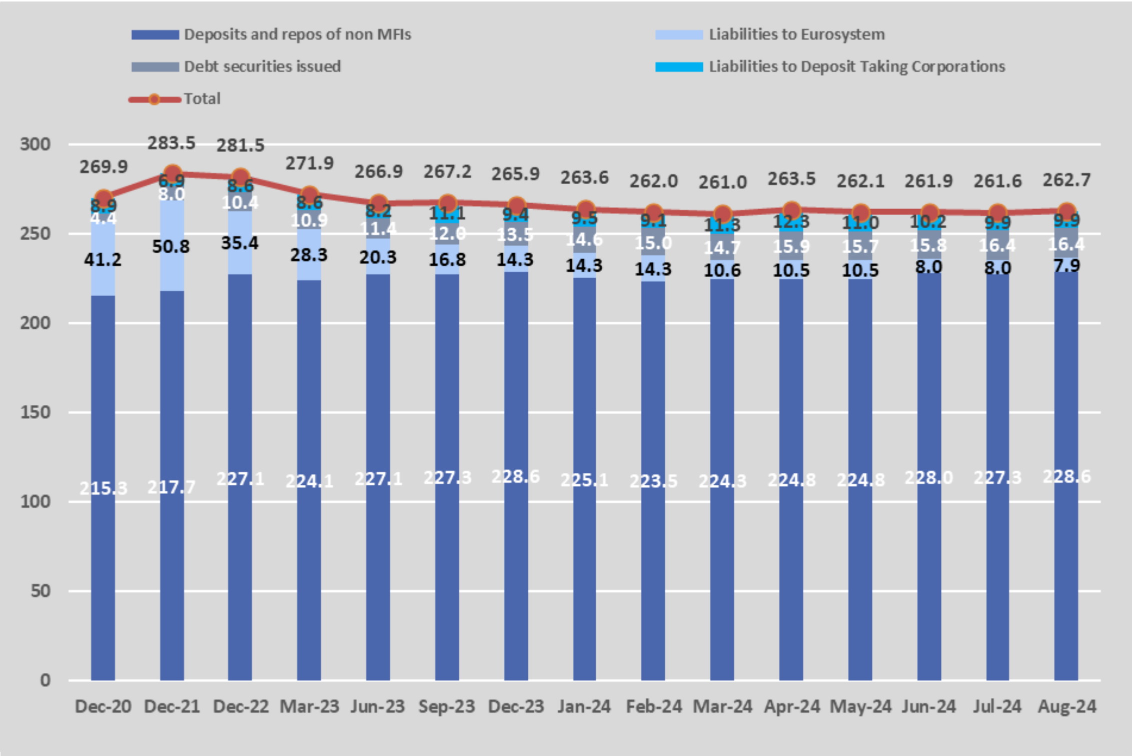
Source: Bank of Greece.

In particular, in August 2024, deposits held by households stood at EUR 146.8 billion, up by EUR 0.2 billion (0.1%) compared to December 2023, while the deposits of non-financial corporations amounted to EUR 44.8 billion, up by EUR 0.7 billion (1.7%) compared to December 2023. Between January and August 2024, general government deposits decreased by 3% (August 2024: EUR 6.6 billion, December 2023: EUR 6.8 billion). Also, deposits held by financial corporations exhibited a 7.3% decrease (August 2024: EUR 3.8 billion, December 2023: EUR 4.1 billion).

As Greek banks continued to repay TLTRO III funding in 2024, their financing by the Eurosystem further declined by EUR 6.4 billion (August 2024: EUR 7.9 billion, December 2023: EUR 14.3 billion) (see Chart III.14).

Chart III.14 Sources of funding of Greek credit institutions

(in EUR billion)



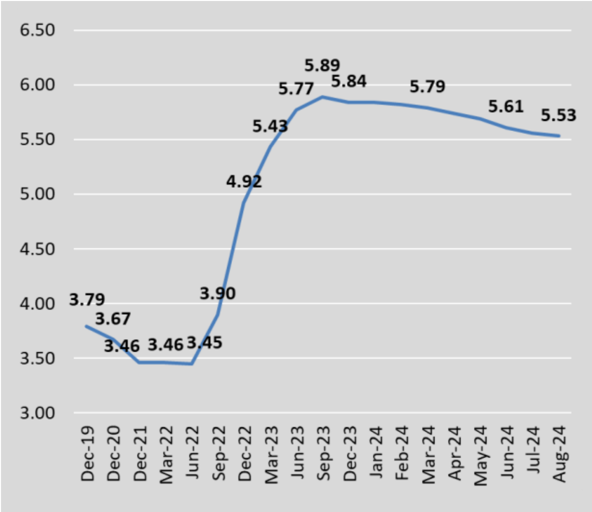
Source: Bank of Greece.

By the end of 2024, the repayment of Eurosystem funding through TLTRO III will have been completed. In addition, liabilities to deposit-taking corporations increased slightly (by EUR 0.5 billion) (August 2024: EUR 9.9 billion, December 2023: EUR 9.4 billion). Deposits and repurchase agreements with non-financial corporations (including households) in August 2024 returned to the level of December 2023 (EUR 228.6 billion), after a seasonal decline observed in the first two months of 2024. Debt securities issued increased by EUR 2.8 billion (August 2024: EUR 16.4 billion, December 2023: EUR 13.5 billion).

Between January and August 2024, a slight increase in deposit rates was observed, along with a parallel downward trend in lending rates (see Chart III.15). The weighted average interest rate on deposits/repurchase agreements was 0.53% in August 2024 (December 2023: 0.51%). The average interest rate offered to households and non-financial corporations was 0.47% and 0.73% respectively in August 2024 (December 2023: 0.41% and 0.83% respectively). The movements in the weighted average interest rate on deposits/repurchase agreements continue to be driven almost exclusively by time deposits.

Chart III.15 Loan-Deposit Interest Rate Spread

(%)



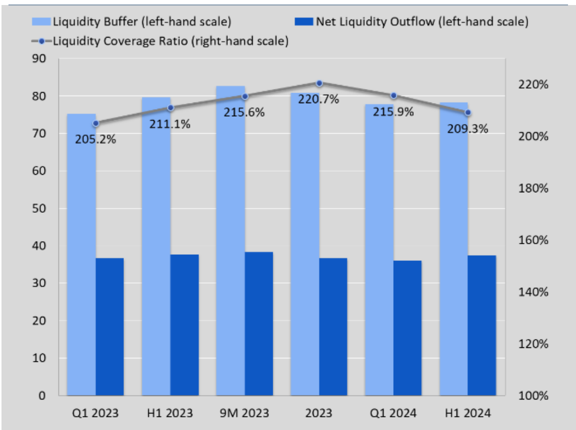
Source: Bank of Greece.

Bank liquidity indicators

In the first half of 2024, Greek banks maintained a high level of liquidity, although liquidity ratios have slightly declined on average since December 2023. The Liquidity Coverage Ratio (LCR) closed at 209.3% in June 2024, down from 220.7% in December 2023 (see Chart III.16), but was still more than double the supervisory requirement of 100%. This reduction is mainly driven by decreased liquid assets, including balances at the central banks and sovereign bonds. The Liquidity Coverage Ratio for Greek banks remained at a significantly higher level than the corresponding European average for banks in the Single Supervisory Mechanism (159.4% for significant institutions – SIs – in Q2 2024).[51] As repayments of TLTRO III funding continue, the LCR of Greek banks could be impacted if the collateral released upon repayment does not qualify for inclusion in their liquidity buffers.

Chart III.16 Liquidity Coverage Ratio (LCR)

(% and in EUR billion)



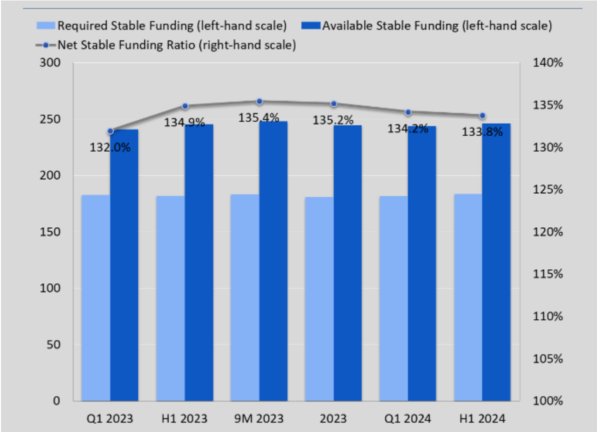
Source: Bank of Greece.

[51] Source: ECB Banking Supervision, Supervisory Banking Statistics.

In addition, the Net Stable Funding Ratio (NSFR) stood at 133.8% in June 2024, down from 135.2% in December 2023, reflecting the adequate coverage of banks' long-term liabilities without requiring the excessive use of short-term funding (see Chart III.17). The small decline in the ratio was due to an increase in required funding and in particular net loans. The Net Stable Funding Ratio for Greek banks remained slightly higher than the corresponding average for banks in the Single Supervisory Mechanism (127.5% for SIs in Q2 2024).[52] The supervisory requirement for the NSFR is set at 100%.

Chart III.17 Net Stable Funding Ratio (NSFR)

(% and in EUR billion)

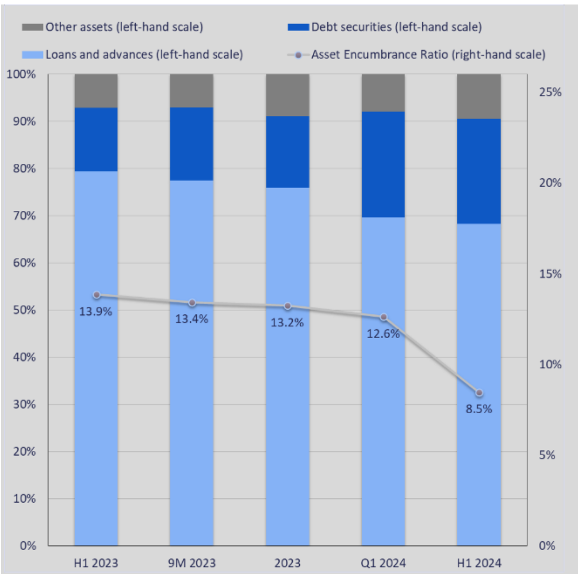


Source: Bank of Greece.

The Asset Encumbrance Ratio (AER) improved significantly, falling to 8.5% in June 2024, from 13.2% in December 2023, and remained below the corresponding average of European Banking Authority banks (June 2024: 24.2%[53]) (see Chart III.18). The decrease occurred mainly in Q2 2024 following the release of encumbered assets in the context of the partial repayment of TLTRO III funding. Regarding the structure of encumbered assets, loans and advances decreased by EUR 8.4 billion or 26.6%, while debt securities increased by nearly EUR 1.0 billion or 16.0% between December 2023 and June 2024.

Chart III.18 Asset Encumbrance Ratio (AER)

(%)



Source: Bank of Greece.

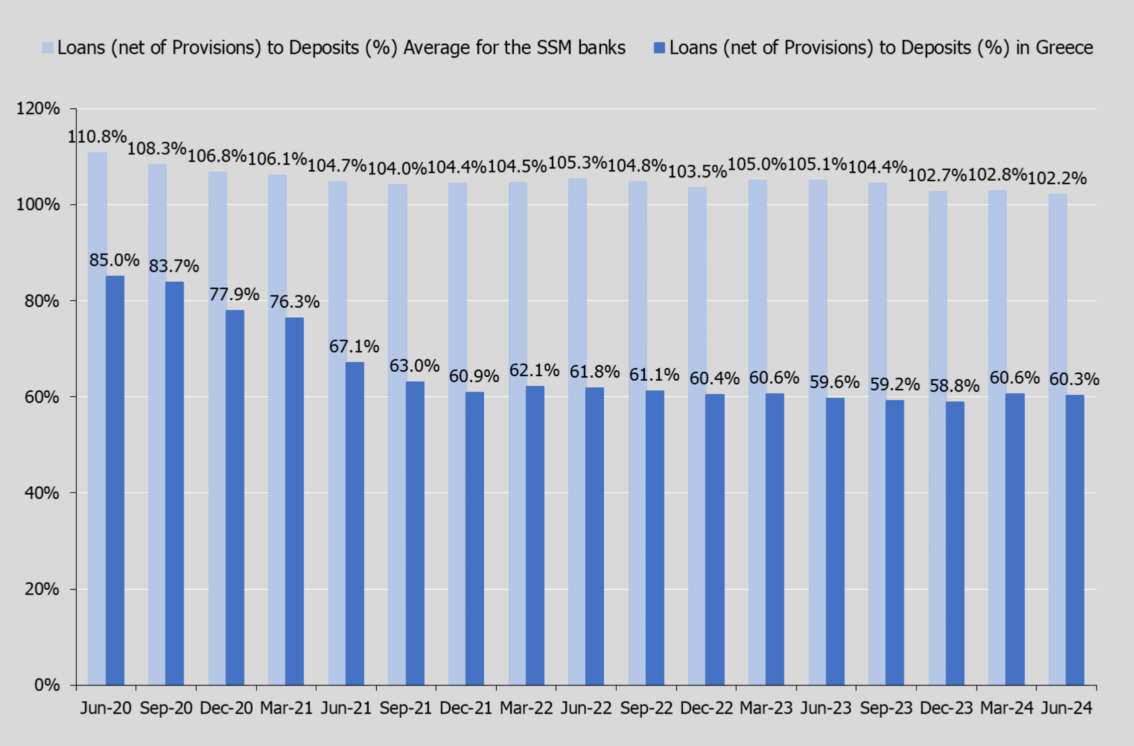
The balance of the loan portfolio (net of provisions) of Greek banking groups in Q2 2024 amounted to EUR 160.3 billion. The loan-to-deposit ratio for households and non-financial corporations increased (June 2024: 60.3%[54]), standing approximately 42 percentage points lower than the average for banks in the Single Supervisory Mechanism (June 2024: 102.2%,[55] see Chart III.19).

---

[52] Source: ECB Banking Supervision, Supervisory Banking Statistics.
[53] Source: European Banking Authority, EBA Risk Dashboard Q2 2024.
[54] Source: ECB Banking Supervision. Source: ECB Banking Supervision, Supervisory Banking Statistics for SIs, Second quarter 2024, September 2024.
[55] Source: ECB Banking Supervision. Source: ECB Banking Supervision, Supervisory Banking Statistics for SIs, Second quarter 2024, September 2024.

Chart III.19 Loans (net of provisions) to Households' and Non-Financial Corporations' Deposits

(%)



Source: Supervisory Banking Statistics.

Minimum requirements for own funds and eligible liabilities

Greek banks have implemented measures to ensure compliance with the Minimum Requirements for Own Funds and Eligible Liabilities (MREL) by the end of 2025. In this context, between January and September 2024, the significant Greek banks issued senior preferred bonds with a nominal value of EUR 3.75 billion, subordinated bonds (Tier 2) with a nominal value of EUR 2.45 billion and Additional Tier 1 instruments with a nominal value of EUR 0.3 billion. Debt issuance is expected to continue, not only due to MREL requirements, but also as an alternative source of funding given the reduced reliance on the Eurosystem.

2.3 MARKET RISK

The securities portfolio of Greek banks is mainly composed of Greek government bonds, standing at around 48% on a consolidated basis. Actually, the largest share (about 87%) of the Greek government bond portfolio held by credit institutions is composed of securities that are held to maturity and are valued at amortised cost, not at fair value. Thus, daily price changes do not affect their book values, while at the same time it should be noted that banks also apply interest rate risk hedging strategies. Foreign government bonds represent 30% of the bond portfolio, and their balances increased in the first half of 2024. A rise was also observed in supranational bonds, as well as in bank and corporate bonds.

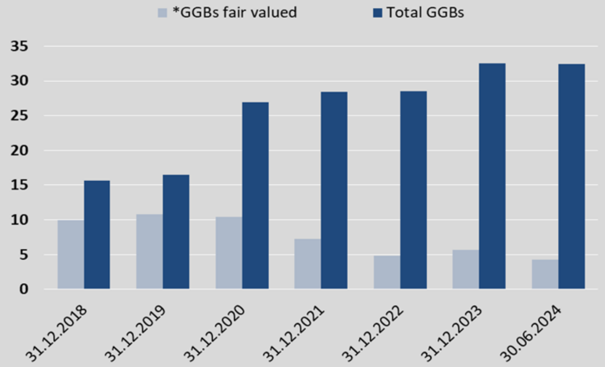
Exposure to Greek government bonds

The total amount of Greek government bonds (including Treasury bills) held by Greek banks in their portfolios in June 2024 amounted to EUR 32.5 billion[56] (10.1% of their assets), marginally down by approximately EUR 0.1 billion (-0.3%) compared to December 2023, but more than doubled in size relative to the pre-pandemic period (around EUR 15 billion in December 2019).

Specifically, the value of the portfolio of Greek government bonds held by the banking sector in fair-valued[57] portfolios reached EUR 4.2 billion in June 2024, compared with EUR 5.7 billion in December 2023 (see Table III.4 and Chart III.20), down by 25.1%. The value of this portfolio as a percentage of banks' total assets decreased marginally to 1.3%, from 1.8% in December 2023.

Chart III.20 Greek government bond portfolio

(EUR billion)



Source: Bank of Greece.
* GGBs fair valued: refers to Greek government bonds that are fair valued for accounting purposes (classified as: available-for-sale, fair value through P&L, held for trading purposes). As from 1.1.2018, due to the implementation of IFRS 9, it refers to GGBs fair valued through other comprehensive income, through P&L, and held for trading purposes.

It should be pointed out that in analysing the interest rate risk of the total Greek government bond portfolio, on the basis of its composition in June 2024, a potential increase in the general level of interest rates (risk-free rates) by 1 basis point (b.p.) (PV01) would result in a loss of EUR 26.5 million for all Greek banks, compared with a loss of EUR 26.4 million in December 2023. In the same vein, the effect of a potential increase in credit spreads by 1 b.p. (CS01) would lead to a loss of EUR 29.8 million in June 2024, compared with a loss of EUR 30 million in December 2023. However, it should be noted that the actual impact on banks' profits/capital would be limited to a loss of EUR 2 million and EUR 2.1 million respectively for the above-mentioned interest rate changes (PV01, CS01). This loss pertains only to the part of Greek government bonds held in fair valued portfolios (Fair value through Profit and Loss or through Other Comprehensive Income – OCI), for which any valuation changes are directly reflected in the income statement or capital.

[56] Data in the "Market Risk" section have a cut-off date of 30.06.2024 and are drawn from supervisory data on a consolidated basis submitted by Greek credit institutions.
[57] Based on IFRS 9, the assets classified in the following portfolios are fair-valued: Held For Trading – HFT, Fair Valued Through Profit and Loss – FVTPL, Mandatorily Through Fair Value – MTFV and Fair Valued Through Other Comprehensive Income – FVTOCI.

Table III.4 Banking sector investments					
(EUR million)	2021	2022	2023	June 2024	% Change Dec. 2023-June 2024
Total					
Greek government bonds	28,449.2	28,502.7	32,562.2	32,462.5	-0.3%
of which Treasury Bills	1,543.2	2,632.0	3,031.5	1,912.4	-36.9%
Foreign government bonds	14,986.3	15,239.7	18,159.9	20,208.6	11.3%
Supranational bonds	460.5	700.2	1,124.6	1,262.8	12.3%
Bank bonds	3,302.9	5,283.3	7,015.0	8,427.9	20.1%
Corporate bonds	2,828.5	3,550.9	3,461.8	4,142.4	19.7%
Other bonds	23.9	120.5	963.6	1,189.8	23.5%
Equities	585.6	693.8	822.5	903.1	9.8%
Mutual fund units/shares	156.6	351.0	500.8	547.6	9.3%
Participations	1,107.4	1,587.6	2,157.6	2,716.8	25.9%
Portfolios held at fair value					
Greek government bonds	7,245.0	4,786.4	5,664.1	4,243.2	-25.1%
of which Treasury Bills	1,543.2	2,472.8	2,952.0	1,505.9	-49.0%
Foreign Government bonds	6,944.4	3,265.7	3,456.6	4,326.0	25.2%
Supranational bonds	460.5	242.6	335.2	204.1	-39.1%
Bank bonds	1,937.9	875.0	663.1	602.5	-9.1%
Corporate Bonds	2,553.8	1,317.6	1,178.2	1,268.7	7.7%
Other bonds	23.9	0.0	30.7	28.6	-6.9%
Equities	585.6	693.8	822.5	903.1	9.8%
Mutual fund units/shares	156.6	351.0	500.8	547.6	9.3%

Source: Bank of Greece.

Exposure to foreign government bonds

The value of foreign government bonds held by banks increased by 11.3%, reaching EUR 20.2 billion as at June 2024. The aforementioned bonds mainly concern issues by countries of the European Union (EU) and the Group of Ten (G10) and represent approximately 30% of the bond portfolio held by banks (6.3% of their assets). The majority of these bonds (78.6%) are held to maturity and are valued at amortised cost.

Exposure to non-government bonds

In addition to government bonds, banks hold in their portfolios bonds issued by supranational organisations, bank bonds, corporate bonds and bonds issued by non-bank financial institutions.

Bank bonds amounted to EUR 8.4 billion in June 2024, up by 20.1% compared to December 2023. Furthermore, in June 2024, the value of corporate bonds held by banks rose from EUR 3.5 billion to EUR 4.1 billion, mainly due to new purchases. Specifically, the value of corporate bonds measured at fair value increased by 7.7% to EUR 1.3 billion, from EUR 1.2 billion in December 2023, representing 0.4% of the banking sector's total assets.

Exposure to equities, mutual funds and participating interests

The value of equity securities, mutual fund shares/units and participating interests held by the banking sector as a percentage of its total assets increased. Specifically, in June 2024 banks held equity securities, participating interests and mutual fund shares/units with a total value of EUR 4.2 billion, i.e. 1.1% of the banking sector's total assets, compared with EUR 3.5 billion at end-December 2023 (see Table III.4). The change is mainly due to an increase in the participating interest of a significant Greek bank in a foreign banking institution.

Exposure to foreign exchange risk

Banks' open foreign exchange position[58] amounted to EUR 642 million in June 2024, up by EUR 132 million compared to December 2023. Greek banks mainly have open foreign exchange positions in Swiss francs (CHF), amounting to EUR 250 million, in US dollars (USD), amounting to EUR 77 million, and in British pounds (GBP), amounting to EUR 82 million in June 2024. In addition, Greek banks are exposed to the local currencies of their subsidiaries' host countries, the foreign exchange risk of which is managed and hedged through positions in derivative products at the parent bank level. Compared to December 2023, the bank's exposure in US dollars (USD) decreased by EUR 25 million, while exposure to Swiss francs (CHF) increased by EUR 206 million and to British pounds (GBP) by EUR 32 million.

Interest rate sensitivity of debt securities and derivatives

An interest rate risk analysis of the banking sector's securities and derivatives portfolio shows that a 1 b.p. rise in interest rates (PV01) for fair-valued portfolios, whose fair value amounts to EUR 11 billion as at June 2024, would cause a loss of EUR 10.2 million at Greek banking system level. Regarding portfolios of securities and derivatives as a whole, i.e. assets valued both at fair value and at amortised cost, an increase of 1 b.p. in interest rates implies losses amounting to EUR 29.3 million as at June 2024. Likewise, the effect of a rise in credit spreads by 1 b.p. (CS01) would result in a loss of EUR 4.5 million for fair-valued portfolios, while for total portfolios the potential loss would amount to EUR 43.6 million. Banks hold a portfolio of interest rate derivatives for hedging purposes, mostly simple in structure, which are typically cleared through central counterparties or involve bilateral transactions governed by standardised counterparty credit risk collateral exchange agreements, to mitigate the interest rate risk assumed.

[58] For the calculation at system level, opposite positions in the same currency in different credit institutions are not netted. In addition, for the calculation of the open foreign exchange position, the larger of the buy (long) and sell (short) positions per currency is considered.

Capital requirements for market risk

Total capital requirements for market risk increased to EUR 260.1 million in June 2024 (2.1% of total capital requirements), from EUR 246.9 million in December 2023. This increase is mainly attributable to lower capital requirements for interest rate risk. Capital requirements for market risk concern positions allocated as follows: 54% in trading debt instruments, 16% in equity securities, 23% in foreign exchange and 7% in commodities. Capital requirements to cover credit valuation adjustment (CVA) risk for the entire banking sector amounted to EUR 41 million in June 2024, compared with EUR 39 million in December 2023.

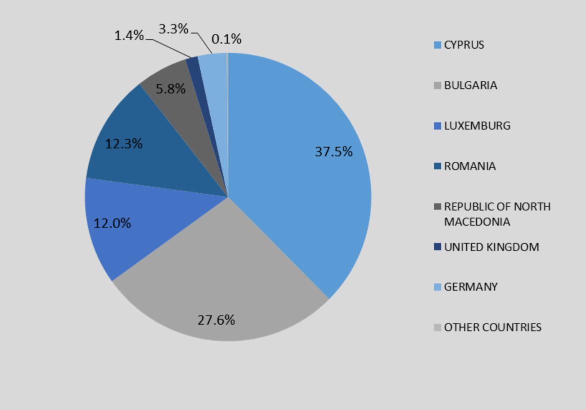
2.4 INTERNATIONAL ACTIVITY

In the first half of 2024, the presence of Greek banking groups abroad remained unchanged. However, in August Eurobank further increased its participation in Hellenic Bank in Cyprus, with its total percentage reaching 56% following the completion of the takeover bid submitted in June.[59]

Greek banks' assets abroad stood at EUR 37.7 billion in June 2024, up by 8.2% from December 2023, while international activities increased to 11.8% of the banking sector's total assets on a consolidated basis in June 2024, from 11.0% in December 2023.[60]

Broken down by region, South-East Europe (SE Europe)[61] accounts for 83.1% of the total assets of international activities, mostly located in Cyprus and Bulgaria (see Chart III.21). Financial centres, namely Luxembourg, the United Kingdom and Germany, represent 16.8% thereof, led by Luxembourg. The share of SE Europe (where the highest number of business units and staff are concentrated) in Greek banks' deposits abroad is even larger (88.8%, see Table III.5).

Chart III.21 Distribution of Greek banking groups' assets abroad (June 2024, percentage %)



Source: Bank of Greece.

The profitability of bank subsidiaries and branches abroad increased significantly to EUR 387 million in the first half of 2024, from EUR 320 million in the first half of 2023, accounting for 12.7% of banking groups' pre-tax profits on a consolidated basis. Subsidiaries in Cyprus and Bulgaria made a large contribution to profitability.

Loans in arrears[62] rose to EUR 400 million in June 2024, from EUR 440 million in December 2023 (down by 8.9%), representing 2.1% of the loan book. More specifically, the ratio of loans

---

[59] . https://www.eurobank.gr/en/group/grafeio-tupou/etairiki-anakoinosi-07-08-24.

[60] According to supervisory data submitted on the activity of credit institutions abroad through branches and subsidiaries pursuant to Bank of Greece Governor's Act 2651/20.01.2012. The analysis in this section concerns only the banking subsidiaries and branches abroad.

[61] The activity of Greek banks in SE Europe concerns the following countries: Bulgaria, Republic of North Macedonia, Cyprus and Romania.

[62] Defined as loans more than 90 days past due.

in arrears to total loans was 1.7% for corporate loans, 3.6% for consumer loans and 2.0% for mortgage loans. Mortgage loans in arrears declined by 35.9% and consumer loans in arrears by 0.3%, while corporate loans in arrears increased by 7.8% on a comparable basis. The provisioning coverage ratio of loans in arrears rose further to 108% (December 2023: 98%).

In terms of liquidity, the loan-to-deposit ratio remained unchanged at 70.3%. More specifically, both deposits and lending grew by 5.2% compared to December 2023.

Table III.5 Key figures of Greek banking groups abroad (June 2024)

(amounts in EUR million)

Country	Assets	Gross Loans	Loans in arrears	% of loans in arrears	Deposits	Number of business units	Number of employees
SE Europe	**31,371**	**15,975**	**395**	**2.5%**	**24,598**	**435**	**7,701**
Bulgaria	10,402	7,060	212	3.0%	8,338	223	3,780
Republic of North Macedonia	2,184	1,576	54	3.5%	1,643	59	964
Cyprus	14,155	3,990	71	1.8%	11,011	22	1,009
Romania	4,630	3,349	57	1.7%	3,606	131	1,948
Financial centres	**6,323**	**3,497**	**6**	**0.2%**	**3,115**	**5**	**223**
Germany	1,247	972	1	0.1%	86	1	16
United Kingdom	528	405	4	1.1%	426	1	73
Luxemburg	4,547	2,120	0	0.0%	2,603	3	134
Other countries[1]	**46**	**0**	**0**	**0.0%**	**0**	**0**	**0**
TOTAL	**37,740**	**19,472**	**400**	**2.1%**	**27,713**	**440**	**7,924**

Source: Bank of Greece

[1] Other countries include Egypt.

The outlook for international activities in the current juncture is affected by heightened geopolitical risks and the slowdown in economic activity in several European countries. It should be mentioned, however, that the international activities of Greek banking groups help diversify their sources of income and mitigate concentration risk.

3. RESILIENCE

3.1 PROFITABILITY

In the first half of 2024, Greek banks recorded profits after tax and discontinued operations amounting to EUR 2.3 billion, compared with profits of EUR 1.9 billion in the first half of 2023 (see Table III.6). Underlying this development was most importantly an increase in net interest income.

Table III.6 Financial results of the Greek banking sector

(in EUR million) Μέσα στον πίνακα: οι τελείες πρέπει να γίνουν υποδιαστολές και αντίστροφα.

	First half 2023	First half 2024	Change (%)
Operating income	**5,213**	**5,778**	**10.8**
Net interest income	3,987	4,440	11.4
- Interest income	6,309	8,073	28.0
- Interest expenses	-2,322	-3,633	56.5
Net non-interest income	1,226	1,338	9.1
- Net fee income	857	993	15.9
- Trading income	163	192	17.8
- Other operating results	206	152	-26.1
Operating costs	**-1,852**	**-1,929**	**4.1**
Staff costs	-883	-988	11.9
Administrative costs	-671	-622	-7.4
Depreciation	-298	-319	6.8
Net income (operating income less costs)	**3,361**	**3,849**	**14.5**
Impairment charges	-824	-595	-27.8
Other impairment losses	-162	-138	-14.7
Non-recurring profits/losses	-2	-60	>100
Pre-tax profits (+)/losses (-)	**2,372**	**3,057**	**28.9**
Taxes	-530	-739	39.4
Profits(+)/Losses(-) from discontinued operations	15	35	>100
After tax profits (+)/losses (-)	**1,857**	**2,353**	26.7

Source: Financial statements for the four significant institutions (SIs) and supervisory data for the less significant institutions (LSIs).
* The comparative financial information has been restated as a result of reclassifications in the financial statements of the credit institutions.

More specifically, in the first half of 2024, the operating income of Greek banking groups grew by 10.8% compared to the first half of 2023. Net interest income rose by 11.4%. Interest income benefited from the significant increase in the key interest rates of the European Central Bank from July 2022 to September 2023, given that the bulk of the loan portfolio carries variable interest rates. At the same time, the rise in interest expenses is due to a slight increase in the cost of (mainly term) deposits; higher interest expenses for derivative products; and a rise in the cost of funding through debt issuance. Consequently, the net interest margin stood at 2.8%, up from the corresponding period in 2023 (2.5%), remaining higher than the corresponding European average for banks in the Single Supervisory Mechanism.

Net fee and commission income increased by 15.9%, supported by fees from portfolio management and asset management. As a result, core operating income (i.e. net interest income and net fee and commission income) grew by 12.2%. Trading income increased in the first half of 2024, due to profits from financial transactions in Greek government bonds as well as profits from derivative and hedging products. Additionally, the reduction in other operating results is driven by non-recurring costs recognised in the first half of 2024.

Operating costs increased by 4.1%, mainly due to an increase in staff costs as a result of inflation, while administrative costs decreased.[63] The faster increase in operating income than in operatingcosts led to an improvement in Greek banks' cost-to-income ratio to 33.4% in the first half of 2024, compared with 35,5% in the first half of 2023, which remains significantly lower than the European average (54.2%, see Table III.7).

Table III.7 Profitability indicators

(%) Οι υποδιαστολές να γίνουν τελείες στο διάγραμμα.

	Greece		Banking Union[1]
	First half 2023	First half 2024	First half 2024
Net interest margin	2.5	2.8	1.6
Operating costs/Total assets	1.2	1.2	0.6
Cost-to-income ratio	35.5	33.4	54.2
Cost of credit risk	1.1	0.7	0.5
Return on Assets (RoA)[2,3]	1.2	1.5	0.7
Return on Equity (RoE)[2, 3]	12.5	13.8	10.1

Sources: Financial statements for the four significant institutions (SIs) and supervisory data for the less significant institutions (LSIs), Single Supervisory Mechanism (SSM) - Supervisory Banking Statistics.

[1] Banking groups directly supervised by the ECB.

[2] Indicators are calculated using total assets at the end of the corresponding period.

[3] RoA and RoE indicators are calculated using profits/losses after tax and discontinued operations.

The cost of credit risk[64] decreased significantly in the first half of 2024 to 0.7% of net loans. In particular, impairment charges stood at EUR 595 million, compared with EUR 824 million in the first half of 2023.

As a result, Greek banking groups recorded profits after tax and discontinued operations, and the RoA and RoE ratios came to 1.5% and 13.8% respectively.

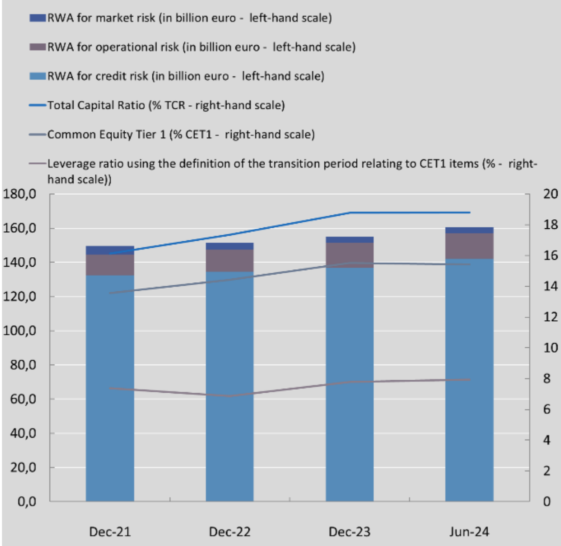
Regarding the profitability outlook, some of the factors that will affect it are: a) the impact on net interest income of the reduction in ECB key interest rates that began in June 2024 and is expected to continue; b) the achievement of banks' operational targets for new loan disbursements to non-financial corporations and households, the diversification of their income sources and the rationalisation of operating costs; c) developments in the financial situation of households and businesses that may affect banks' credit risk costs; and d) the contribution of the expansion of the international activities of certain banking groups.

[63] The reduction in administrative costs is partially due to the non-payment of the regular annual contribution by credit institutions to the Single Resolution Fund for 2024.

[64] The cost of credit risk is the ratio of credit risk provisions to loans after accumulated provisions.

3.2 CAPITAL ADEQUACY

Chart III.22 Capital adequacy and leverage indicators, and breakdown of Greek banking groups' RWAs (December 2021 – June 2024)



Source: Bank of Greece.

The capital adequacy of the Greek banking sector remained virtually unchanged in the first half of 2024, as an increase in regulatory capital offset a rise in risk-weighted assets.

In particular, the Common Equity Tier 1 ratio (CET1 ratio) on a consolidated basis decreased marginally to 15.4% in June 2024, from 15.5% in December 2023 (see Chart III.22), and the Total Capital Ratio (TCR) remained unchanged at 18.8%. These indicators are below the European Union averages (June 2024: CET1 15.8% and TCR 19.9%).[65]

In more detail, in June 2024 Greek banks' prudential own funds grew by 3.7% and reached EUR 30.2 billion, as profits after tax (i.e. internal capital generation) and discontinued operations, combined with capital enhancement through bond issues accounted as equity, largely offset the negative impact from the gradual amortisation of Deferred Tax Credits (DTCs). Nonetheless, the quality of Greek banks' prudential own funds remains low: in June 2024, DTCs amounted to EUR 12.5 billion, representing 41% of total prudential own funds (from 44% in December 2023) and 50% of total Common Equity Tier 1 capital (CET1 capital) (from 53% in December 2023).

The main capital enhancement actions during the first half of 2024 were the following:

- in January 2024, Piraeus Bank issued a Tier 2 instrument with a nominal value of EUR 500 million (while also redeeming a similar bond with a nominal value of EUR 400 million, reducing its prudential own funds by the same amount);
- in January 2024, Eurobank issued a Tier 2 instrument with a nominal value of EUR 300 million;
- in March 2024, National Bank of Greece issued a Tier 2 instrument with a nominal value of EUR 500 million (while also redeeming a similar bond with a nominal value of EUR 400 million, reducing its prudential own funds by the same amount); and
- in June 2024, Alpha Bank issued a Tier 2 instrument with a nominal value of EUR 500 million.

Risk-weighted assets increased by 3.5% in June 2024 compared to December 2023. Specifically, credit risk-weighted assets rose by 3.9%, mainly due to credit expansion. Conversely, the completion of the Frontier II traditional securitisation by National Bank of Greece, which came under the "Hercules" scheme, had a downward impact on its RWAs. Credit risk-weighted assets account for 88.5% of total risk-weighted assets, which is largely explained by Greek banks' business

[65] Source: Single Supervisory Mechanism – SSM.

model, focusing on traditional banking and mainly lending activities. Operational risk-weighted assets constitute the second largest part of total risk-weighted assets (9.1%). Finally, market risk-weighted assets increased by 5.2% in June 2024 compared to December 2023 and make up only 2.4% of total risk-weighted assets.

The leverage ratio[66] improved slightly to 7.9% in June 2024, from 7.8% in December 2023, due to the strengthening of Tier I Capital (up by EUR 679 million) and not due to the denominator of the ratio, as assets on a consolidated basis grew by EUR 2.5 billion, calculated in accordance with the leverage ratio methodology. It should be noted that the leverage ratio of the Greek banking system by far exceeds both the supervisory minimum (3%) and the European average (5.8%).

The issuances of an Additional Tier 1 (AT1) instrument with a nominal value of EUR 300 million by Alpha Bank and of a Tier 2 instrument with a nominal value of EUR 650 million by Piraeus Bank in September 2024, as well as the completion of the planned share capital increase of EUR 735 million[67] by Attica Bank after the merger with Pancreta Bank, will positively impact the capital adequacy of Greek banking groups.

Some of the factors affecting the outlook for Greek banks' capital adequacy include the following: (a) possible constraints on internal capital generation capacity in an environment of reduced key interest rates; (b) the implementation of capital enhancement actions (e.g. synthetic securitisations, share capital increases for the less significant banks) and the cost of issuing capital instruments (Additional Tier 1, Tier 2) to meet regulatory capital requirements, including the cost of issuing MREL-eligible bonds; (c) portfolio quality and its impact on risk-weighted assets; (d) a prudent policy of distributing profits/dividends to shareholders based on reported profitability; and (e) the evolution of new loan disbursements to households and non-financial corporations.

[66] Defined as the ratio of Tier 1 capital (using the transitional definition of Tier 1 capital) to the Leverage Exposure Measure, as calculated according to the Capital Requirements Regulation (Regulation (EU) No 575/2013 – CRR) and Regulation (EU) Regulation (EU) 2019/876.

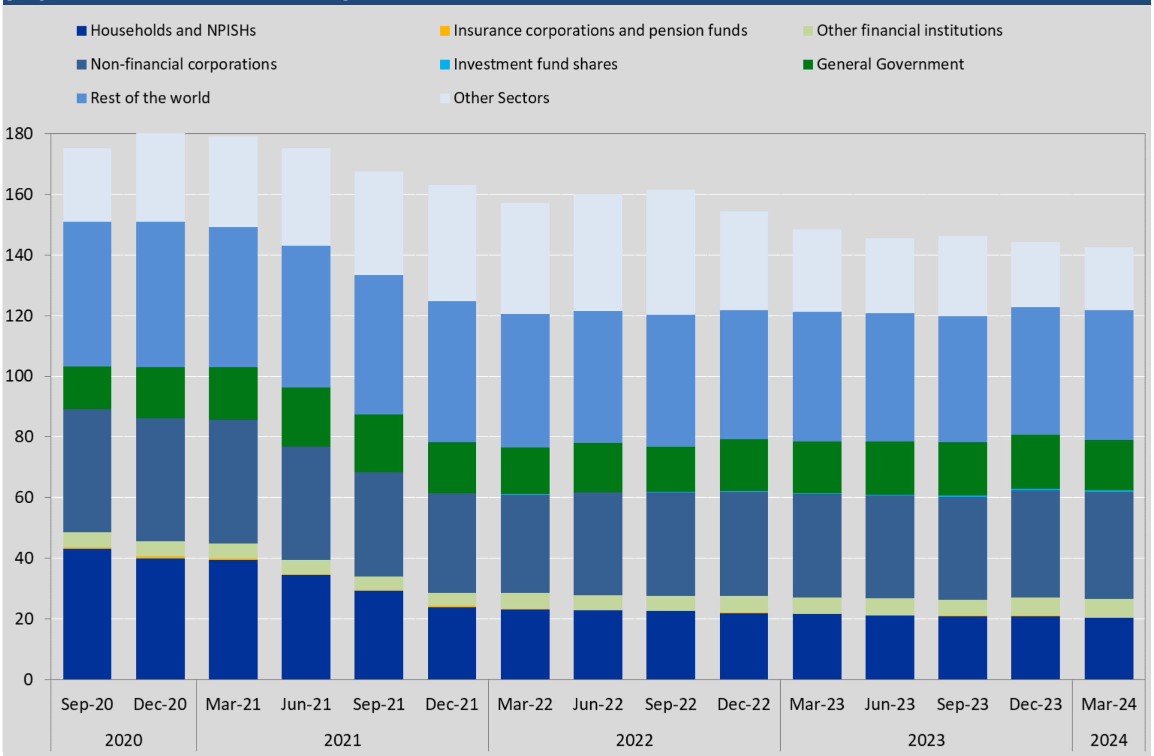
[67] This increase consists of EUR 672.2 million in cash payments for existing shareholders and EUR 62.9 million in issued warrants pursuant to the decisions of the recent meeting of the General Assembly of Shareholders of Attica Bank.

4. INTERCONNECTEDNESS WITH OTHER SECTORS OF THE FINANCIAL SYSTEM

4.1 DIRECT INTERCONNECTEDNESS OF MFIs WITH OTHER SECTORS[68]

The total claims of Greek Monetary Financial Institutions (MFIs)[69] other than the Bank of Greece on other resident and non-resident sectors as a percentage of GDP decreased during 2023 and the first quarter of 2024. This was due to an increase in nominal GDP and a decrease in financial assets, i.e. mainly a reduction of claims on General Government and other sectors[70] and, to a much lesser extent, credit to households and non-profit institutions serving households (NPISHs). As a result, the value of MFI assets stood at 142.4% of GDP in March 2024 (see Chart III.23), compared with 144.4% in December 2023 and 154.5% in December 2022.

Chart III.23 Financial Assets of Greek Monetary Financial Institutions (MFI) by issuing sector (% of GDP) (September 2020 – March 2024)



Source: Bank of Greece.

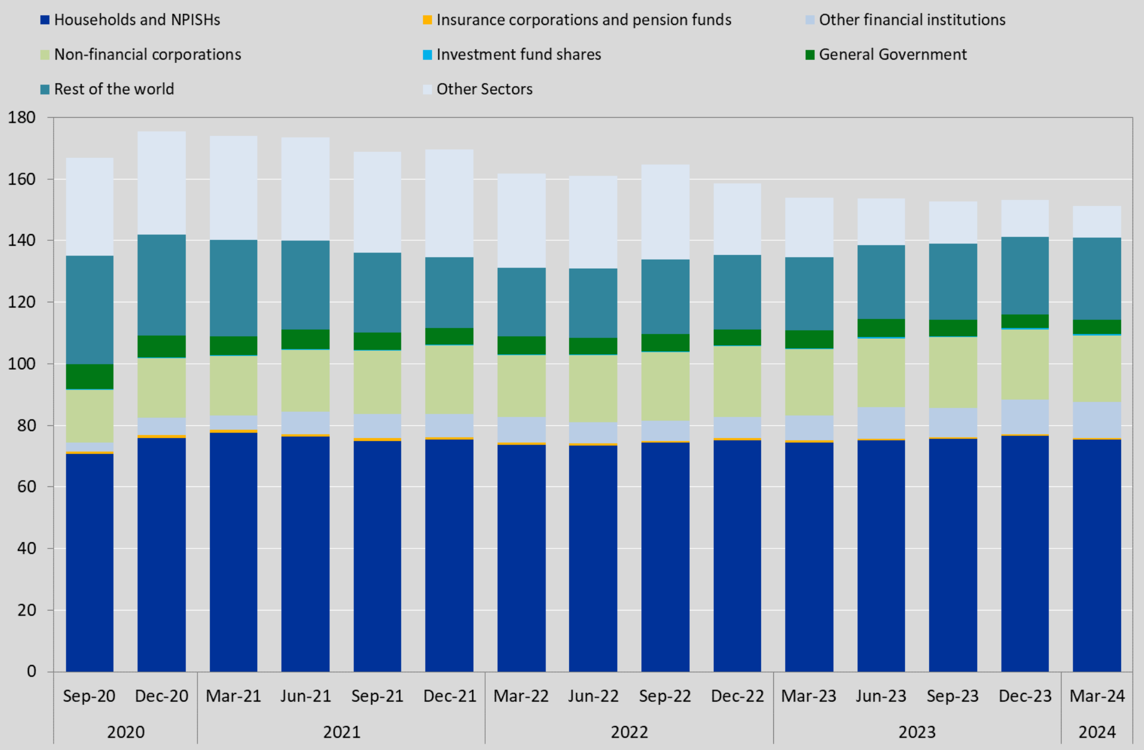
More specifically, the distribution of MFI assets reflects a decrease of claims on General Government to 16.5% of GDP in March 2024, from 17.8% of GDP in December 2023; a drop of claims on other sectors to 20.7% of GDP, from 21.5% of GDP; and a smaller decrease of claims on households and NPISHs to 20.4% of GDP, from 21.0%. It should be noted that claims on non-financial corporations stood at 35.4% of GDP in March of 2024, from 35.5% in December 2023. On the other hand, MFI claims on other Financial Institutions increased marginally to 6.1% of

[68] It is noted that the analysis of interconnectedness between different economic actors and markets helps to identify potential systemic vulnerabilities arising from the interconnections within the financial sector itself or between the financial and non-financial sectors.
[69] The MFI sector comprises in general Central Banks, Credit Institutions (CIs), Electronic Money Institutions (EMIs), Other Financial Institutions accepting deposits and Money Market Funds (MMFs). The entities in this section exclude the Bank of Greece.
[70] Other sectors include technical insurance reserves, unlisted stocks and shares, deposits with the ECB and financial derivatives. The reduction observed in 2023 and the first quarter of 2024 is mainly due to a decrease in deposits with the ECB.

GDP in March 2024, from 6% in December 2023. Finally, MFI claims on the rest of the world[71] remained significant and stood at 42.6% of GDP in March 2024, from 42.1% of GDP in December 2023.

On the other hand, MFI liabilities as a percentage of GDP fell to 151.2% in March 2024, from 153.2% in December 2023 (see Chart III.24).

Chart III.24 Financial Liabilities of Greek Monetary Financial Institutions (MFIs) by holding sector (% of GDP) (September 2020 – March 2024)



Source: Bank of Greece.

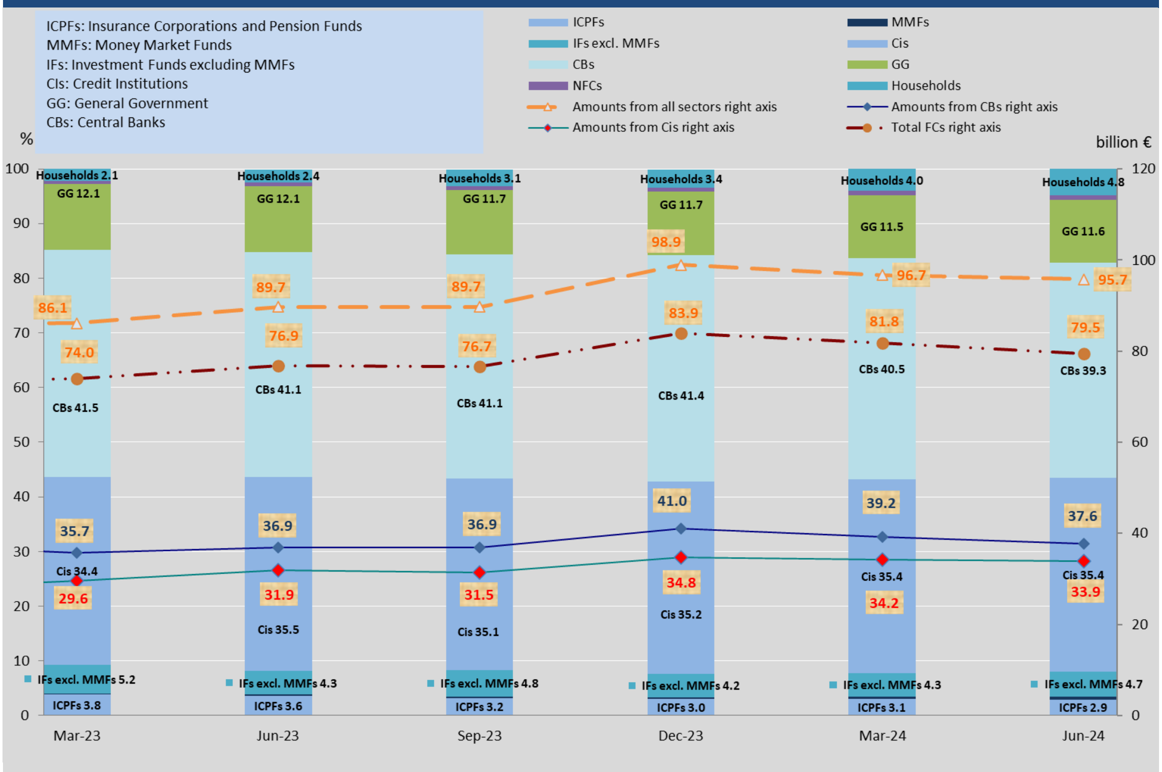
The evolution of MFI liabilities as a percentage of GDP during 2023 and the first quarter of 2024 is due to both an increase in nominal GDP and a significant reduction in liabilities to other sectors, as higher Eurosystem funding costs and the change in funding terms in TLTRO III led many MFIs to make voluntarily or early partial repayments of the funds borrowed through TLTRO III operations in 2023, while repayments continue up to the end of 2024. In addition, there was an increase in liabilities to households and NPISHs, to 75.5% of GDP in March 2024, from 76.6% of GDP in December 2023. On the other hand, liabilities to non-financial corporations fell to 21.6% of GDP in March 2024, from 22.9% of GDP in December 2023. During this period, households and non-financial corporations withdrew deposits from MFIs in order to gradually repay their accumulated liabilities. It should be noted that MFI liabilities to insurance corporations and pension funds (ICPFs) and investment funds (IFs) are close to just 0.5% of GDP.

[71] Rest of the world residents comprise natural/legal persons who do not reside/have their registered office in Greece, with a further breakdown into residents of euro area countries other than Greece and residents of other countries.

4.2 INDIRECT INTERCONNECTEDNESS OF BANKS WITH OTHER ENTITIES OF THE FINANCIAL SECTOR[72]

The holdings of Greek General Government securities by all euro area sectors decreased to EUR 95.7 billion in June 2024, from EUR 98.9 billion in December 2023. More specifically, Greek General Government securities holdings by euro area CIs dropped to EUR 33.9 billion in June 2024, from EUR 34.8 billion in December 2023. Underlying this development was partly an increase in alternative investments, such as loans to non-bank financial institutions and non-financial corporations. In addition, euro area central banks' (CBs') holdings of securities issued by the General Government in Greece decreased. The holdings of these securities amounted to EUR 37.6 billion in March 2024, from EUR 41 billion in December 2023.

Chart III.25 Holdings of securities issued by the General Government in Greece: amounts and share (%) by sector (March 2023 – June 2024)



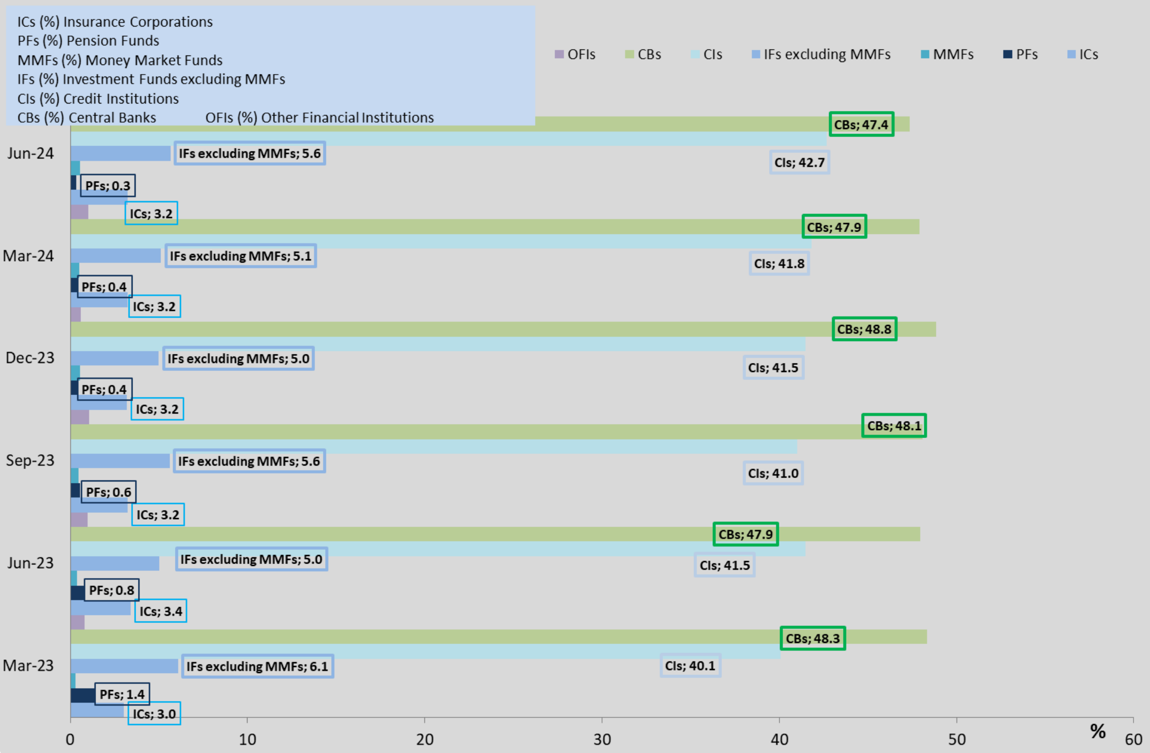
Source: ECB, Securities Holding Statistics (SHS) database.

Greek General Government securities holdings by insurance corporations and pension funds (ICPFs) decreased to EUR 2.9 billion in June 2024 (December 2023: EUR 3 billion). It should be noted that the amounts of holdings by euro area money market funds (MMFs) and investment funds (IFs) remain at low levels (see Chart III. 25).

[72] The analysis of the indirect interconnectedness of banks with other entities of the financial sector investigates whether – alongside the banking sector – there are changes in other sectors that hold securities issued by the General Government in Greece (i.e. Greek government bonds and T-Bills, as well as guarantees). In this context, the ECB's Securities Holding Statistics (SHSS) database provides information on securities and shares held by euro area investors (at country level), broken down by instrument type, issuing country and issuer sector.

Regarding the percentage composition of holdings of securities issued by the General Government in Greece per category[73] of financial corporations (FCs) of the euro area, the share of credit institutions grew to 42.7% in June 2024, from 41.5% at the end of 2023. Underlying this development were changes in the composition of the balance sheets of major international banks, which now provide services in the euro area through their subsidiaries.[74] On the other hand, the percentage of securities held by central banks decreased to 47.4% in June 2024, from 48.8% at the end of 2023, while the percentage of securities held by insurance corporations remained stable during the first half of 2024 and amounted to 3.2% in June 2024.

Chart III.26 Percentage composition of euro area financial corporations' holdings of securities issued by the General Government in Greece (March 2023 – June 2024)



Source: ECB, Securities Holding Statistics database SHS.

For the other institutions of the financial sector,[75] the exposure to securities issued by the General Government is significantly lower (Chart III.26).

---

[73] The SHS time series used in the analysis divides Financial Corporations (FCs) into credit institutions (CIs), Money Market Funds (MMFs), investment funds other than money market funds (IFs), Central Banks (CBs) financial corporations, vehicles engaging in securitisation (financial vehicle corporations – FVCs), insurance corporations (ICs), Pension Funds (PFs) and Other Financial Institutions (OFIs).

[74] After the United Kingdom (UK) left the EU, UK-based international banks could no longer provide services in the EU through "passporting", i.e. the right to serve customers across the EU from their headquarters. For this reason, international banks relocated a significant part of their activities from London to financial centres in the euro area, through the establishment of new legal entities and the reorganisation of their corporate structures. It should be noted that Directive (EU) 2024/1619 (CRD VI) harmonises the prudential requirements on the provision of banking services to EEA customers and counterparties by third-country credit institutions. As a result, certain cross-border banking services will be substantially restricted, and third-country credit institutions will need to establish branches or subsidiaries in the EEA.

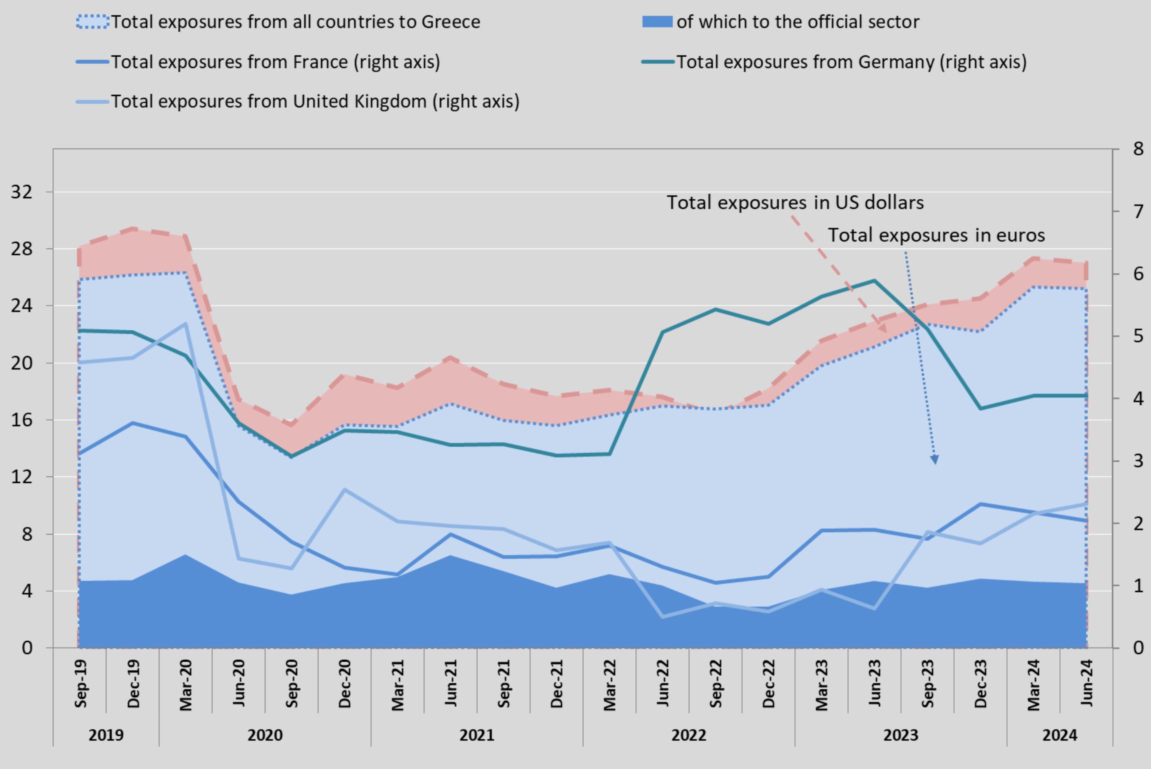
[75] Money Market Funds (MMFs), Pension Funds (PFs), Investment Funds (IFs) and Other Financial Institutions (OFIs). In general, market participants perceive reserves held by the central bank as carrying greater liquidity benefits than government debt holdings because they can be used to settle payments or meet margin calls at par.

4.3 EXPOSURES OF GREEK BANKS ABROAD AND EXPOSURES OF FOREIGN BANKS TO GREECE

The consolidated total exposures from all countries to Greece amounted to EUR 25.2 billion in June 2024, up by 13.7% compared to December 2023 (December 2023: EUR 22.2 billion).[76] During the fourth quarter of 2023 and the first quarter of 2024, a significant increase in bank credit was observed, i.e. a rise in the provision of loans, as well as in securities holdings.[77] However, total exposures from all countries to the official sector in Greece[78] decreased during the first half of 2024 to EUR 4.5 billion in June 2024, from EUR 4.9 billion in December 2023 (see Chart III.27).

Chart III.27 Total exposures of banks from all countries to Greece on a guarantor basis (September 2019 – June 2024)

(EUR billion unless otherwise indicated)



Source: BIS database, Consolidated Banking Statistics.

The reduction in holdings of securities issued by the official sector is partly due to increased alternative investments, such as loans to non-bank financial institutions and non-financial corporations. The reduction in holdings of securities by credit institutions increased the availability of government securities, part of which was absorbed by new investors from third countries as well as by euro area households.[79]

[76] The corresponding increase in US dollars was 10%, due to the strengthening of the dollar in foreign exchange markets during the first half of 2024.

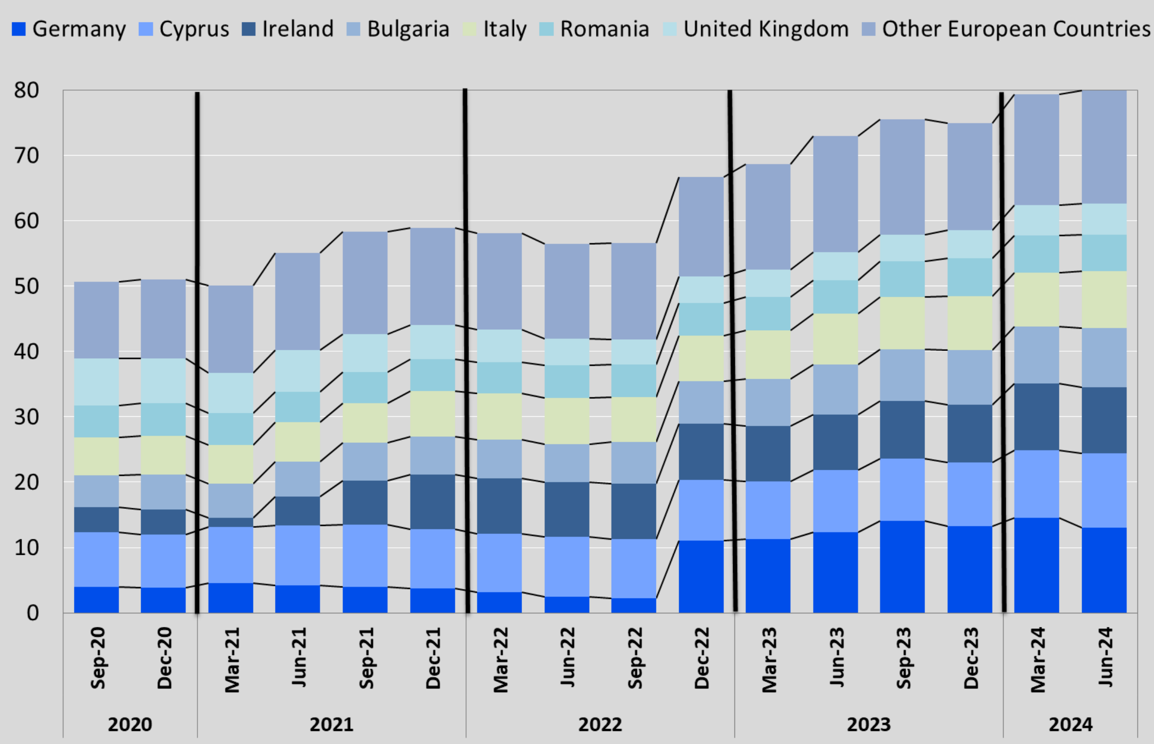
[77] Statistical release: BIS international banking statistics and global liquidity indicators at end-March 2024; Statistical release: BIS international banking statistics and global liquidity indicators at end-December 2023

[78] Official Sector: Bank for International Settlements (BIS) classification that is used in Consolidated Banking Statistics (CBS) and refers collectively to general government, central banks and international organisations.

[79] Financial Stability Review, May 2024; Who buys bonds now? How markets deal with a smaller Eurosystem balance sheet.

Regarding the exposures of Greek banks abroad, there was an increase in the exposures of Greek banks to Europe,[80] which reached EUR 79.9 billion in June 2024, from EUR 75 billion at end-2023. In particular, the first half of 2024 saw a significant rise in exposures to Cyprus to EUR 11.4 billion in June 2024, from EUR 9.8 billion in December 2023,[81] and to Ireland to EUR 10.1 billion in June 2024, from EUR 8.8 billion in December 2023. A smaller increase was observed in Bulgaria, which reached EUR 9 billion in June 2024, from EUR 8.4 billion in December 2023, and to Italy to EUR 8.8 billion in June 2024, from EUR 8.2 billion in December 2023. On the other hand, there was a decrease in exposures to Germany,[82] which reached EUR 13 billion in June 2024, from EUR 13.3 billion in December 2023, and to Romania, to EUR 5.5 billion in June 2024, from EUR 5.7 billion in December 2023 (see Chart III.28).

Chart III.28 Evolution of exposures of Greek banks to Europe (September 2020 – June 2024)
(EUR billion)



Source: BIS database, Consolidated Banking Statistics.

[80] In addition to EEA countries, the following countries are included: Albania, Belarus, Republic of North Macedonia, Moldova, Montenegro, Russia, Serbia, Turkey, Ukraine, Switzerland (including the Bank for International Settlements) and the United Kingdom.
[81] This fact is mainly due to the acquisition of Hellenic Bank Public Company Limited by Eurobank. The initial announcement was made on 4.06.2024 and the acquisition was completed on 7.08.2024.
[82] Exposures to Germany also include exposures to the ECB. It should be noted that the ECB's deposit facility rate was raised from 2% on 21.12.2022 to 4% on 20.09.2023, before being cut to 3.5% on 18.09.2024.

IV. MACROPRUDENTIAL POLICY

1. SETTING THE COUNTERCYCLICAL CAPITAL BUFFER RATE

1.1 METHODOLOGY FOR THE APPLICATION OF THE COUNTERCYCLICAL CAPITAL BUFFER IN GREECE

The Bank of Greece, in accordance with Executive Committee Act 235/1/07.10.2024, assesses the intensity of cyclical systemic risks and the appropriateness of the countercyclical capital buffer (CCyB) rate for Greece on a quarterly basis and sets or adjusts it, if necessary. The CCyB aims to address the procyclicality of credit growth and leverage, i.e. to ensure an appropriate level of credit growth and leverage in both the upward and the downward phase of the economic and financial cycle. The CCyB rate ranges from 0% to 2.5%, calibrated in steps of 0.25 percentage points or multiples of 0.25 percentage points.[83] The CCyB consists of Common Equity Tier 1 (CET1) capital and is expressed as a percentage of the total risk exposure amount of institutions that are exposed to credit risk.[84]

The activation of the CCyB rate commences in a standard risk environment, i.e. when cyclical systemic risks are neither subdued nor elevated. It thus allows institutions to absorb potential losses and maintain a smooth flow of credit to the real economy in the event of adverse shocks (see Chart IV.1). The positive neutral rate of the countercyclical capital buffer (PN CCyB) is gradually built up towards achieving the target rate, the latter being decided by expert judgment of the Bank of Greece. Under Article 127(5) of Law 4261/2014, there is a maximum 12-month implementation lag between the announcement of the decision to increase the CCyB rate and the implementation by institutions of the higher capital requirements. The PN CCyB was adopted by means of Executive Committee Act 235/1/07.10.2024, which also set the target rate for the positive neutral rate of the countercyclical capital buffer (PN CCyB target rate) in Greece at 0.5%.

During the upward phase of the economic cycle, setting the CCyB rate takes into account the PN CCyB target rate. If the Bank of Greece's assessment of cyclical systemic risks points to an accumulation of cyclical systemic risks, the Bank of Greece has the discretion to decide whether or not to increase the CCyB rate above the PN CCyB target rate, with a view to preventing or mitigating the build-up of cyclical systemic risks and excessive credit expansion and leverage.

Conversely, during the downward phase of the economic cycle or in the event of shocks, a partial or full release of the CCyB may encourage the supply of credit, thereby contributing to the smooth financing of the real economy. The partial or full release of the CCyB takes immediate effect as soon as it is announced.

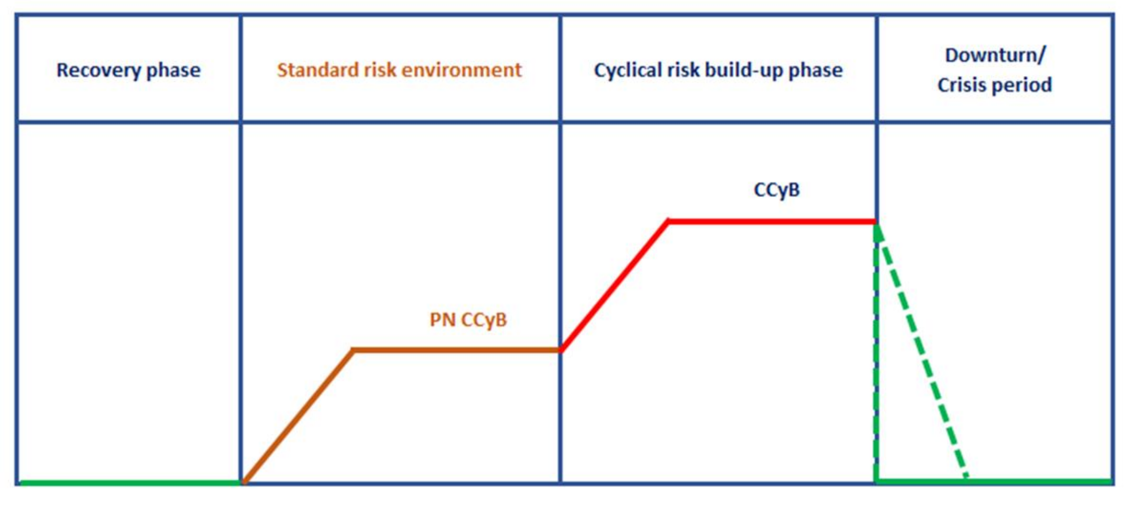
During the phase in which the economy or the financial system recovers from severe endogenous or exogenous shocks, or in the wake of a systemic crisis, the CCyB rate is set at zero to encourage the supply of credit, thereby contributing to the smooth flow of financing to the real economy.

[83] The Bank of Greece, as national designated authority, may set the CCyB rate in excess of 2.5%, where justified on the basis of the considerations set out in Article 130 of Law 4261/2014 with regard to the calculation of the institution-specific countercyclical capital buffer rate.

[84] The total risk exposure amount is calculated in accordance with Article 92(3) of Regulation (EU) No 575/2013.

The CCyB rate remains at zero until the intensity of cyclical systemic risks is assessed to be at a standard level.

Chart IV.1 Stylised representation of the build-up and release of the countercyclical capital buffer depending on the intensity of cyclical systemic risks across the four phases of the economic and financial cycles



Source: Bank of Greece.

1.2 ASSESSMENT OF CYCLICAL SYSTEMIC RISKS

The assessment of cyclical systemic risks takes into consideration, among other things, the "standardised credit-to-GDP gap", as defined in Recommendation ESRB/2014/1. This indicator reflects the deviation of the ratio of credit to GDP from its long-term trend. In more detail, the credit-to-GDP ratio is initially calculated as the sum of short-term and long-term debt securities and loans (i.e. credit), as reported in the financial liabilities of the private non-financial sector, to the sum of the figures of the last four quarterly observations of GDP (in nominal terms, non-seasonally adjusted). Subsequently, the long-term trend of the credit-to-GDP ratio is calculated by applying the Hodrick-Prescott filter. The "standardised credit-to-GDP gap" is the difference between the credit-to-GDP ratio and its long-term trend. A high positive value of the "standardised credit-to-GDP gap" indicates excessive credit growth relative to GDP growth, which poses increased risks to the financial system, thus requiring the setting of the CCyB rate at a level above 0%. In addition to the "standardised credit-to-GDP gap", the Bank of Greece also examines a number of additional indicators to monitor the build-up of cyclical systemic risks.[85] These indicators are grouped into six regions:

- Credit developments, where the outstanding credit-to-GDP ratio at current prices, the growth of loans to households and the growth of credit to non-financial corporations are monitored.
- Private sector indebtedness, where the growth of credit to the domestic private sector, the ratio of outstanding credit to non-financial corporations to GDP and households' debt-to-income ratio and debt-service-to-income ratio at origination (DSTI-O) for loans secured by residential real estate are monitored.

[85] For definitions, see Bank of Greece Executive Committee Act 235/1/07.10.2024.

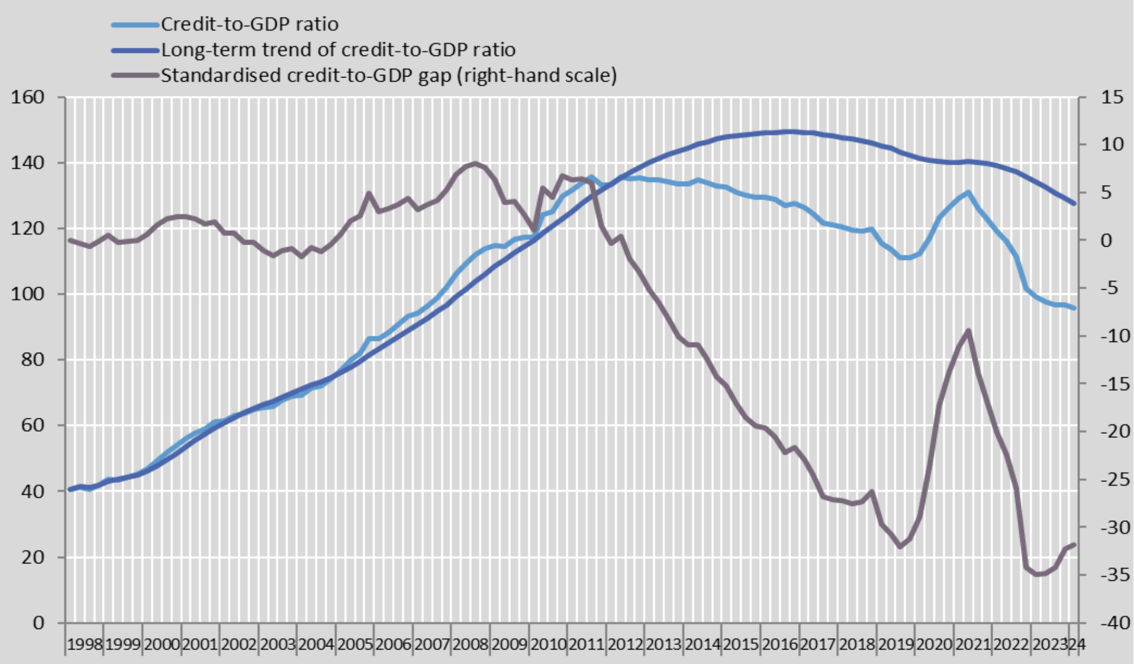
- Potential overvaluation of property prices, where the rise in the price index of residential and commercial real estate (offices and retail) is monitored.
- The strength of bank balance sheets, where the net interest margin (NIM), the growth of risk-weighted assets, the leverage ratio and the loan-to-deposit ratio are monitored.
- External imbalances, as reflected in the evolution of the current account balance-to-GDP ratio.
- Potential mispricing of risk, where the ATHEX Composite Share Price Index and the FTSE/ATHEX bank index are monitored.

In Greece, the "standardised credit-to-GDP gap" has remained in negative territory since 2012. In the first quarter of 2024, it stood at -31.8 percentage points, compared with -32.3 in the previous quarter (see Chart IV.2). It should be noted that the first quarter of 2024 is the latest available quarter for the financial liabilities of the private non-financial sector. For this value of the "standardised credit-to-GDP gap", the benchmark buffer rate (buffer guide), as defined in para. 3(a) of recommendation B of Recommendation ESRB/2014/1, is zero.

The analysis of the additional indicators examined by the Bank of Greece points to emerging cyclical systemic risks in certain areas, such as credit to non-financial corporations, residential real estate prices and the current account. Overall, however, it confirms that there is no excessive credit growth.

Chart IV.2 Standardised credit-to-GDP gap, credit-to-GDP ratio and long-term trend of the credit-to-GDP ratio (Q4 1997 – Q1 2024)

(quarterly data, non-seasonally adjusted GDP, Hodrick Prescott one-sided filter)



Sources: ELSTAT, Bank of Greece and Bank of Greece calculations.

1.3 SETTING THE COUNTERCYCLICAL CAPITAL BUFFER RATE FOR GREECE

Cyclical systemic risks in Greece have remained at a low or medium level for a long period of time and are not expected to accumulate sharply in the near future, which would allow the CCyB rate to be maintained at 0%.

On the other hand, the stable macroeconomic environment, Greece's upgrade to investment grade and the banking sector's improved fundamentals and prudential indicators establish favourable conditions for creating adequate macroprudential space to safeguard financial stability in the long term. The recommendations of international organisations also point in this direction. More specifically, the ECB Governing Council "Statement on Macroprudential Policies" of 28 June 2024 encourages national authorities to further build up releasable capital buffer requirements, given that prevailing banking sector conditions limit the risks of procyclicality. Also, the International Monetary Fund (IMF), in its latest report in the context of Article IV Consultations with Greece, points out that the activation of a PN CCyB would help (Greek) banks guard against potential systemic shocks. In this context, the Bank of Greece decided to set the PN CCyB target rate for Greece at 0.5%.

To this end, under Executive Committee Act 235/2/07.10.2024, the Bank of Greece decided to set the CCyB rate for Greece at 0.25%, applicable from 1 October 2025, while in the third quarter of 2024 the CCyB rate was maintained at "zero percent" (0%).

2. IDENTIFICATION OF THE OTHER SYSTEMICALLY IMPORTANT INSTITUTIONS IN GREECE (O-SIIS) AND SETTING OF THE O-SII BUFFER RATE

An O-SII buffer aims to reduce moral hazard and strengthen the resilience of other systemically important institutions (O-SIIs).[86] In this context, moral hazard arises when an institution expects not to be let to fail, given its systemic importance ("too big to fail"). Imposing additional capital requirements in the form of an O-SII buffer limits excessive risk-taking by a systemically important institution, thus reducing moral hazard by strengthening the systemically important institution's capital buffer to absorb potential losses and thereby limiting contagion risk.

The O-SII buffer consists of Common Equity Tier 1 (CET1) capital and its rate is set at a level of up to 3% of the total risk exposure amount.[87] The O-SII buffer is set on a solo, sub-consolidated or consolidated basis, as applicable, and its rate is reviewed at least once a year.

Under Law 4261/2014 (Article 124), the Bank of Greece is responsible for identifying O-SIIs among the institutions authorised in Greece. O-SIIs are identified on an annual basis, so as to consider the application of an O-SII buffer and the calibration thereof.

The Bank of Greece has adopted the European Banking Authority (EBA) guidelines in relation to the assessment of O-SIIs,[88] as they were adopted by Bank of Greece Executive Committee Act 56/18.12.2015. According to the EBA guidelines, the competent authorities should, for each bank falling under their jurisdiction, calculate relative scores indicating the systemic importance of each bank based on specific criteria. These criteria relate to size, importance for the economy, complexity/cross-border activity and interconnectedness of the institution with the financial system. These four criteria each consist of one or more mandatory indicators, which will be used as a minimum by the competent authorities in calculating the score of each institution. The score of each institution is expressed in basis points (bps). Each competent authority sets a threshold in bps; institutions with a score equal to or higher than that should be identified as O-SIIs. This threshold can be set from 275 bps up to 425 bps to take into account the specificities of the Member State's banking sector and to ensure the homogeneity of the group of O-SIIs designated in this way based on the O-SIIs' systemic importance. The 350 bps is proposed as an indicative threshold. The competent authorities may designate further relevant entities as O-SIIs based on additional qualitative and/or quantitative indicators of systemic importance.

In calculating the systemic importance scores of Greek banks, the Bank of Greece used only the mandatory indicators (see Table IV.1) and selected a threshold of 350 bps.

[86] In contrast with Global Systemically Important Institutions (G-SIIs).
[87] It should be noted that the O-SII buffer may exceed 3% upon approval by the European Commission.
[88] EBA/GL/2014/10.

Table IV.1 Mandatory indicators for the scoring of O-SIIs in Greece		
Criterion	**Indicators**	**Weight**
Size	Total assets	25%
Importance	Value of domestic payment transactions	8.33%
	Private sector deposits from depositors in the EU	8.33%
	Private sector loans to recipients in the EU	8.33%
Complexity/Cross-border activity	Value of OTC derivatives (notional)	8.33%
	Cross-jurisdictional liabilities	8.33%
	Cross-jurisdictional claims	8.33%
Interconnectedness	Intra-financial system liabilities	8.33%
	Intra-financial system assets	8.33%
	Debt securities outstanding	8.33%

As a result, the following institutions were identified as O-SIIs for 2024 on a consolidated basis:

• Alpha Services and Holdings S.A.

• Eurobank Ergasias Services and Holdings S.A.

• National Bank of Greece S.A.

• Piraeus Financial Holdings S.A.

and respectively the following institutions at solo level:

• Alpha Bank S.A.

• Eurobank S.A.

• National Bank of Greece S.A.

• Piraeus Bank S.A.

The above four credit institutions identified as O-SIIs represent approximately 94% of the total assets of the domestic banking sector.

Pursuant to Bank of Greece Executive Committee Act 234/1/23.09.2024, the Bank of Greece decided to set the O-SII buffer rate for 2025 as follows:

• at 1.25% for Eurobank Ergasias Services and Holdings S.A. at consolidated level, and

• at 1.00% for the following O-SIIs:

- Alpha Services and Holdings S.A. at consolidated level and Alpha Bank S.A. at solo level,
- Eurobank S.A. at solo level,
- National Bank of Greece S.A. at solo and consolidated level, and
- Piraeus Financial Holdings S.A. at consolidated level and Piraeus Bank S.A. at solo level.

3. BORROWER-BASED MEASURES

Borrower-based measures (BBMs) aim to prevent the accumulation of systemic risks stemming from the property market and related to private sector (household or business) financing. The activation of BBMs helps prevent excessive easing of credit standards, thereby strengthening borrower resilience and reducing credit risk for lenders.

The Bank of Greece is responsible for enacting macroprudential borrower-based measures under Article 133a of Law 4261/2014, which was inserted by Article 54 of Law 5036/2023, effective from 29 March 2023. In the context of its macroprudential mandate, the Bank of Greece may adopt a decision laying down, *inter alia*, the type of borrower-based measures, the ratios or features of credit to which caps apply, the cap percentages, the types of loans to which BBMs apply, as well as the terms and conditions of their implementation.

The Bank of Greece enacted macroprudential BBMs for loans and other credit extended to natural persons and secured by residential real estate (RRE) located in Greece, by Executive Committee Act 227/1/08.03.2024, applicable from 1 January 2025, thus allowing sufficient time for stakeholders to adjust to the new framework. More specifically, the cap on the loan-to-value ratio at origination (LTV-O ratio) is set at 90% for first-time buyers and 80% for second and subsequent buyers. Additionally, the cap on the debt service-to-income ratio at origination (DSTI-O ratio) is set at 50% for first-time buyers and 40% for second and subsequent buyers. It should be noted that the DSTI-O ratio is the annual debt servicing costs of the total debt of the borrower divided by the borrower's total annual disposable income at the time of loan/credit origination, while the LTV-O ratio is the total amount of the loan or loan tranches secured by real estate property at the time of origination divided by the value of the real estate collateral at the time of origination.

More relaxed caps for first-time buyers were set to facilitate their access to the mortgage lending market. Furthermore, credit providers are allowed to exempt 10% of the total number of new loans and other credit approved and at least partially disbursed in each quarter at the institution- or entity-level from each of the abovementioned caps. Compliance with the exemption quotas is assessed separately for first-time buyers and for second and subsequent buyers. The abovementioned BBMs shall not apply to non-performing loans and forborne loans, portfolios of re-performing loans purchased by credit institutions from NPL servicers, as well as to loans disbursed under national housing policy or green transition programmes.

V. OTHER SECTORS OF THE FINANCIAL SYSTEM

1. STRUCTURE OF THE DOMESTIC FINANCIAL SYSTEM

In the first half of 2024, the structure of the domestic financial system showed no significant changes compared to the end of 2023, with banks remaining the main pillar (see Table V.1). In particular, the assets of credit institutions amounted to 85.1% of the total assets of the financial system, with Greek commercial banks representing 83.5%, while cooperative banks and branches of foreign banks only account for 0.5% and 1.1%, respectively. The high level of concentration is evidenced by the share held by the four significant banks (93.8% of total banking assets).

Table V.1 Structure of the domestic financial system

(amounts in EUR million and percentage shares)

Assets	2020		2021		2022		2023		June 2024	
Credit institutions	**277,335**	**87.8%**	**302,678**	**87.9%**	**306,119**	**88.4%**	**294,417**	**86.1%**	**294,985**	**85.1%**
Greek commercial banks	271,791	86.1%	296,403	86.1%	299,284	86.4%	289,554	84.7%	289,612	83.5%
Cooperative banks	1,727	0.5%	1,786	0.5%	1,750	0.5%	1,620	0.5%	1,636	0.5%
Foreign banks' branches	3,818	1.2%	4,490	1.3%	5,085	1.5%	3,242	0.9%	3,737	1.1%
Institutional investors	**29,612**	**9.4%**	**32,875**	**9.5%**	**31,812**	**9.2%**	**38,635**	**11.3%**	**43,238**	**12.5%**
Insurance companies	19,976	6.3%	20,468	5.9%	18,698	5.4%	20,326	5.9%	20,599	5.9%
Pension funds	1,698	0.5%	1,887	0.5%	1,800	0.5%	2,158	0.6%	2,348	0.7%
Collective investment undertakings	7,938	2.5%	10,519	3.1%	11,314	3.3%	16,152	4.7%	20,291	5.9%
Mutual funds	4,799	1.5%	6,606	1.9%	6,751	1.9%	11,237	3.3%	15,044	4.3%
Portfolio investment and real estate investment companies	3,139	1.0%	3,913	1.1%	4,563	1.3%	4,915	1.4%	5,248	1.5%
Other non-bank institutions	**7,528**	**2.4%**	**7,184**	**2.1%**	**6,899**	**2.0%**	**7,440**	**2.2%**	**7,329**	**2.1%**
Brokerage firms	753	0.2%	807	0.2%	607	0.2%	818	0.2%	930	0.3%
Leasing and factoring companies	6,522	2.1%	6,186	1.8%	6,292	1.8%	6,618	1.9%	6,394	1.8%
Consumer credit and venture capital companies	253	0.1%	191	0.1%	0	0.0%	4	0.0%	5	0.0%
Credit servicing firms	**1,223**	**0.4%**	**1,535**	**0.4%**	**1,445**	**0.4%**	**1,294**	**0.4%**	**1,177**	**0.3%**
Total	**315,699**	**100%**	**344,272**	**100%**	**346,275**	**100.0%**	**341,786**	**100%**	**346,729**	**100%**

Source: Bank of Greece.

Institutional investors[89] continue to be the second largest sector of the domestic financial system. In June 2024, institutional investors' assets showed a significant increase compared to December 2023 and represented 12.5% of the financial system's total assets. This increase is primarily attributed to the Undertakings of Collective Investment in Transferable Schemes (UCITS), with their assets amounting to EUR 20.3 billion (5.9% of the total). The assets of mutual funds have grown markedly over the past two years (more than doubling since the end of 2022).[90] The assets of insurance companies have increased slightly to EUR 20.6 billion (5.9% of the total).

Other non-bank institutions (namely, brokerage companies, leasing companies, factoring companies and venture capital companies) continue to hold a small market share of 2.1%.

Finally, the share of credit servicing firms (CSFs) in the total assets of the financial system remains very low (0.3%).[91]

[89] This category comprises insurance companies, occupational insurance funds and undertakings of collective investment in transferable securities (UCITS).

[90] The increase in the assets of mutual funds is mainly driven by new mutual funds with fixed duration, which typically have a duration of two to five years.

[91] It should be noted that their role in the management of the non-performing private debt remains significant.

2. INSURANCE UNDERTAKINGS

2.1 KEY MARKET FIGURES[92]

During the first half of 2024, no significant changes were observed in the structure of the Greek private insurance market, with 34 insurance undertakings[93] being active in the Greek private insurance market. Insurance undertakings can be classified according to the type of license as follows:

- 2 life insurance undertakings;
- 19 non-life insurance undertakings; and
- 13 insurance undertaking (composites) writing both life and non-life business (including life insurance undertakings underwriting only non-life business of "Accident" and "Sickness" classes).

Out of the above 34 insurance undertakings, 31 operate and are supervised in accordance with the European Directive "Solvency II", which applies to all EU Member States since 1.1.2016, while 3 insurance undertakings are exempted, due to their size, from several requirements related to all three pillars of Solvency II.[94]

Out of the 31 insurance undertakings subject to the provisions of Solvency II, 11 belong to insurance groups with their parent undertaking[95] in other EU Member States and 5 to insurance groups subject to the supervision of the Bank of Greece. In addition, 6 insurance undertakings with their head offices in Greece operate in other EU Member States under the freedom to provide services (Table V.2).

Furthermore, according to the most recent data available by the European Insurance and Occupational Pensions Authority (EIOPA), in December 2023, 190 insurance undertakings with head offices in other EU Member States[96] operated in Greece, either under the freedom of establishment (branches) or under the freedom to provide services, the financial supervision of which is under the responsibility of the supervisory authorities of their home Member State.[97]

[92] The cut-off date for information and data in this chapter is 30.6.2024.

[93] Excluding the mutual insurance undertakings referred to in the first sentence of para. 1 of Article 7 of Law 4364/2016.

[94] The Bank of Greece, based on the principle of proportionality, has allowed 3 insurance undertakings that meet the required size and business criteria to be exempted from certain Solvency II provisions regarding the solvency requirements, the system of governance and public disclosure.

[95] As of 18.1.2024, the number stands at 11, due to the acquisition of 75% of "Ydrogios Insurance and Reinsurance S.A." by "Reale Mutua di Assicurazioni".

[96] Source: European Insurance and Occupational Pensions Authority (EIOPA).

[97] For the year 2023, the annual gross written premiums of these undertakings amounted to EUR 335 million for activity under the right of establishment and to EUR 1,006 million for activity under the freedom to provide services, corresponding to 5% and 16% of the total Greek insurance market respectively.

Table V.2 Number of insurance undertakings active in Greece	**2020**	**2021**	**2022**	**2023**	**H1 2024**
Life insurance undertakings	2	2	2	2	2
Non-life insurance undertakings	18	18	19	19	19
Insurance undertakings writing both life and non-life business	17	16	15	13	13
Total	**37**	**36**	**36**	**34**	**34**
Insurance undertakings that are supervised in accordance with Solvency II	*35*	*34*	*34*	*31*	*31*
Branches of insurance undertakings established in other EU Member States	23	21	20	21	22
Insurance undertakings established in other Member States pursuing business under the right of establishment or the freedom to provide services	253	215	229	190	N/A

Source: Bank of Greece.

It is pointed out that these undertakings have a large market share in the field of third-party motor liability insurance. In fact, in the first half of 2024, their share (in number of vehicles) increased to 22%, from 21% in December 2023.

The financial data presented below concern only the 31 undertakings that operate in the domestic insurance market and that are subject to supervision by the Bank of Greece, according to Solvency II.

The domestic insurance market is characterised by significant concentration, especially with regard to the undertakings that carry out life insurance business and to the undertakings that carry out both life and non-life insurance business. The 5 largest insurance undertakings hold 87% of the relevant market, in terms of technical provisions, while the 5 largest insurance undertakings operating in non-life insurance business, in terms of gross written premiums, hold a share of 60% of the relevant market.

Gross written premiums of the life insurance business[98] in the first half of 2024 amounted to EUR 1.4 billion, up by 11% compared to the first half of 2023. Of this amount, EUR 0.6 billion is related to insurance products linked to investments, i.e. 44% of total gross written premiums of life business, compared to 42% in the first half of 2023, recording a significant growth (16% year-on-year). In parallel, there was an increase of 1% in gross written premiums of insurance products with a profit share, as well as an increase of 6% in other life insurance business (see Chart V.1).

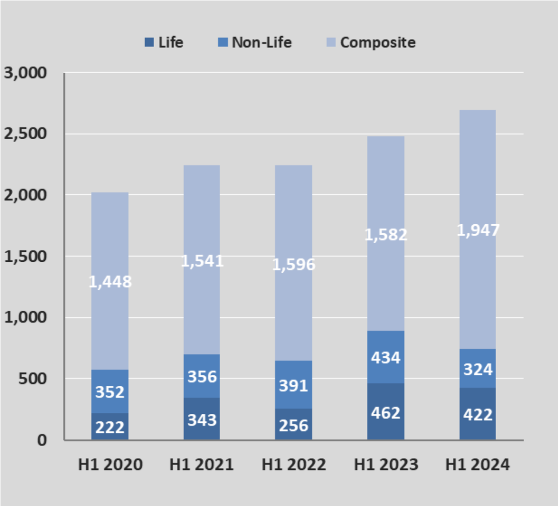
During the same period, non-life insurance premiums[99] amounted to EUR 1.3 billion, up by 6% compared to the first half of 2023. The lines of business with the most significant market shares are third-party motor liability (30%), fire insurance (21%) and hospital expenses insurance (17%), with year-on-year premium changes of +1%, +12% and +9% respectively. In the first half of 2024, claims incurred (excluding reinsurance recoveries) amounted to EUR 1.1 billion for life insurance and EUR 0.5 billion for non-life insurance, up by 21% and by 9% respectively (see Chart V.2).

[98] Including life insurance business of composite insurance undertakings.
[99] Including non-life insurance business of composite insurance undertakings.

For non-life insurance, the market loss ratio in the first half of 2024 stood at 52% (compared with 55% in 2023), while the expense ratio (administration expenses and commissions) came to 49% (compared with 48% in 2023).

Chart V.1 Gross written premiums per type of insurance undertaking

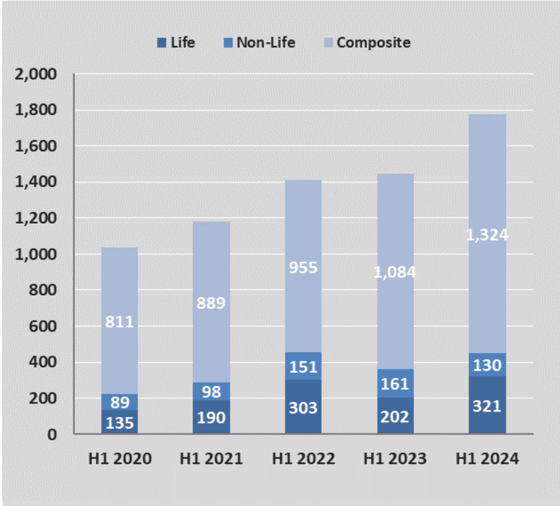
(EUR million)



Source: Bank of Greece.

Chart V.2 Claims incurred per type of insurance undertaking

(EUR million)



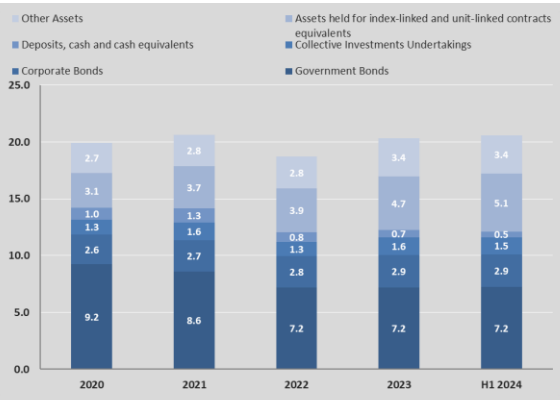
Source: Bank of Greece.

The total assets of insurance undertakings supervised by the Bank of Greece amounted to EUR 20.6 billion in June 2024, marginally up by 1% compared to December 2023. Of the total assets, EUR 7.2 billion (35%) was held in government bonds and EUR 2.9 billion (14%) in corporate bonds. As concerns the credit rating of these assets, 98% of the government bonds and 86% of the corporate bonds were rated BB- and above. In addition, an amount of EUR 5.1 billion (25%) related to unit- and index-linked insurance products (see Chart V.3).

Accordingly, in June 2024 the total liabilities of insurance undertakings amounted to EUR 16.8 billion (up from EUR 16.6 billion in December 2023), while total technical provisions amounted to EUR 15.3 billion (up from EUR 15.2 billion in December 2023), of which EUR 11.8 billion related to life insurance business and EUR 3.5 billion to non-life business. As concerns life technical provisions, 39% refers to unit- and index-linked insurance products (against 37% in December 2023) (see Chart V.4).

Chart V.3 Breakdown of insurance undertakings' assets

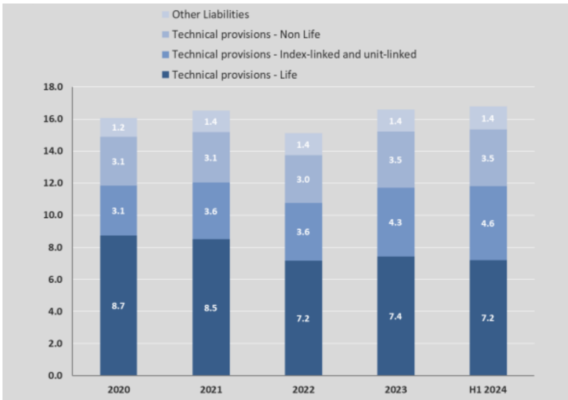
(EUR billion)



Source: Bank of Greece.

Chart V.4 Breakdown of insurance undertakings' liabilities

(EUR billion)



Source: Bank of Greece.

The total own funds of the insurance market amounted to EUR 3.7 billion, up by 2% compared to December 2023. The total Solvency Capital Requirement (SCR)[100] amounted to EUR 2.1 billion and the respective total eligible own funds stood at EUR 3.7 billion. Concerning the quality of the eligible own funds of the insurance market, 91% of these own funds are classified in the highest quality category (Tier 1). In parallel, the SCR coverage ratio for all insurance undertakings is significantly higher than 100% (see Table V.3 and Chart V.5). The Minimum Capital Requirement (MCR)[101] for the entire insurance market amounted to EUR 0.7 billion and the respective total eligible own funds amounted to EUR 3.4 billion (see Table V.3 and Chart V.6).

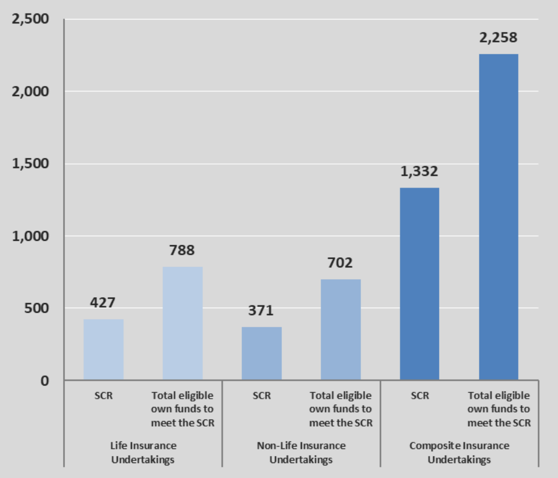
Table V.3 Capital requirements, eligible own funds and solvency ratios

(EUR million)	2020	2021	2022	2023	H1 2024
Total Solvency Capital Requirement (SCR)	1,940	2,094	1,954	2,104	2,130
Total eligible own funds to meet the SCR	3,602	3,984	3,606	3,739	3,748
SCR coverage ratio	185.7%	190.3%	184.6%	177.7%	175.9%
Minimum Capital Requirement (MCR)	703	714	676	738	740
Total eligible own funds to meet the MCR	3,441	3,718	3,290	3,408	3,440
MCR coverage ratio	489.5%	521.0%	486.9%	461.6%	465.0%

Source: Bank of Greece.

Chart V.5 Total Solvency Capital Requiement and total eligible own funds to meet the SCR per type of insurance undertaking

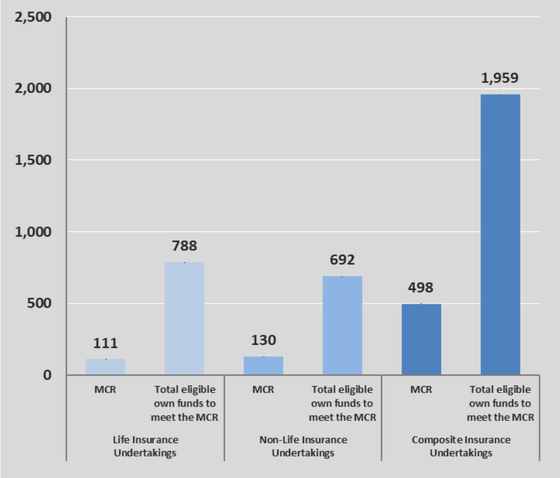
(H1 2024, EUR million)



Source: Bank of Greece.

Chart V.6 Minimum Capital Requirement and total eligible own funds to meet the MCR per type of insurance undertaking

(H1 2024, EUR million)



Source: Bank of Greece.

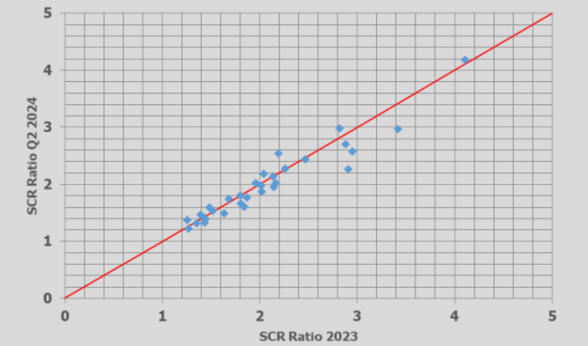
[100] The Solvency Capital Requirement reflects the adequacy of the own funds so that the insurance undertaking has the ability to absorb losses at a confidence level of 99.5% with a time horizon of one year.

[101] The Minimum Capital Requirement reflects the adequacy of the own funds so that the insurance undertaking has the ability to absorb losses at a confidence level of 85%, with a time horizon of one year, and represents a level of capital below which the interests of policyholders would be seriously jeopardised if the undertaking were allowed to continue operating.

Changes in the SCR coverage ratios of insurance undertakings were observed during the first half of 2024, however all undertakings remain solvent.

As shown in Chart V.7, undertakings above the red line saw their SCR coverage ratios improve in the first half of 2024 compared to December 2023 (42% of all insurance undertakings), while undertakings below the red line saw their SCR coverage ratios deteriorate.

Chart V.7 SCR coverage ratio (June 2024 vis-à-vis December 2023)



Source: Bank of Greece.

2.2 THE RISKS OF INSURANCE UNDERTAKINGS

Insurance undertakings are exposed to underwriting and investment risks. According to the analysis of the standard formula of the Solvency Capital Requirement, these risks have not significantly changed for 2023.

Life underwriting risks have mainly a long-term horizon, due to the nature of life insurance liabilities. For life insurance undertakings, the biggest risk is market risk and, more particularly, interest rate risk. Non-life underwriting risks have mainly a short-term horizon, although for some cases of insurance claims full settlement takes time, such as for those related to catastrophic events (earthquake or fire). Furthermore, for both life and non-life insurance, counterparty default risk as well as operational risk are considered important. In fact, operational risk is intertwined with the successful or unsuccessful business operation of an insurance undertaking.

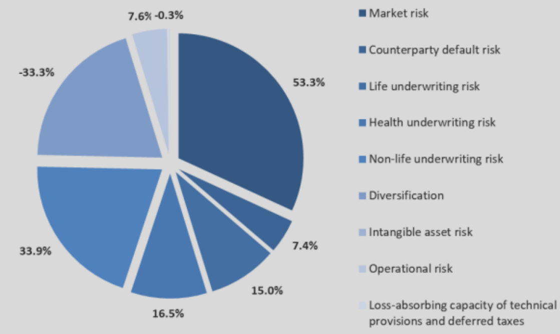
In 2023, market risk (mainly referring to equity and credit spread risk) increased, while underwriting risk remained almost unchanged compared to 2022. It should be noted that the risk analysis in the following charts concerns the net Solvency Capital Requirement, i.e. after the risk-mitigating effect of reinsurance,[102] which is mostly relevant for catastrophic risks (fire earthquake lines of business).

Analysis of the risks for insurance undertakings

The analysis of risks for the entire Greek insurance market over the last two years points to an increase of two percentage points in market risk and a decrease of two percentage points in life underwriting risk, while non-life underwriting risk and health underwriting risk remained almost unchanged (see Charts V.8 and V.9).

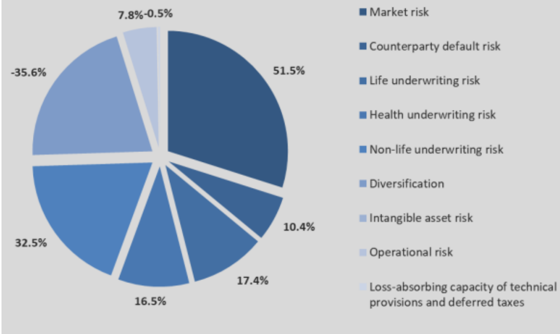
[102] Reinsurance is a risk mitigating technique whereby an insurance undertaking contractually agrees to transfer part of its risk and/or portfolio to a third party.

Chart V.8 Analysis of insurance market risks, 31.12.2023



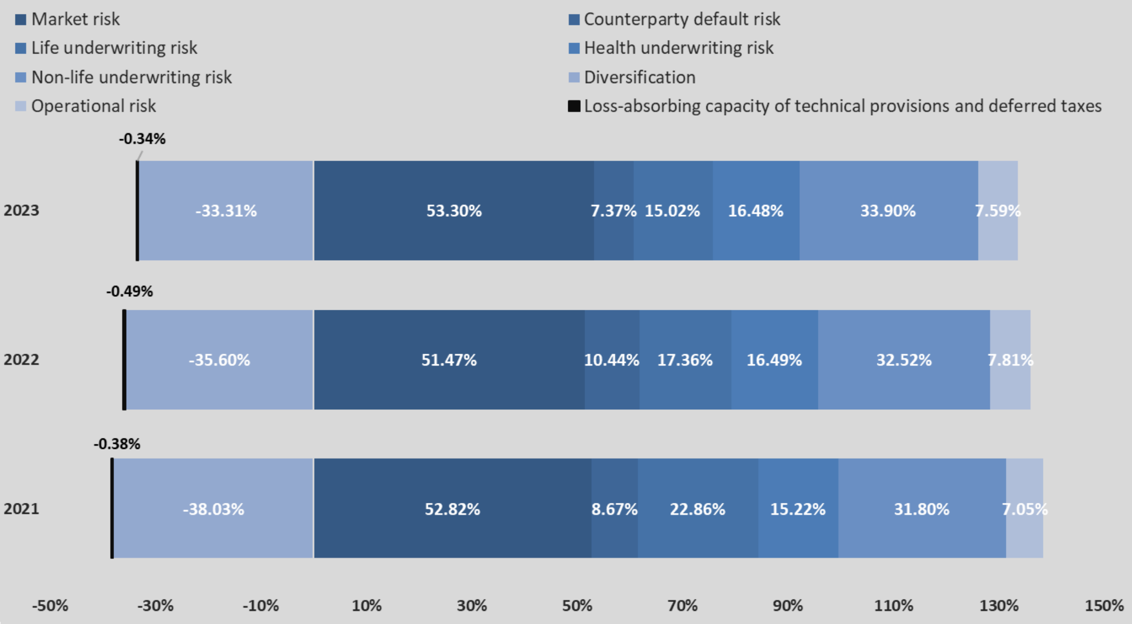
Source: Bank of Greece.

Chart V.9 Analysis of insurance market risks, 31.12.2022



Source: Bank of Greece.

Chart V.10 Analysis of insurance risks for the period 2021-2023



Source: Bank of Greece.

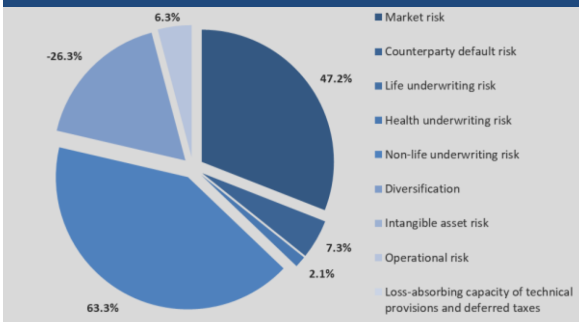
In 2021-2023, market risk rose, while health underwriting risk and non-life underwriting risk increased slightly (see Chart V.10). Operational risk has shown smaller changes in this three-year period, as opposed to life underwriting risk, which decreased significantly. With regard to counterparty default risk, a slight decrease was observed, as was the diversification benefit[103] of associated risks.

[103] The diversification benefit is the reduction of exposure to the risk associated with the fact that the adverse effect of one risk can be offset by the more favourable outcome of another risk, when these risks are not fully correlated.

Non-life insurance undertakings

For non-life insurance undertakings, non-life insurance undertaking risk is the most important risk, which accounts for 63.3% (from 61.8% in 2022 and 58.9% in 2021) of their risk profile. The second biggest risk is market risk, accounting for 47.2% (compared with 44.9% in 2022 and 52.3% in 2021). The next, in order of importance, risk is counterparty default risk, with a contribution of 7.3%, down from the previous year (13.3% in 2022), while operational risk remains quite low, at around 6.3% (against 6.1% in the previous year). Finally, diversification mitigates risk by 26.3% (see Chart V.11).

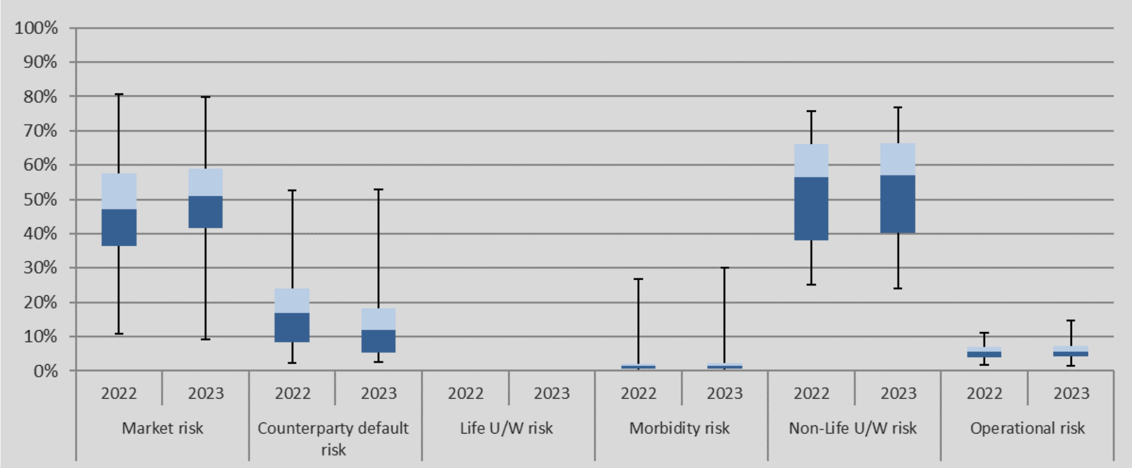
Chart V.11 Analysis of the risks of non-life insurance undertakings, 31.12.2023



Source: Bank of Greece.

However, significant differences are observed between individual non-life insurance undertakings. In particular, there is a great heterogeneity in the risk profile and especially in market risk and non-life underwriting risk, with the contributions of these risks to the risk profile of insurance undertakings ranging from 9.1% to 79.8% and from 23.9% to 76.9%, respectively (see Chart V.12).

Chart V.12 Distribution of risks of non-life insurance undertakings, 31.12.2023

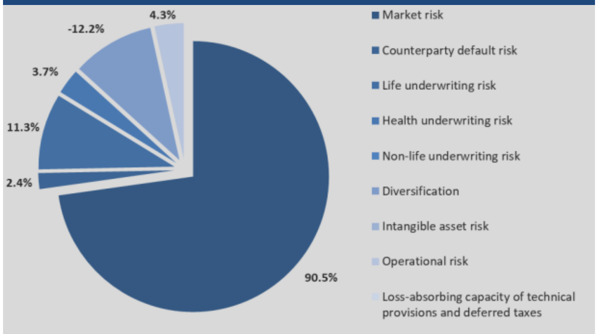


Source: Bank of Greece.

Life insurance undertakings

For the two (2) insurance undertakings that exclusively underwrite life insurance business, the biggest risk in 2023 is market risk with a percentage of 90.5%, showing a significant increase compared to 2022 (86%), followed by life undertaking risk with 11.3%, from 14.6% in the previous year (see Chart V.13).

Chart V.13 Analysis of the risks of life insurance undertakings, 31.12.2023

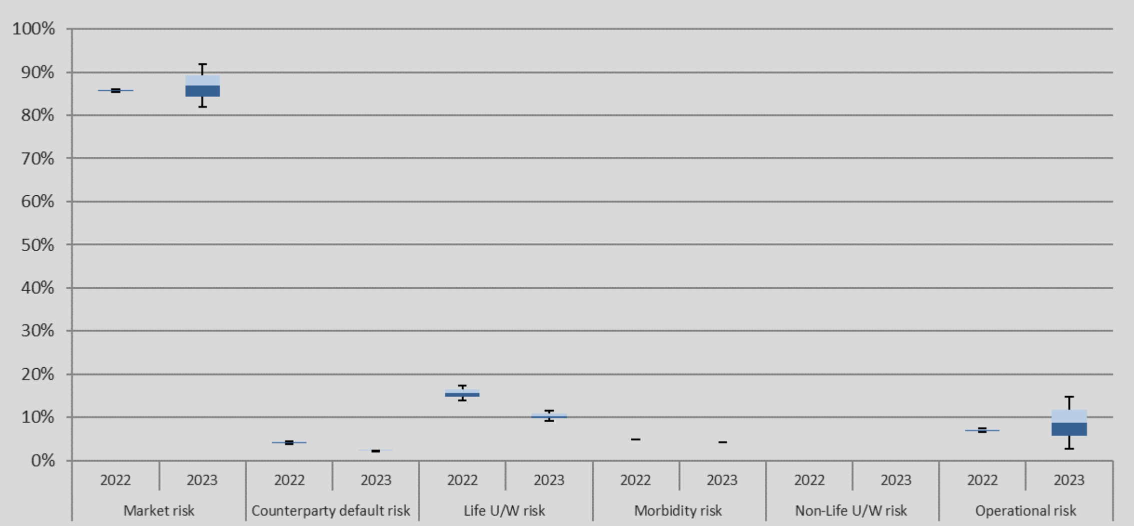


Source: Bank of Greece.

Counterparty default risk declined to 2.4% from 4.4% in 2022, while operational risk decreased to 4.3% from 6.6%, respectively. Health underwriting risk declined to 3.73% in 2023, compared with 4.2% in 2022. Finally, diversification benefits decreased significantly year-on-year to 12.2% in 2023, compared with 15.8% in 2022.

Differences can likewise be observed across individual life insurance undertakings (see Chart V.14).

Chart V.14 Distribution of risks of life insurance undertakings (2022-2023)

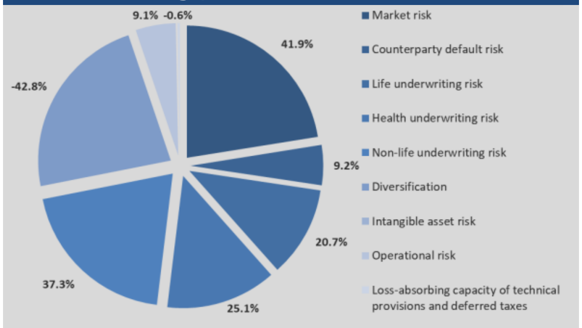


Source: Bank of Greece.

Composite insurance undertakings

For insurance undertakings writing both life and non-life business (composite insurance undertakings), the contribution of different risks to their risk profile differs considerably.

Chart V.15 Analysis of the risks of composite insurance undertakings, 31.12.2023



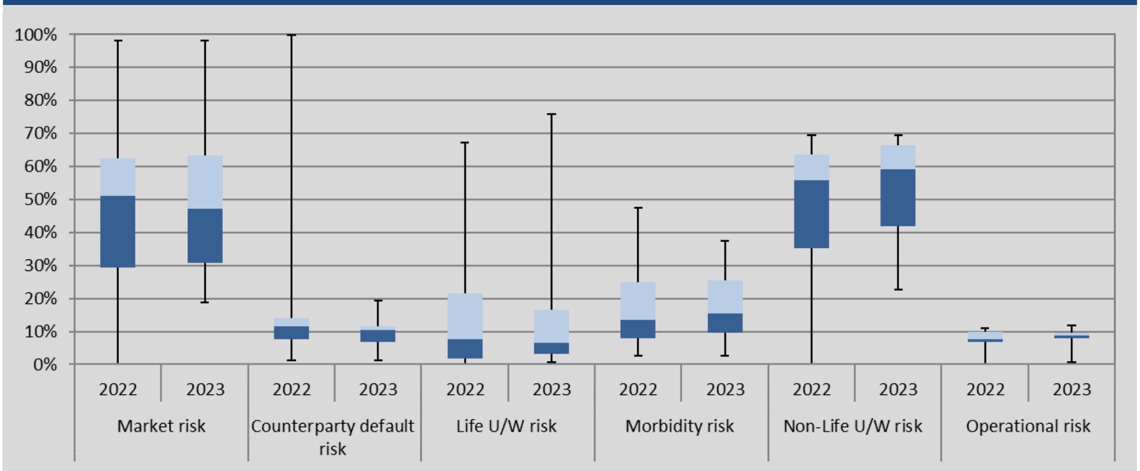
Source: Bank of Greece.

The biggest risk is market risk, accounting for 42% in 2023 from 44.1% in 2022, while non-life underwriting risk, life underwriting risk and health underwriting risk account for 37.3%, 20.7% and 25.1%, respectively, compared with 33.5%, 22.6% and 23.4% in the previous year (see Chart V.15).

In addition, counterparty default risk is high, standing at 9.2%, down from 2022 (11.3%). Diversification benefits are quite significant, reducing the risk by 42.8%, as these undertakings have greater potential to assume unrelated or, in some cases, negatively correlated risks.

Comparing individual composite insurance undertakings, there is great heterogeneity. This heterogeneity is due to the fact that composite insurance undertakings include both life insurance undertakings, which underwrite non-similar to life health business, and a significant number of composite insurance undertakings, which underwrite mainly non-life business. Similarly, the high variation of life underwriting risk is due to the small number of undertakings that underwrite significant life insurance risk (see Chart V.16).

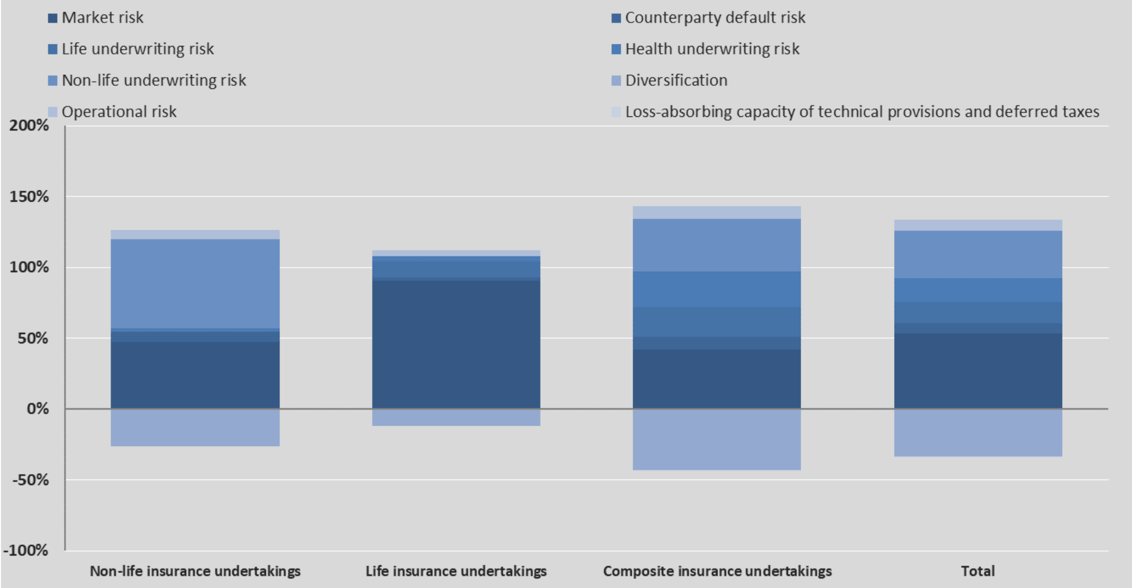
Chart V.16 Distribution of risks of composite insurance undertakings (2022-2023)



Source: Bank of Greece.

Considering the type of insurance business, the biggest risks for 2023 are non-life underwriting risk and market risk (see Chart V.17).

Chart V.17 Distribution of risks per type of insurance undertaking, 31.12.2023

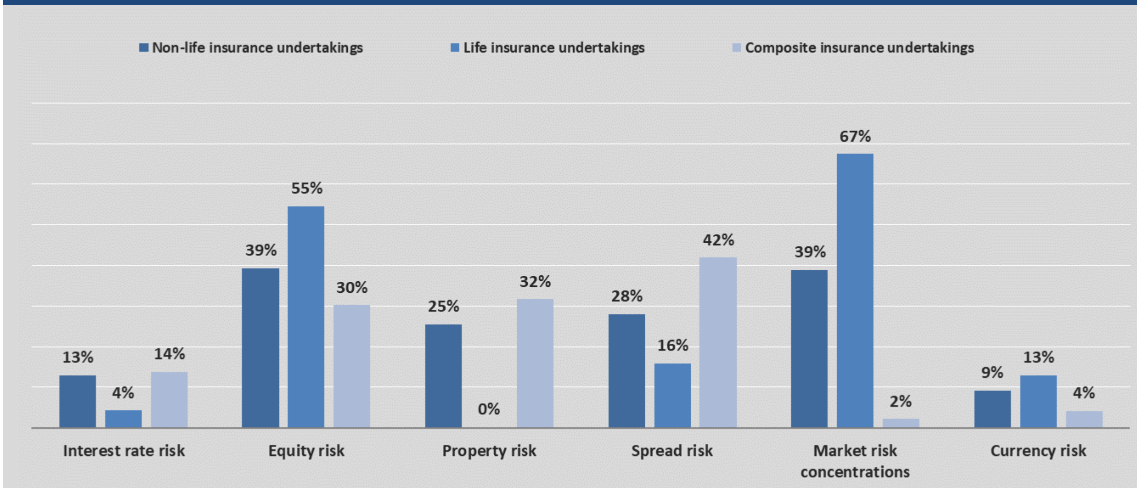


Source: Bank of Greece.

Market risk of insurance undertakings

Regarding market risk, which accounts for 53.3% of insurance undertakings' total risk, it appears that there are large variations by different type of insurance undertaking and by specific risk category.

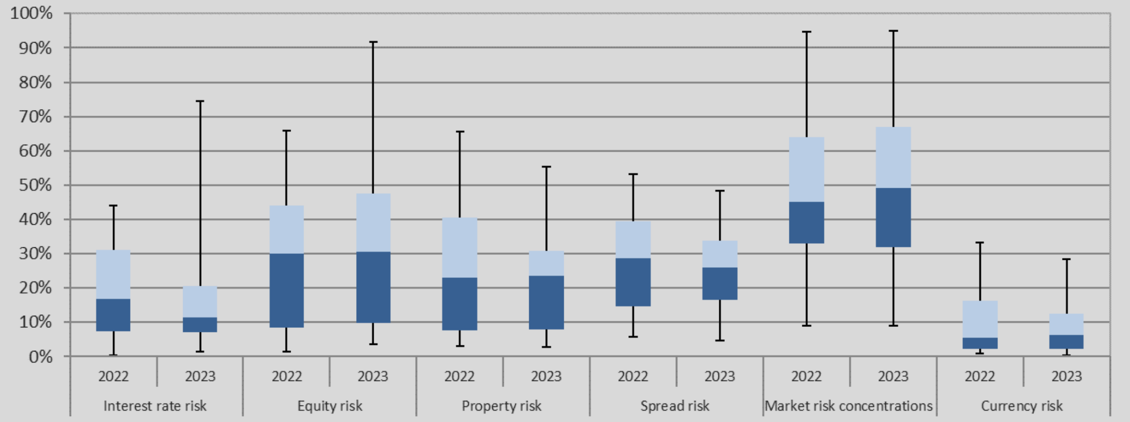
Chart V.18 Analysis of market risk in the insurance market, 31.12.2023



Source: Bank of Greece.

Analysing market risk distribution of non-life insurance undertakings, it follows that these are quite exposed to equity risk, namely 39.4% of their total risk, compared with 33.3% in the previous year, as well as to market concentration risk (38.8%), spread risk (28.%), and property risk (25.4%) (see Charts V.18 and V.19).

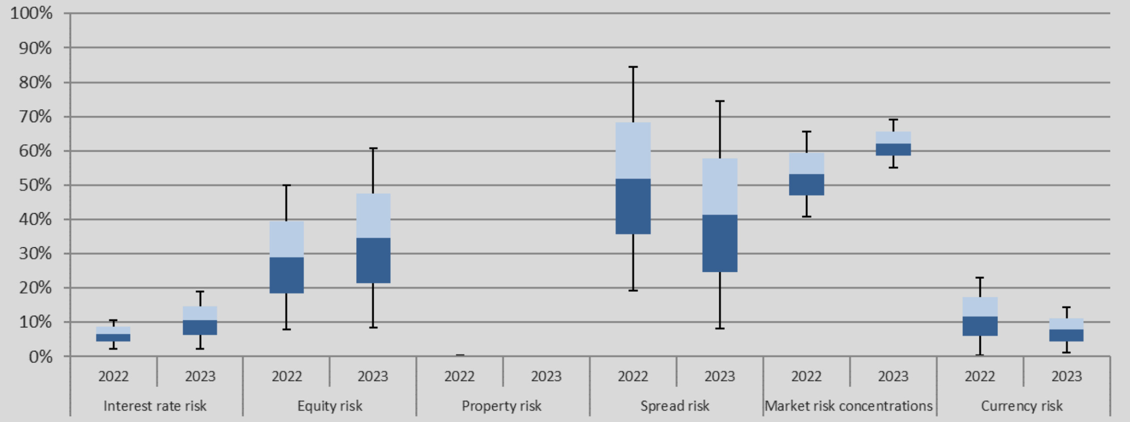
Chart V.19 Distribution of market risk for non-life insurance undertakings (2022-2023)



Source: Bank of Greece.

The most significant risk of life insurance undertakings is market concentration risk (67.4%), which increased markedly compared to 2022 (61.6%), followed by equity risk and spread risk, which amounted to 54.5% and 15.9% in 2023 (from 43.2% and 29.8% in the previous year) respectively. It should also be noted that interest rate risk, albeit higher compared to 2022, remains at low levels. Property risk is almost zero, while currency risk fell to 12.9% in 2023 from 19.4% in 2022 and 23.5% in 2021 (see Charts V.18 and V.20).

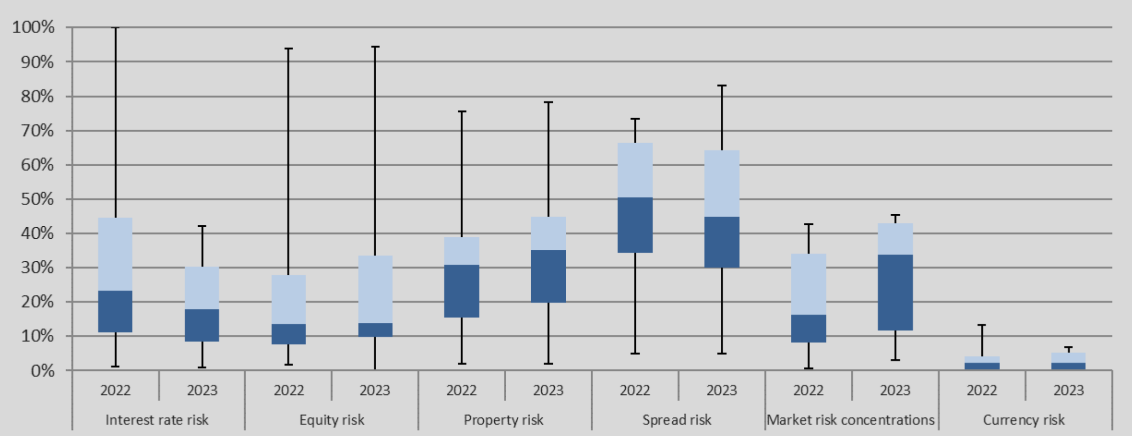
Chart V.20 Distribution of market risk for life insurance undertakings (2022-2023)



Source: Bank of Greece.

Turning to composite insurance undertakings, there is large variation in their exposure of to market risk. In each market risk category, there are insurance undertakings with almost zero exposure and others with quite large exposure. In these undertakings, the most significant component of market risk is spread risk, standing at 41.9%, compared with 43% in 2022, followed by property risk at 31.7%, compared with 27.5% in 2022 (see Charts V.18 and V.21).

Chart V.21 Distribution of market risk for composite insurance undertakings, 31.12.2023



Source: Bank of Greece.

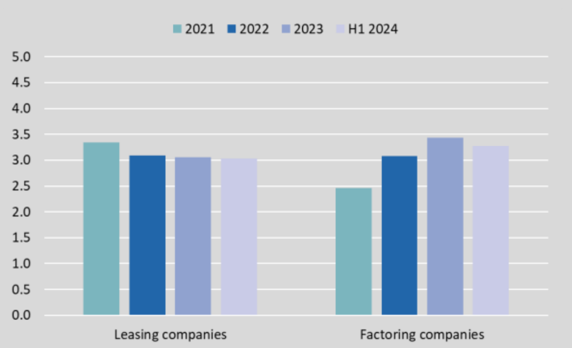
3. OTHER FINANCIAL INSTITUTIONS

3.1 LEASING COMPANIES – FACTORING COMPANIES – MICROFINANCE INSTITUTIONS

In the first half of 2024, the assets of leasing companies decreased marginally and amounted to EUR 3 billion, down by 0.9% compared to December 2023. Similarly, in June 2024 the assets of factoring companies declined by 4.5% compared to December 2023 and came to EUR 3.3 billion (see Chart V.22). By contrast, microfinance companies saw their assets increase significantly by 78% in the first half of 2024, mainly due to the penetration of two more stakeholders in the market[104] (with the total number of licensed institutions now standing at three). It should be noted that the share of microfinance companies in the total assets of other financial institutions remains very low (EUR 8 million, compared with EUR 4.5 million in the end of 2023).

Chart V.22 Evolution of assets of other financial institutions

(EUR billion)



Source: Bank of Greece.

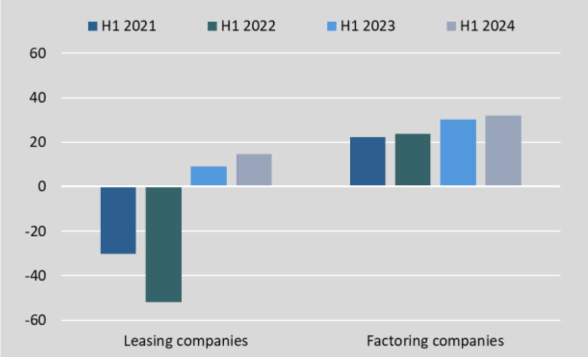
Turning to the interconnection of other financial institutions with credit institutions, their liabilities to credit institutions mainly concern borrowing from the parent groups. In June 2024, their borrowing increased and amounted to 15% of their liabilities, compared with 14.7% in December 2023.[105] At the same time, the receivables of other financial institutions from credit institutions decreased significantly to EUR 89.8 million in June 2024, from EUR 193.2 million in December 2023, representing 1.4% of their assets in June 2024, against 3% in December 2023.[106]

In terms of income statements, in the first half of 2024, leasing companies showed pre-tax profits of EUR 14.8 million, compared to losses of EUR 11.1 million in the first half of 2023. Likewise, factoring companies recorded increased pre-tax profits, which amounted to EUR 32 million in the first half of 2024, compared to EUR 30 million in the first half of 2023 (see Chart V.23).

Finally, their NPLs (on-balance-sheet data), on an aggregate basis, decreased to EUR 755 million in June 2024 (from EUR 787.7 million in December 2023). As a result, the

Chart V.23 Evolution of pre-tax profits of other financial institutions

(EUR million)



Source: Bank of Greece.

[104] Financial institutions_Authorisation (bankofgreece.gr)

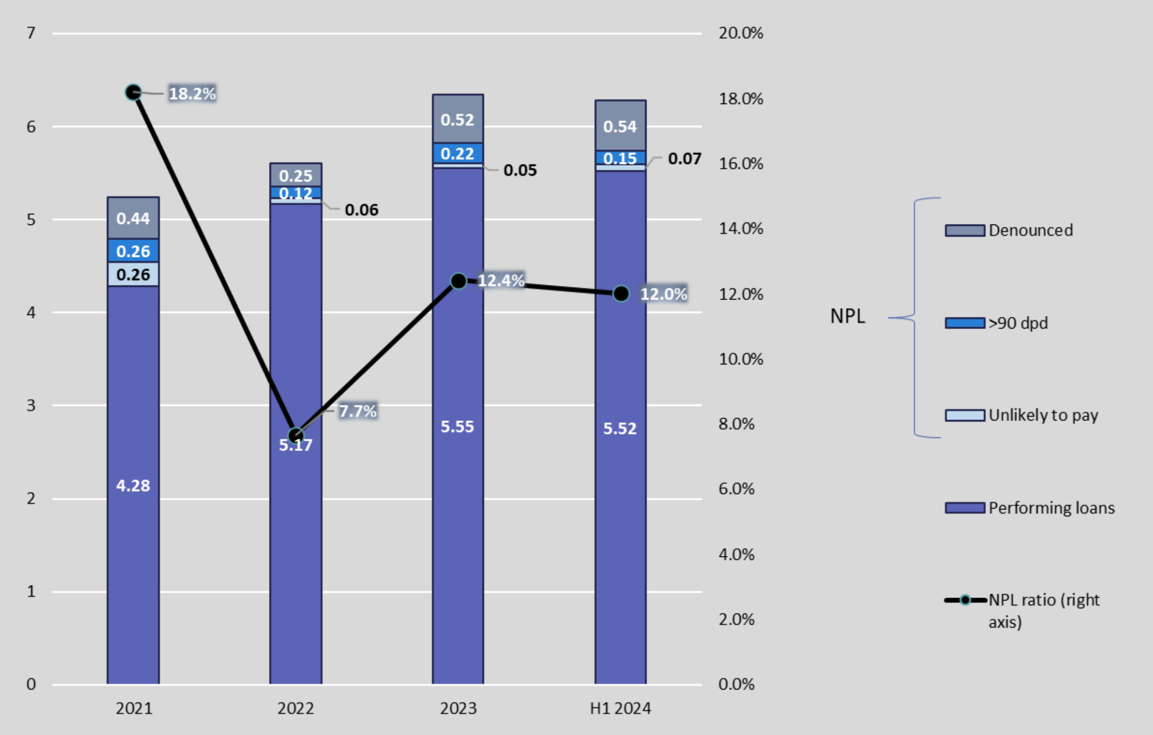
[105] The figures refer exclusively to leasing and factoring companies.

[106] The significant decrease was mainly driven by Piraeus Factoring, which reduced its receivables by EUR 103 million as of 30.6.2024, as a result of its strategy to invest in fixed assets.

ratio of NPLs to the total loans dropped to 12% in June 2024, against 12.4% in December 2023 (see Chart V.24).

Chart V.24 Other financial institutions – Performing and non-performing loans

(left-hand scale: EUR billion, right-hand scale: percentages %)



Source: Bank of Greece.

3.2 CREDIT SERVICING FIRMS (CSFs)

Currently, 18 Credit Servicing Firms (CSFs) are operating in Greece.[107] The revised framework (Law 5072/2023) for credit servicers and credit purchasers[108] requires that all CSFs which have been granted an authorisation under Article 1 of Law 4354/2015 (A' 176)[109] need to be assessed by the Bank of Greece for compliance with the provisions of the new framework in order to be re-authorised. The Bank of Greece has authorised 14 CSFs until now, extended the licenses of 4 existing CSFs until the end of 2024 and withdrew 5 licenses after their holders had voluntarily relinquished them.

[107] Under Article 40 of Law 5072/2023 and Bank of Greece Executive Committee Acts No 118/19.5.2017 and No 225/1/30.1.2024, currently in force.

[108] The revised framework for credit servicers and credit purchasers was established by Law 5072/2023, which, among other things, transposed into Greek law the relevant provisions of Directive (EU) 2021/2167 of the European Parliament and the Council, of 24 November 2021, on credit servicers and credit purchasers and amending Directives 2008/48/EC and 2014/17/EU Directive. In particular, the new framework introduced: (a) additional requirements for the establishment and functioning of CSFs (e.g. stricter requirements for internal governance and internal control mechanisms, a framework for sanctions, administrative penalties and remedial measures, and stronger protection and fair treatment of borrowers, including relevant procedures for recording and handling borrower complaints), (b) requirements to inform borrowers about the transfer of claims from credit/financial institutions and credit purchasers; and (c) a framework for cross-border credit servicing activities. Following the publication of Law 5072/2023, the Bank of Greece issued Executive Committee Act No 225/1/30.1.2024, which specifies the terms and conditions for the authorisation of CSFs.

[109] The Bank of Greece had granted authorisations to 26 CFSs, of which 3 had ceased operations before the launch of the re-authorisation process.

So far, none of the CSFs has applied for authorisation to refinance receivables. The activity of CSFs varies considerably, with the 3 largest firms having a market share of 85.3% based on the total value of exposures under management, while 12 firms are showing negligible to zero activity (with a market share below 1%).

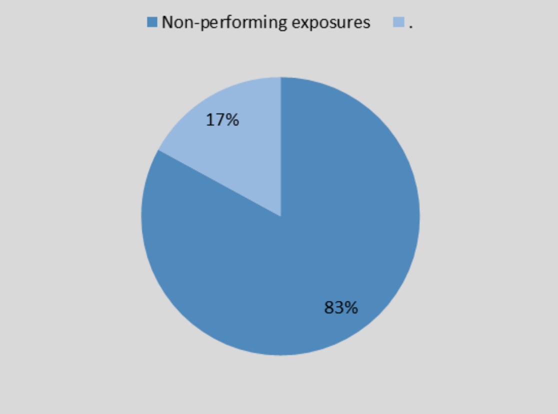
Aggregate data for CSFs

In June 2024, the total assets of CSFs amounted to EUR 1.17 billion,[110] while total equity and liabilities, including provisions, stood at EUR 694 million and EUR 477.1 million, respectively. CSFs' profits came to EUR 48.1 million, while total staff and senior management costs corresponded to 54% of their total revenues.

In June 2024, total exposures under management[111] amounted to EUR 86.3 billion, of which 81% referred to exposures serviced on behalf of credit acquiring firms[112] and the remaining 19% to exposures managed by CSFs on behalf of credit institutions. The bulk of exposures managed by CSFs on behalf of credit acquiring firms was transferred to them in the context of credit institutions' NPL reduction strategies.

The portfolio of exposures under management in June 2024 consisted mainly of non-performing exposures (83%) and, to a lesser extent, performing exposures (17%) (see Chart V.25).

Chart V.25 Structure of portfolios managed by CSFs (June 2024)



Source: Bank of Greece.

Management of exposures serviced on behalf of credit acquiring firms

The total amount of exposures managed by CSFs on behalf of credit acquiring firms stood at EUR 69.6 billion in June 2024.

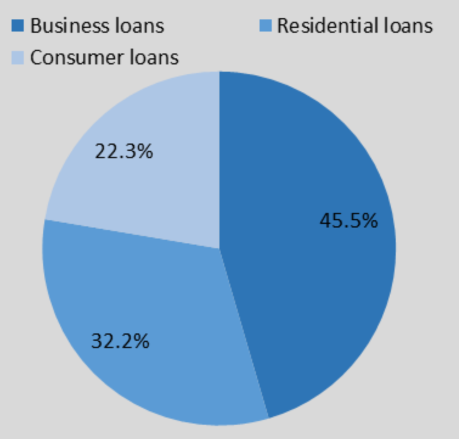
The portfolio includes mainly business loans (45.5%), followed by housing loans (32.2%) and consumer loans (22.3%) (see Chart V.26).

---

[110] All data as at 30.06.2024 are provisional and have not been audited by a statutory auditor.
[111] Exposures include all debt instruments (loans and advances, and debt securities), excluding off-balance-sheet exposures and write-offs. By means of Executive Committee Act No 206/1/03.06.2022 (in Greek), the Bank of Greece modified data to be submitted by, *inter alia*, CSFs to the Bank of Greece.
[112] Any discrepancies between the supervisory data analysed in this section of the Financial Stability Report and the data regularly published by the Bank of Greece on its website are mainly due to the different perimeter of each data release.

Chart V.26 Exposures under CSF management, by portfolio (June 2024)

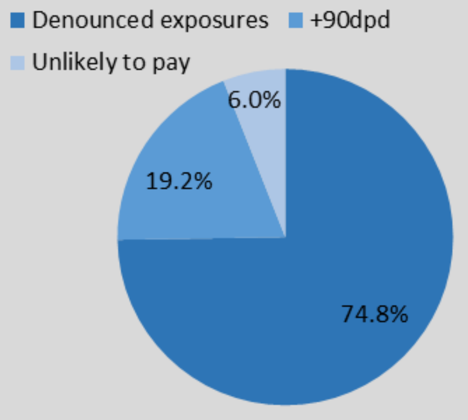
(%)



Source: Bank of Greece.

Chart V.27 Non-performing exposures under CSF management, by default category (June 2024)

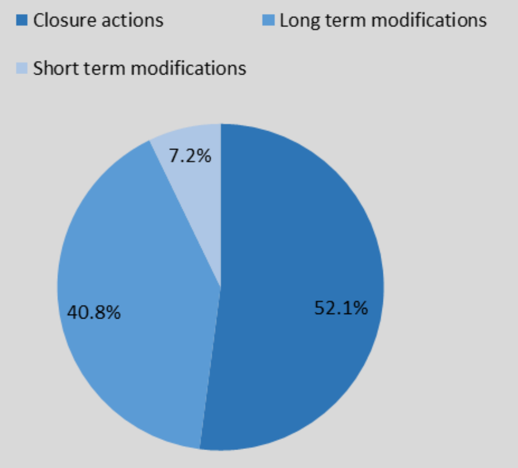
(%)



Source: Bank of Greece.

The exposures under management on behalf of credit acquiring firms are of poor credit quality, with 90% being non-performing exposures. Of the non-performing exposures that are under management, the bulk is denounced exposures (74.8%), while 19.2% are exposures that are more than 90 days past due and 6% are unlikely to pay exposures (see Chart V.27).

Chart V.28 Breakdown of forborne exposures under CSF management (June 2024)



Source: Bank of Greece.

Repayments, liquidation of collateral and write-offs of exposures managed by CSFs on behalf of credit acquiring firms stood at EUR 1.52 billion in the first half of 2024. In particular, repayments of exposures amounted to EUR 845.7 million, liquidation of collateral to EUR 390.8 million and write-offs to EUR 284.6 million.

Finally, modifications made until June 2024 represent 26.3% of the total portfolio managed on behalf of credit acquiring firms. Closure actions accounted for the bulk of modified exposures (52.1%), followed by long-term (40.7%) and short-term modifications (7.2%) (see Chart V.28).[113] It should be noted that, on the basis of June 2024 data, resolution and closure actions amounted to EUR 1.31 billion, short-term modifications to EUR 1.76 billion and long-term modifications to EUR 7.45 billion.

Capitalisation of arrears was the most common short-term modification[114] (accounting for 45% of total short-term modifications – see Chart V.29a), while the most common types of long-term

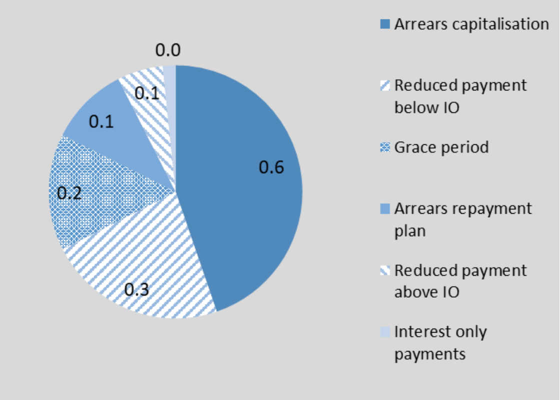
[113] According to Bank of Greece Executive Committee Act No 175/2/29.07.2020, Annex V.

[114] Short-term modifications are those with a duration of less than two years, applicable to cases where the repayment difficulties are reasonably judged to be temporary.

modifications[115] were partial debt write-down, split balance and extension of the loan term, accounting for 45%, 26% and 20% of total long-term modifications, respectively (see Chart V.29b).

Chart V.29a Short-term modifications (June 2024)

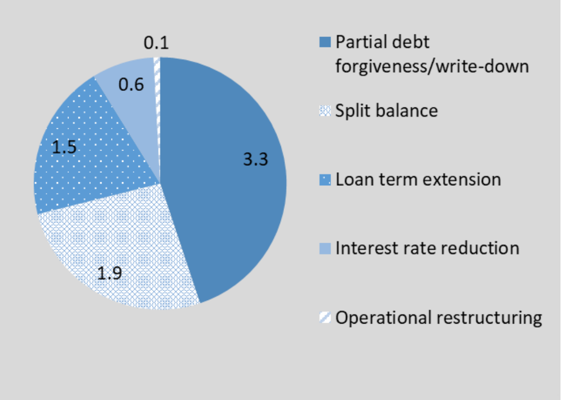
(EUR biillion)



Source: Bank of Greece.

Chart V.29b Long-term modifications (June 2024)

(EUR billion)

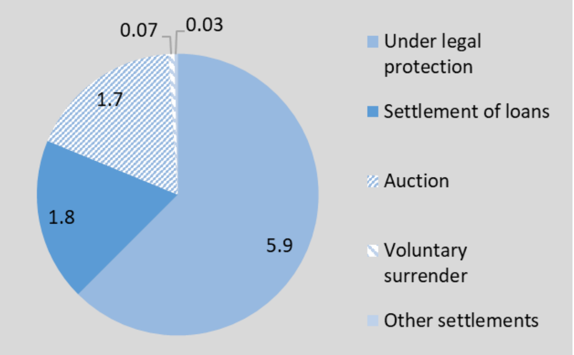


Source: Bank of Greece.

Over the same period, the most common types of resolution and closure actions[116] were settlement of loans under legal protection (62%), auctions (19%) and settlements of loans (18%) (see Chart V.29c).

Chart V.29c Resolution and closure actions (June 2024)

(EUR billion)



Source: Bank of Greece.

[115] Long-term modifications are those with a duration of more than two years, based on conservative assumptions regarding the borrower's future repayment capacity throughout the repayment schedule.
[116] Resolution and closure actions include any change in the type of loan contract or termination of the contract.

Management of exposures serviced on behalf of credit institutions

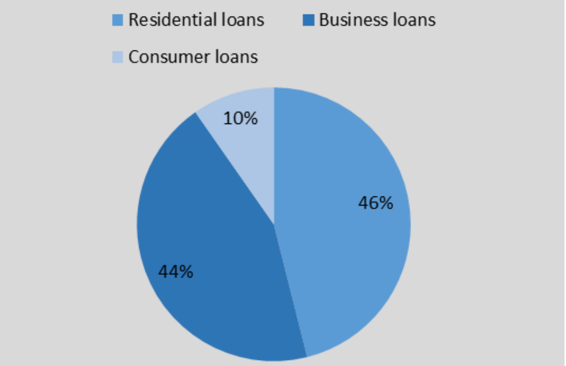
The total amount of exposures managed by CSFs on behalf of credit institutions stood at EUR 16.7 billion at end-June 2024, with 52% of these exposures being non-performing.

More specifically, the portfolio of such exposures consists mainly of business loans (44%), followed by housing loans (46%) and consumer loans (10%) (see Chart V.30).

In the first half of 2024, repayments and liquidation of collateral managed by CSFs on behalf of credit institutions amounted to EUR 0.8 billion, of which EUR 0.75 billion were repayments and EUR 0.05 billion were collateral liquidation.

Chart V.30 Breakdown of exposures under CSF management on behalf of credit institutions (June 2024)

(EUR billion)



Source: Bank of Greece.

Secondary market activity

The secondary market for loans managed by CSFs has grown considerably over the past few years. From 2019 until December 2023, the transactions carried out on the secondary market concerned 102 loan portfolios, mostly for business loans, with the value of claims totalling EUR 4.2 billion.[117] In the first half of 2024, transactions on the secondary market showed a significant increase, as they concerned 26 loan portfolios with a total value of claims worth EUR 3.3 billion (value at the date of transfer). Overall, the secondary market is expected to continue to grow further in the near future, with an increase in the number of market participants, as well as of transactions, in the context of intensified efforts on the part of CSFs to meet their targets under the Hellenic Asset Protection Scheme ("Hercules").

Key takeaways and challenges

CSFs play a significant role in managing private debt in Greece. The main factors affecting the management of non-performing exposures by the CSFs relate to lack of funding and delays in finalising legal actions and liquidations. Regarding the former, the use of the existing credit framework for refinancing restructured loans could provide the opportunity to recover part of the NPE portfolio (e.g. for working capital for businesses); however, up until today, no CSF has applied for an authorisation for refinancing of claims. Furthermore, no credit service company has so far been granted an authorisation for financing restructured claims under the new framework. In cases where all available actions have been exhausted, the delays recorded in the implementation of judicial actions and decisions hinder the effective management of private debt.

[117] In detail, the transactions per year were as follows: a) in 2019, 7 transactions with a cumulative value of EUR 106 million; b) in 2020, 13 transactions with a cumulative value of EUR 93 million; c) in 2021, 31 transactions with a cumulative value of EUR 538 million; d) in 2022, 21 transactions with a cumulative value of EUR 1,530 million; and e) in 2023, 12 transactions with a cumulative value of EUR 1,941 million.

The key challenges facing CSFs include: 1) further adjusting their governance, policies and procedures, as well as their internal control systems, to comply with the requirements of the new framework; 2) further utilising the revised out-of-court mechanism for a more effective implementation of loan workout arrangements; 3) further strengthening actions to achieve the objectives under the “Hercules” scheme; and 4) digitising processes and upgrading the services offered to borrowers. Finally, CSFs are faced with the challenge to explore alternative ways on how performing loans that will meet both the criteria of the European Banking Authority (EBA) and the current credit standards of banks could be eligible to flow back into banks’ balance sheets. The effective management of private debt will contribute to the return of part of the managed loans to banks’ balance sheets, once they have been resolved and can be reintegrated into the banking system.

3.3 PAYMENT INSTITUTIONS, E-MONEY INSTITUTIONS, PAYMENT INITIATION SERVICE PROVIDERS AND ACCOUNT INFORMATION SERVICE PROVIDERS

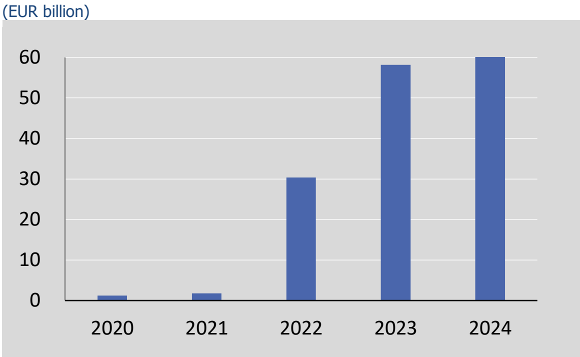
Key figures

(a) Payment institutions (PIs)

The Bank of Greece, under Law 4537/2018[118] and its Executive Committee Act 164/2/13.12.2019, currently in force, has authorised 14 payment institutions (PIs) and one account information service provider (AISP).[119]

Chart V.31 Total annual value of payment transactions by PIs

(EUR billion)



Source: Bank of Greece.

The total value of payment transactions carried out by PIs in the reference period for 2024[120] amounted to EUR 60.5 billion, up by 4% compared with the previous reference period for 2023[121] (EUR 58.2 billion, see Chart V.31). It should be noted that four PIs accounted for 94% of the total value of payment transactions.

PIs’ total equity in June 2024 amounted to EUR 96.9 million, up by 39.8% since December 2023 (EUR 69.3 million). This substantial increase is for the most part attributable to a rise in the net position of the PIs that took over the divested merchant acquiring business of the four significant banks, mainly owing to the profitability of this business. Moreover, the PI

[118] Law 4537/2018 transposed into Greek law Directive (EU) 2015/2366 (Payment Services Directive II – PSD II) establishing the regulatory framework for payment services in the internal market.

[119] In accordance with Article 14 of Law 4537/2018, the Bank of Greece publishes on its official website a public register of authorised PIs and AISPs established in Greece (Supervised institutions (bankofgreece.gr)).

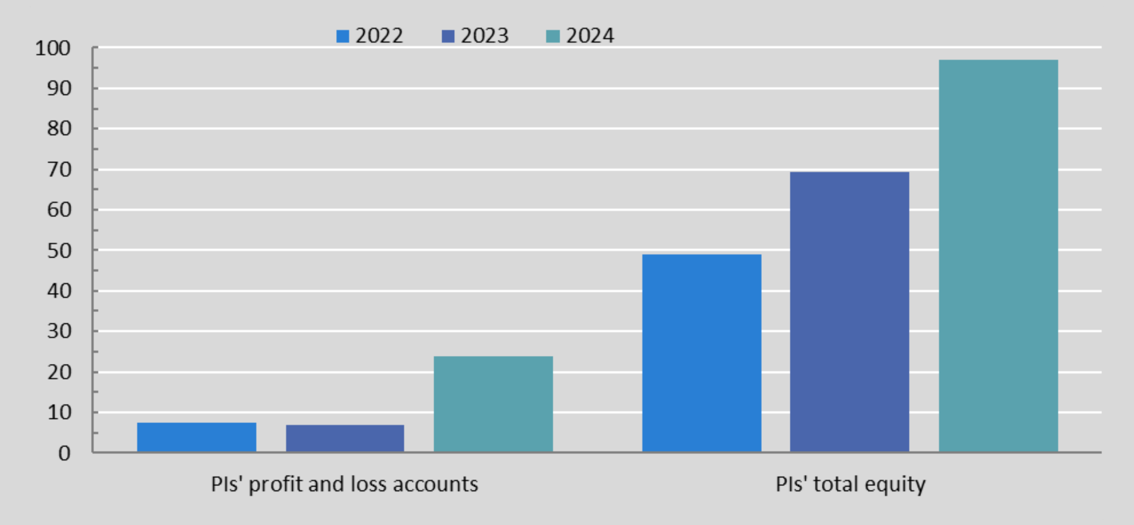
[120] Under the current regulatory framework, the total value of payment transactions relates to a 12-month period. In particular, the reference period for 2024 extends from 1.7.2023 to 30.06.2024.

[121] Under the current regulatory framework, the total value of payment transactions relates to a 12-month period. In particular, the reference period for 2023 extends from 1.1.2023 to 31.12.2023.

sector remains profitable as a whole, with pre-tax profits amounting to EUR 23.7 million in the first half of 2024, compared with EUR 6.9 million year-on-year (see Chart V.32).

Chart V.32 PIs' profit and loss accounts and own funds

(EUR million)



Source: Bank of Greece.

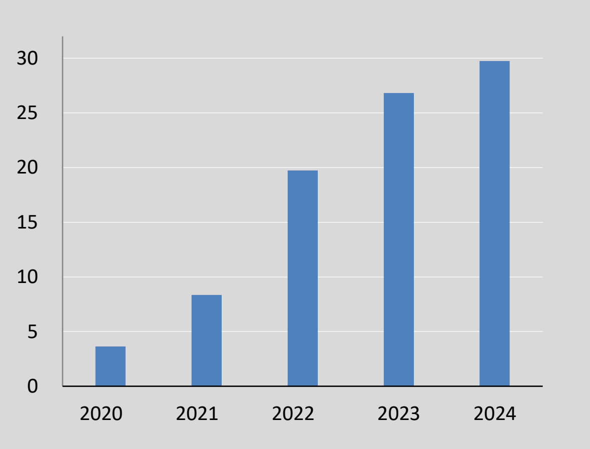
(b) Electronic Money Institutions (EMIs)

The Bank of Greece, under Law 4021/2011[122] and its Executive Committee Act 164/2/13.12.2019, as currently in force, has authorised five Electronic Money Institutions (EMIs).[123]

The total annual value of payment transactions carried out by EMIs in the reference period for 2024 amounted to EUR 29.7 billion, up by 10.8% compared with the previous reference period for 2023 (EUR 26.8 billion, see Chart V.33). The increase in the volume of payments is mostly due to activities by one EMI, which carries out 87.4% of the total value of payment transactions. In addition, two more EMIs developed their operations in the reference period for 2024, by implementing and offering e-money services[124] along with other payment services.

Chart V.33 Total annual value of payment transactions by EMIs

(EUR billion)



Source: Bank of Greece.

[122] Law 4021/2011 transposed into Greek law the provisions of Directive 2009/110/EC on the taking up, pursuit and prudential supervision of the business of electronic money institutions.

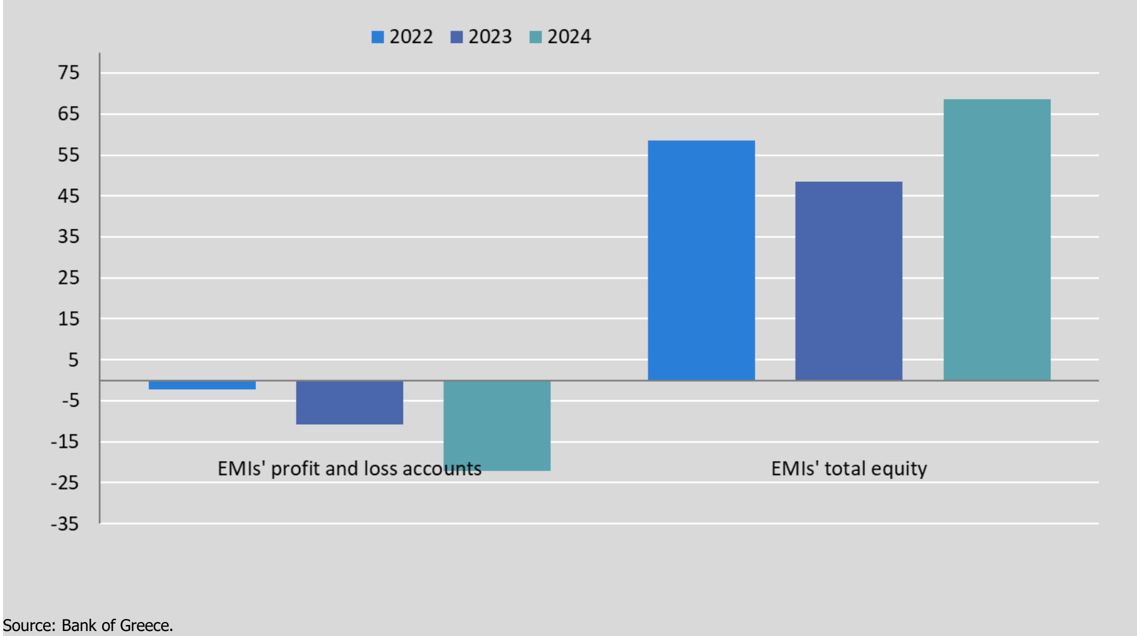
[123] Two out of five EMIs were authorised within 2024 (Bank of Greece Credit and Insurance Committee Decisions 497/1/21.3.2024 and 508/3/26.07.2024) following an expansion of the scope of the PI authorisation they already held. As they had not started to provide e-money services by the cut-off date of this report, the annual value of their payment transactions for the PI reference period has been included in PI figures (see Chart V.31).

[124] In accordance with Article 10 of Law 4021/2011, electronic money means electronically stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions and which is accepted by a natural or legal person other than the electronic money issuer.

In June 2024, the total equity of EMIs amounted to EUR 68.5 million, up by EUR 20.1 million since December 2023 (EUR 48.3 million, see Chart V.34). This increase is for the most part attributable to a rise in the net position of one EMI following a share capital increase. Additionally, in the first half of 2024, sector losses amounted to EUR 22.2 million, compared with EUR 10.8 million year-on-year, due to the significant losses of one EMI, mainly as a result of ICT spending. These losses were covered by the required capital increases.

Chart V.34 EMIs' profit and loss accounts and own funds

(EUR million)



Source: Bank of Greece.

In addition, it should be noted that 294 PIs and 223 EMIs established in other Member States of the European Economic Area have notified the Bank of Greece of their intention to provide payment services in Greece under the EU passport regime. The majority of these institutions exercise the freedom to provide services without establishment. As regards the type of payment services provided, most of the above institutions are active in the issuance of payment instruments and/or merchant acquisition, the transfer of funds and the execution of remittances.

VI. FINANCIAL MARKET INFRASTRUCTURES

1. ELECTRONIC PAYMENT INSTRUMENTS

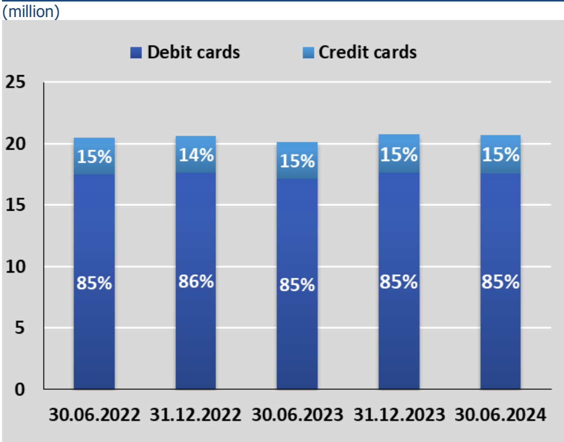
1.1 PAYMENT CARDS

Number of payment cards

On 30 June 2024, the total number of active payment cards[125] in circulation reached 20.7 million, remaining broadly unchanged in comparison to 31 December 2023 (see Chart VI.1). With respect to the various types of cards, an increase of 2% in the number of credit cards was recorded, while no significant change has been recorded in the number of debit cards. The shares of debit and credit cards to the total number of payment cards continue to stand at 85% and 15%, respectively. Finally, it should be noted that the number of prepaid cards, accounting for 10% of total payments cards, decreased by 11% on 30 June 2024 in comparison to 31 December 2023.

Chart VI.1 Number of cards per card type

(million)



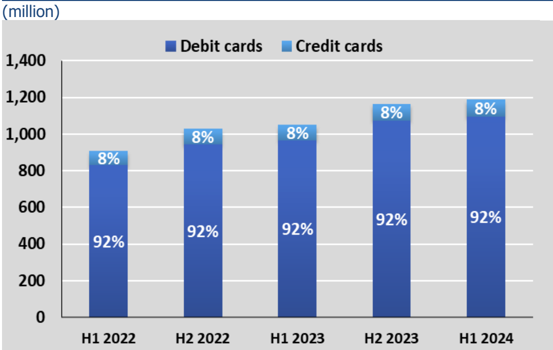
Source: Bank of Greece.

Transactions with payment cards

The total number and value of payment card transactions during the first half of 2024 slightly differed in comparison to the second half of 2023. In particular, the number of transactions increased by 2%, reaching 1,185 million (see Chart VI.2), while their corresponding value dropped by 3%, amounting to EUR 53 billion (see Chart VI.3).

Chart VI.2 Number of card transactions

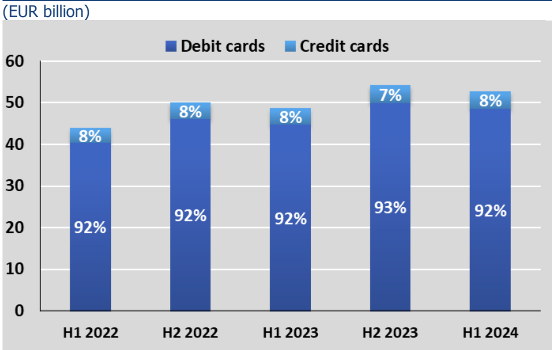
(million)



Source: Bank of Greece.

Chart VI.3 Value of card transactions

(EUR billion)



Source: Bank of Greece.

The average number of transactions per card slightly increased to 57, from 56 transactions in the second half of 2023. Debit cards remained the leading substitute for cash and continued to be widely used for low-value transactions. The average number of transactions per debit card rose to

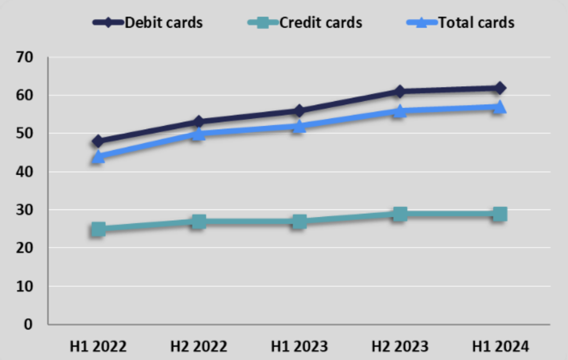
[125] For the purposes of this Review, debit cards comprise prepaid cards and cards that can be used for cash withdrawals but not for purchases. Credit cards comprise virtual cards and delayed debit cards.

62, from 61 transactions in the second half of 2023. The average number of transactions per credit card remained stable at 29 transactions (see Chart VI.4).

The average value of transactions per card reached EUR 2,542 in the first half of 2024, down by 2.5% in comparison to the second half of 2023 (see Chart VI.5). The decrease is attributed to a tantamount decrease of 2.5% in the average value of transactions per debit card, which came to EUR 2,760, from EUR 2,831 in the second half of 2023. The average value of transactions per credit card marginally dropped by 0.3% to EUR 1,313, from EUR 1,318 in the second half of 2023.

Chart VI.4 Average number of transactions per card type

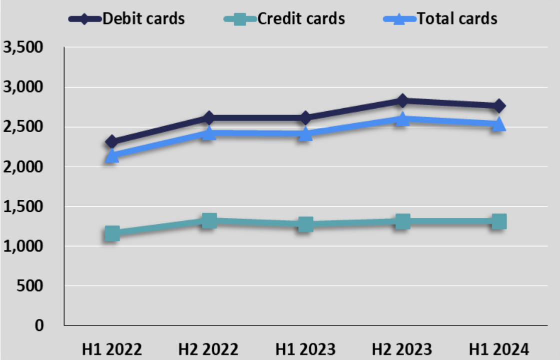
(transactions)



Source: Bank of Greece.

Chart VI.5 Average value of transactions per card type

(EUR)

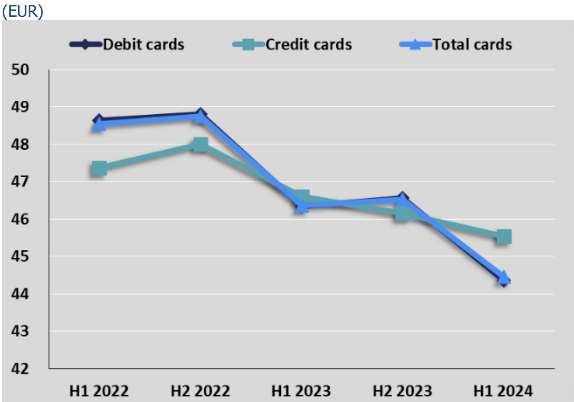


Source: Bank of Greece.

The average value per transaction for all cards fell by 4.5% to EUR 44, from EUR 46 in the second half of 2023 (see Chart VI.6).

Chart VI.6 Average value per card transaction

(EUR)



Source: Bank of Greece.

Regarding the respective types of cards, in the first half of 2024 the average value per transaction using debit cards amounted to EUR 44 from EUR 47, down by 5% half-on-half, while the average value per transaction using credit cards amounted to EUR 45 from EUR 46, down by 1%.

The downward trend in the average value per card transaction highlights the increasing use of payment cards for low-value purchases of goods and services.

Payment card transactions fraud

The number of fraudulent transactions in card payments in the first half of 2024 fell by 6% compared to the second half of 2023 (see Table VI.1). The ratio of the number of fraudulent transactions to the total number of transactions, i.e. the fraud-to-transaction ratio, decreased to 7%, accounting for one fraudulent transaction per 6 thousand transactions.

Respectively, the value of fraudulent transactions decreased by 3% in comparison to the second half of 2023 (see Table VI.2). Meanwhile, the ratio of the value of fraudulent transactions to the total value of transactions remains low (0.02%), corresponding to EUR 1 fraud value per EUR 4, 8 thousand transactions value (see Table VI.2).

A breakdown of fraud per card transaction type, i.e. (a) ATM transactions, (b) POS payments and (c) card not present (CNP) transactions, shows that fraud cases are most prevalent in CNP transactions (see Charts VI.7 and VI.8).

Table VI.1 Fraud-to-transaction ratio: Volume

(transactions)

Period	Number of transactions	Number of fraudulent transactions	Fraud to transaction ratio
H1 2024	1,185,199,780	196,535	0.02%
H2 2023	1,162,672,464	208,345	0.02%
H1 2023	1,048,193,208	202,000	0.02%
H2 2022	1,025,430,306	151,203	0.01%
H1 2022	904,213,583	136,153	0.02%

Source: Bank of Greece.

Table VI.2 Fraud-to-transaction ratio: Value

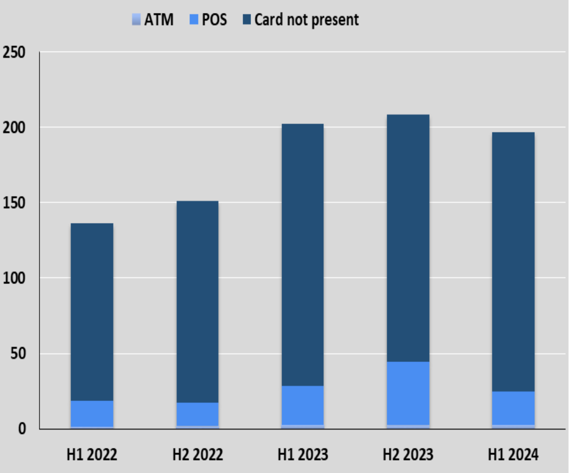
(EUR)

Period	Value of transactions	Value of fraudulent transactions	Fraud to transaction ratio
H1 2024	52,690,799,247	10,985,653	0.02%
H2 2023	54,112,403,611	11,278,698	0.02%
H1 2023	48,597,138,971	12,492,176	0.03%
H2 2022	49,991,684,614	9,995,707	0.02%
H1 2022	43,899,493,109	6,241,816	0.01%

Source: Bank of Greece.

Chart VI.7 Number of fraudulent transactions per transaction type

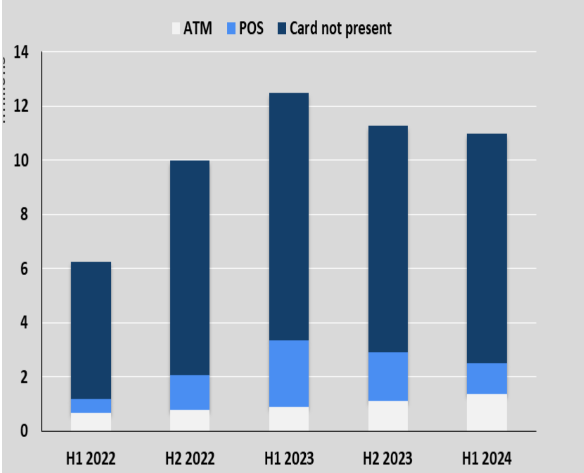
(thousand transactions)



Source: Bank of Greece.

Chart VI.8 Value of fraudulent transactions per transaction type

(EUR million)



Source: Bank of Greece.

During the first half of 2024, the number of fraudulent transactions recorded per transaction type reached 2,661 in ATM, 22 thousand in POS and 172 thousand in CNP transactions. The corresponding value of fraudulent transactions was EUR 1.4 million in ATM, EUR 1.1 million in POS and EUR 8.4 million in CNP transactions. A significant decrease of 48% in the number of fraudulent POS transactions between the first half of 2024 and the second half of 2023 should be highlighted, with their corresponding value decreasing by 36%. On the contrary, the number and the value of fraudulent transactions in ATMs increased by 11% and 25%, respectively. Finally, half-on-half increases of 5% and 1% in the number and the value of fraudulent CNP transactions, respectively, were observed (see Charts VI.7 and VI.8).

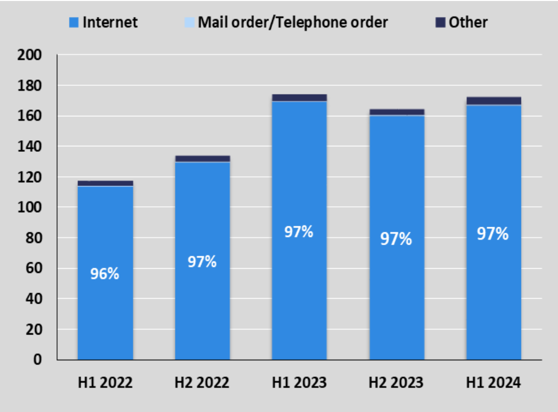
An analysis of the number of fraudulent ATM transactions in the first half of 2024 revealed that the majority referred to illegal transactions with lost/stolen cards (2.6 thousand transactions against 2.4 thousand transactions in the second half of 2023). The corresponding value of such incidents amounted to EUR 1.3 million, against EUR 1.1 million in the second half of 2023. Turning to fraudulent POS transactions, it should be noted that their significant decrease in both number and value was due to a decline in transactions with lost/stolen cards, whose number fell to 19.7 thousand transactions from 39.2 thousands in the second half of 2023, with the corresponding value shrinking to EUR 857 thousand from EUR 1.3 million.

With respect to CNP fraud cases in remote transactions via the internet, through mail or over the phone, the vast majority concerned online transactions (see Charts VI.9 and VI.10).

As in previous years, online fraud primarily refers to cross-border online purchases using cards issued in Greece. This is due to the more extensive use of the international technical standard for secure transactions "3DSecure" by Greek payment service providers compared to foreign payment service providers.

Chart VI.9 Number of fraudulent transactions in CNP transactions

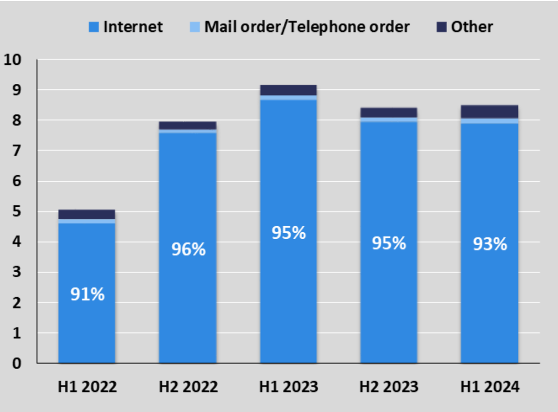
(thousand transactions)



Source: Bank of Greece.

Chart VI.10 Value of fraudulent transactions in CNP transactions

(EUR million)

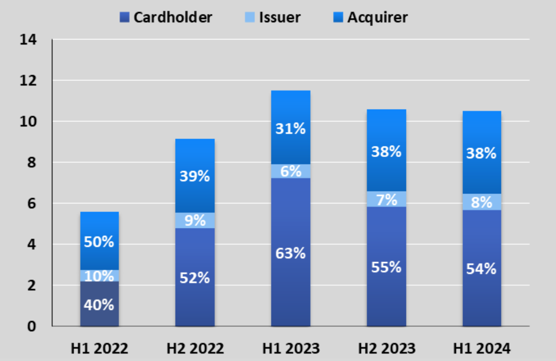


Source: Bank of Greece.

The financial losses arising from fraudulent transactions were borne by the parties involved in the card transaction chain according to their degree of fault and reached EUR 10.4 million in the first half of 2024, down by 1% and 9% compared to the second half and the first half of 2023, respectively. As suggested by the allocation of losses, cardholders sustained the bulk of losses, accounting for 54% of total losses. Card acquiring payment service providers incurred 38% of total losses and card issuing payment service providers bore 8% (see Chart VI.11).

Chart VI.11 Loss allocation in fraudulent transactions

(EUR million)



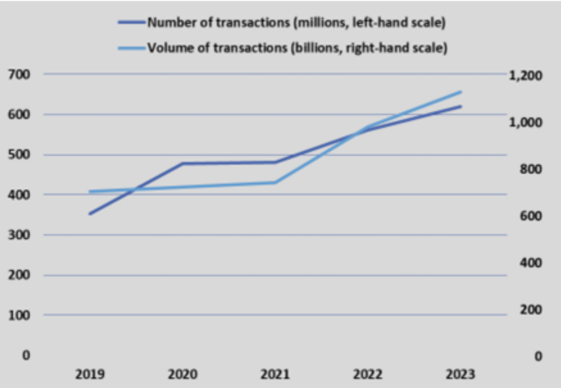
Source: Bank of Greece.

1.2 CREDIT TRANSFERS

Credit transfer transactions

During 2023, 620 million customer transactions using credit transfers were effected, amounting to EUR 1.1 trillion. Compared to 2022, the number of credit transfer transactions rose by 11% and their corresponding value by 15% (see Chart VI.12). Accordingly, the average value per transaction increased by 4% to EUR 1,815 in 2023, from EUR 1,742 in 2022 (see Chart VI.13).

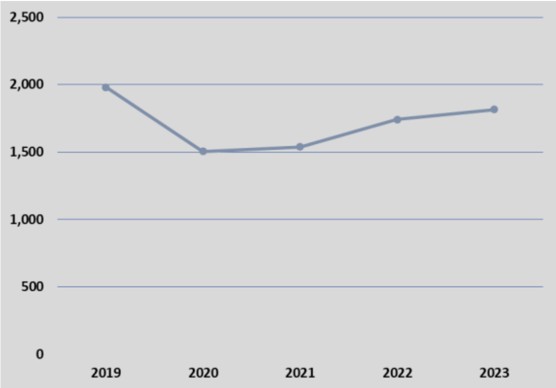
Chart VI.12 Credit transfers - Evolution of number and value of transactions



Source: Bank of Greece.

Chart VI.13 Credit transfers - Evolution of average value per transaction

(EUR)



Source: Bank of Greece.

Credit transfer transaction fraud

Following the methodology of the European Central Bank Regulation ECB/2020/59 on payment statistics, in 2023 credit transfer fraud fell by 31% in terms of volume and by 69% in terms of value, year-on-year. More specifically, a total of 11,224 fraud incidents amounting to EUR 24.6 million were recorded, compared with a total of 16,339 incidents amounting to EUR 79.5 million in 2022. The fraud-to-transaction ratio using credit transfers stood at 0,00181% in volume terms and 0,00219% in value terms, accounting for one fraudulent transaction per 55 thousand credit transfers effected and for EUR 1 of fraud per EUR 46 thousand transferred. The analysis of fraud data revealed that the main reason for the marked decrease in the number of fraud transactions in credit transfers in 2023 was the preventive measures adopted by the payment service providers, e.g. sending a one-time password (OTP) to the user as an extra authentication measure for the transaction. Besides, in 2023, two years into the implementation of Regulation ECB/2020/59, payment service providers have become more familiar with its requirements, allowing them to record fraudulent transactions with greater accuracy and thoroughness compared to 2022.

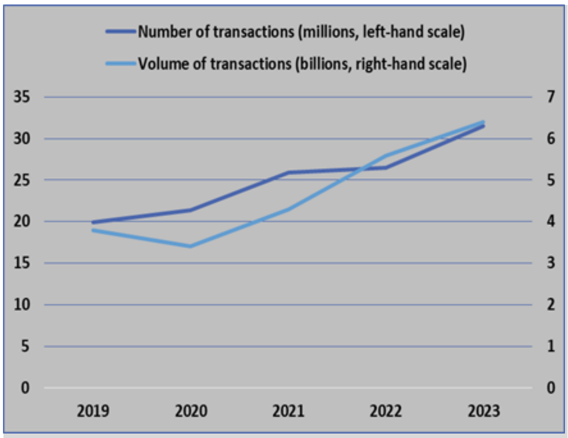
The examination of fraud data showed that the vast majority of fraud incidents is caused by (a) the issuance of a payment order by the fraudster in 78% of the reported cases and (b) the manipulation of payers by the fraudster to issue a payment order in 22% of the reported cases. According to the former fraud method, the fraudster issues an unauthorised payment order after having illegally acquired the payer's or the payee's sensitive payment data. In the latter fraud method, payers are manipulated by the fraudster to issue a payment order, or to give the instruction to do so to the payment service provider, in good faith, to a payment account they believe it belongs to a legitimate payee.

1.3 DIRECT DEBITS

Direct debit transactions

In line with the methodology of Regulation ECB/2020/59, customer transactions using direct debits significantly rose by 19% to 32 million in 2023. Their corresponding value increased by 15% to EUR 6.4 billion year-on-year (see Chart VI.14). The average value per direct debit transaction decreased by 4% to EUR 203, from EUR 210 in 2022 (see Chart VI.15).

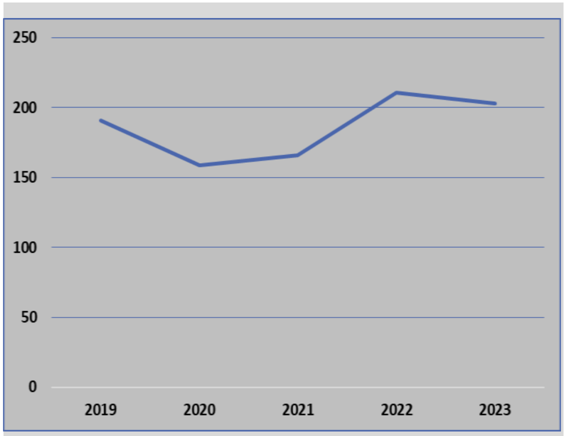
Chart VI.14 Direct debits - Evolution of number and value of transactions



Source: Bank of Greece.

Chart VI.15 Direct debits - Evolution of average value per transaction

(EUR)



Source: Bank of Greece.

Direct debit transaction fraud

Direct debits continued to be regarded as the most secure payment instrument, given that there were no fraud incidents reported by payment service providers in 2023 as well.

2. CENTRAL COUNTERPARTIES

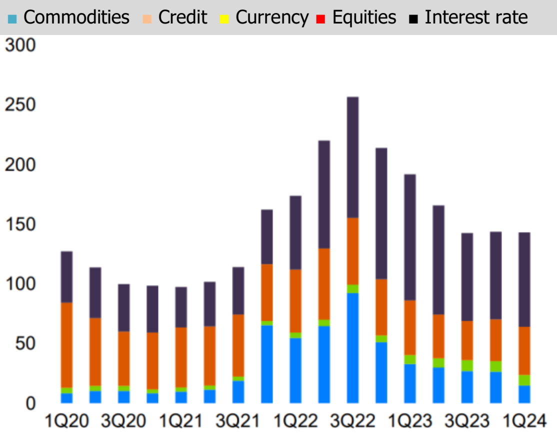
2.1 EUROPEAN DEVELOPMENTS

The financial markets of the European Union (EU) remained resilient in the first half of 2024, in an environment of significant challenges and geopolitical risks.

Initial margins collected by EU central counterparties (CCPs) for commodity derivative transactions fell in the first quarter of 2024 year-on-year, despite the fact that commodity prices rose again in 2024 after a drop in the second half of 2023. By contrast, margins collected during the same period for equity and interest rate derivative transactions rose, amid limited volatility in the equity market, despite minor fluctuations possibly due to the uncertainty surrounding the recent EU elections.

Chart VI.16 Initial margins collected by EU CCPs, by asset class

(EUR billion)



Source: ESMA.

Note: Outstanding amounts of initial margin required and excess collateral received by EU-27 CCPs for derivatives.

*****

The European Securities and Markets Authority (ESMA), which is the regulatory and supervisory authority of the EU financial markets, published the results of the fifth CCP stress test on 9 July 2024. The results confirm the overall resilience of EU CCPs, as well as third-country CCPs classified as systemically important for the financial stability of the EU or its Member States (Tier 2), to key financial risks under the considered scenarios.

Compared to previous similar exercises, this year's exercise included additional market stress scenarios, enhanced model risk assessments for concentration risk, and extended reverse stress tests for credit risk and liquidity risk. In addition, for the first time the exercise included an exploratory analysis of the impact of climate-related risk on CCPs.

A total of 16 CCPs participated in the exercise, including two UK CCPs qualifying as Tier 2, as well as all authorised EU CCPs.

Based on the findings of the exercise, it is concluded that:

• CCPs have robust lines of defence to withstand significant market shocks in combination with the default of the two clearing members with the largest exposures.

• CCPs are resilient to substantial liquidity stress events, with their clearing and investment activity playing a key role in the results of the exercise.

• Some gaps persist in the coverage of concentration risk across CCPs and across asset classes, notably for commodity derivatives.

• CCPs' exposure to climate-related risk depends on whether the financial products they clear are directly exposed to transition risk, such as commodities and energy. The majority of CCPs in the exercise have started to incorporate this risk into their stress testing framework.

• The ecosystem analysis provided information on the resources of CCPs and their clearing members and showed that the total amount of required margins increased by 56% compared to the last exercise (2022). This sharp increase can be attributed to the stress episodes in financial markets in recent years and the resulting episodes of volatility surge, thus further emphasising the systemic importance of the central clearing system for financial stability.

In line with EMIR[126], in cases where shortcomings in the resilience of one or more CCPs have been identified, ESMA will issue the necessary recommendations.

2.2 ATHENS EXCHANGE CLEARING HOUSE (ATHEXCLEAR)

The Athens Exchange Clearing House (ATHEXClear) provides clearing services and acts as a central counterparty for the clearing of transactions on the Athens Exchange (securities and derivatives markets, as well as securities lending facility), as well as transactions in derivatives on the Energy Exchange.

In the first half of 2024, derivatives and securities lending transactions cleared by ATHEXClear decreased slightly year-on-year in terms of their average daily volume, but their average daily value increased.

In more detail, the average daily volume of transactions overall in the derivatives market and the securities lending facility amounted in the first half of 2024 to 42,087 transactions, down by 17% compared to the first half of 2023 (50,694 transactions) and by 5% compared to 2023 (44,386 transactions), as presented in Table VI.3 and Chart VI.17. This change is mainly due to the decrease observed in stock futures.

Chart VI.17 Daily average traded volume in the derivatives market by type of contract and in the securities lending facility

(thousand transactions)

Source: Monthly Statisical Bulletin (Derivatives – Lending), Hellenic Exchanges – Athens Exchange S.A.

[126] Regulation (EU) No 648/2012 of the European Parliament and of the Council, of 4 July 2012, on OTC derivatives, central counterparties and trade repositories.

Table VI.3 Daily average traded volume in the derivatives market by type of contract and in the securities lending facility

	Index futures	Index options	Stock futures	Stock options	Lending (multilateral/bilateral)	Total
2019	2,461	255	39,093	85	872	42,767
2020	1,698	147	38,154	62	1,121	41,182
2021	1,205	152	46,238	71	567	48,233
2022	1,162	87	33,064	39	678	35,029
2023	1,579	144	42,188	54	421	44,386
June 2024	1,437	84	40,106	25	435	42,087

Source: Monthly Statistical Bulletin (Derivatives – Lending), Hellenic Exchanges – Athens Exchange S.A.

Conversely, the average daily value of transactions rose in the first half of 2024 to EUR 28.1 million, continuing the upward trend recorded in 2023 and showing an increase of 20% compared to 2023 (EUR 23.4 million) and of 88% compared to the first half of 2023 (EUR 14.9 million). This change was due to an increase in the average daily value of both index and stock futures (see Table VI.4 and Chart VI.18).

Table VI.4 Daily average traded value in the derivatives market by type of contract

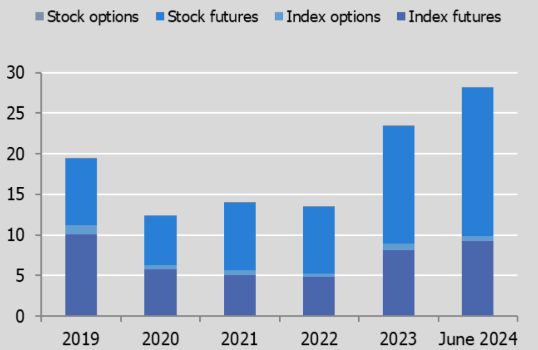
(EUR million)

	Index futures	Index options	Stock futures	Stock options	Total
2019	10.11	1.04	8.24	0.03	19.42
2020	5.81	0.51	6.02	0.03	12.37
2021	5.02	0.64	8.32	0.06	14.03
2022	4.88	0.37	8.24	0.03	13.51
2023	8.12	0.83	14.43	0.04	23.42
June 2024	9.29	0.58	18.23	0.02	28.12

Source: Monthly Statistical Bulletin (Derivatives – Lending), Hellenic Exchanges – Athens Exchange S.A.

Chart VI.18 Daily average traded value in the derivatives market by type of contract

(EUR million)



Source: Monthly Statistical Bulletin (Derivatives – Lending), Hellenic Exchanges – Athens Exchange S.A.

3. CENTRAL SECURITIES DEPOSITORIES

3.1 EUROPEAN DEVELOPMENTS

In recent months, there has been increasing discussion and analysis by regulators and market participants on the shortening of the settlement cycle in the European Union (EU) from T+2, as is currently the case,[127] to T+1 (where T is the trade date).

From the end of May 2024, the US Securities and Exchange Commission has decided to adopt the T+1 settlement cycle for most securities transactions (equities, corporate and municipal bonds, etc.[128]), while the corresponding competent authority in the United Kingdom has set the goal to shift to T+1 by the end of 2027.[129]

In the EU, the European Securities and Markets Authority (ESMA) is preparing a report on (a) an assessment of the appropriateness of shortening the settlement cycle in the EU and its potential impact on central securities depositories (CSDs), trading venues and other market participants; (b) a cost-benefit analysis of shortening the settlement cycle; (c) a detailed plan of how to move to a shorter settlement cycle; and (d) an overview of international developments on settlement cycles.[130] ESMA is expected to submit the report to the European Parliament and the Council of the EU in January 2025. A working group, made up of relevant stakeholders and industry associations, will support ESMA's work.

As ESMA's Chair mentioned in a recent speech,[131] shortening the settlement cycle represents a significant change to the way in which markets operate today, with implications for CSDs, investors, trading venues and intermediaries. These implications concern not only the trading activity but also other activities, such as securities lending as well as repo and foreign exchange transactions. In addition, as some jurisdictions have already moved to the T+1 settlement cycle[132] and given the strong interconnections among markets, challenges arise for EU market participants to deal with misaligned settlement cycles. This brings complexity, additional costs and risks.

Shortening the settlement cycle can result in: (a) a reduction in counterparty credit risk, as the time that counterparties are exposed to each other is reduced; (b) a reduction in market risk and transaction costs; (c) lower margin requirements; and (d) enhanced liquidity, as securities and funds are available sooner and this can be particularly beneficial in difficult market conditions.

On the other hand, one of the main challenges of a shorter settlement cycle is the compression of all processes: trade execution, sending orders, trade confirmation, matching, etc. This means that all internal processes, as well as the communication between the counterparties involved in a transaction, must be automated and standardised to the greatest extent possible in order to achieve settlement on the intended date. A shorter settlement cycle may increase the risk of settlement

[127] According to Article 5(2) of Regulation (EU) No 909/2014 of the European Parliament and of the Council, of 23 July 2014, on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012 (CSDR).
[128] It is noted that the settlement cycle for the US Treasury securities was already T+1.
[129] See https://www.gov.uk/government/publications/accelerated-settlement-taskforce.
[130] See: https://www.esma.europa.eu/sites/default/files/2024-10/ESMA74-2119945925-2085_EC-ECB-ESMA_High_level_joint_statement_T_1.pdf.
[131] See https://www.esma.europa.eu/document/verena-ross-speech-public-hearing-shortening-settlement-cycle-10-july-2024.
[132] Like the USA, Canada, Mexico and India.

failure as there will be less time to carry out all the relevant processes, such as finding the required securities for the trade. Also, there will be less time to identify and correct errors.

Therefore, a possible shift of the settlement cycle to T+1 will require a significant effort by market participants in order to adapt to the shorter deadlines. In addition, significant investments are likely to be required to upgrade systems and processes, as well as changes to the regulatory framework, so that all market participants adhere to the new shorter settlement cycle.

Overall, shortening the settlement cycle can represent an important step towards enhancing the safety and efficiency of financial markets, but it requires careful preparation and coordination of all stakeholders involved.

***

In July 2024, ESMA announced the launch of new public consultations[133] on different aspects of the revised CSDs regulation (CSDR[134] Refit) with the aim of further fine-tuning and clarifying the CSDR framework.

Specifically, the consultations cover:

• the information that must be provided by the CSDs to the competent national authorities for their review and evaluation process, with the aim of harmonising the information on cross-border activities and the risks to be considered by the competent authorities;

• the information to be notified to ESMA by non-EU CSDs with the aim of streamlining this information for a more accurate understanding of the core services offered in the EU; and

• the scope of the settlement discipline framework, focusing on cases of settlement fails that are not attributable to the participants in the transactions and the circumstances in which operations are not considered as trading.

The consultations are addressed to CSDs, their participants, as well as any interested parties that may be impacted by the CSDR settlement discipline framework. Their responses (which had to be sent by 9 September 2024) will be assessed by ESMA to finalise the respective proposals before their submission to the European Commission in the first quarter of 2025. Further consultations about other aspects of CSRD will follow in the coming months.

3.1 THE BANK OF GREECE SECURITIES SETTLEMENT SYSTEM (BOGS)

The Bank of Greece Securities Settlement System ("System for Monitoring Transactions in Book-Entry Securities", hereinafter "BOGS") presented continuous and uninterrupted operation in the first half of 2024, with a high level of security and efficiency of the services offered.

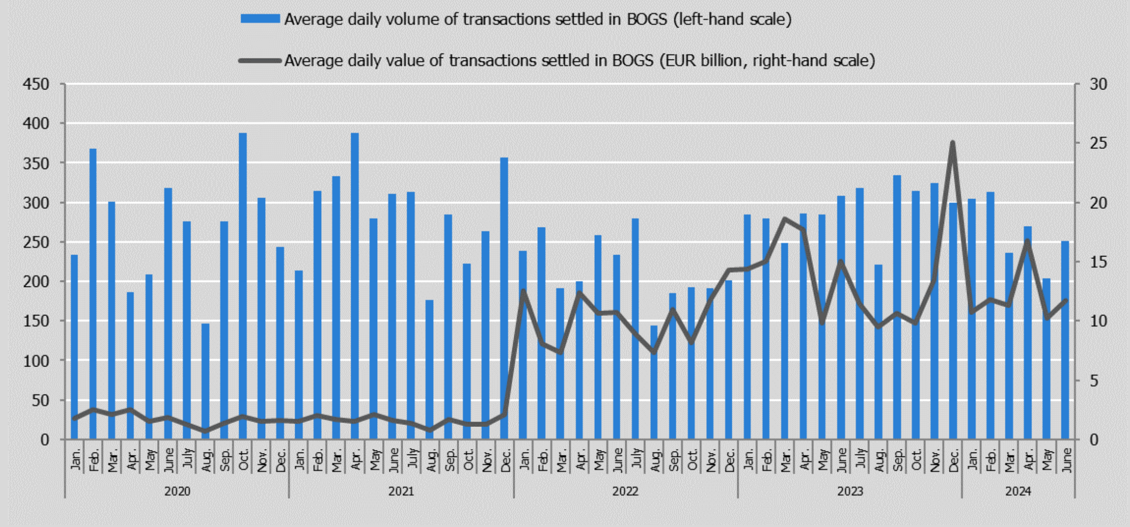
The average daily value of transactions settled in BOGS in the first half of 2024 (buy/sell transactions, repos in securities, internal transfer of securities, etc.) amounted to EUR 12.1 billion, presenting a significant reduction of 19.8% compared to the first half of 2023 (EUR 15.1 billion).

[133] See https://www.esma.europa.eu/press-news/esma-news/csdr-refit-esma-consults-rules-recalibrate-and-further-clarify-framework.
[134] Regulation (EU) No. 909/2014 of the European Parliament and of the Council, of 23 July 2014, on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012.

The observed decline in the trading activity is mainly due to reduced transactions on the special purpose Greek government Treasury bill, which is used extensively in repo transactions.[135] More specifically, the average daily value of buy/sell transactions settled in BOGS in the first half of 2024 amounted to EUR 502 million, i.e. nearly unchanged on a yearly basis, and remained high, reflecting the broadening of the investment base that has taken place following the upgrades of Greece's credit rating.[136]

The average daily volume of transactions in the first half of 2024 decreased by 6.7% year-on-year and reached 263 transactions (H1 2023: 282 average daily transactions), of which 128 were buy/sell transactions (H1 2023: 118 average daily transactions, see Table VI.5 and Chart VI.19).

Chart VI.19 Average daily volume and value of transactions settled in BOGS (2020 - June 2024)



Source: Bank of Greece.

[135] The special purpose Greek government Treasury bill was issued under Article 1, subpara. C4 of Law 4254/2014, which provides that the Public Debt Management Agency (PDMA), in order to fulfil its objective:

"As trustee and on behalf of the Greek government and in accordance with the procedure set out in Law 2628/1998 (A' 151), as applicable, may issue, hold and manage securities of the Greek government, with the sole purpose of using them to enter into sales transactions with a repurchase agreement (repos) or to provide collateral in hedging transactions, on the entire debt of the Greek government, while at the same time carrying out their cash settlement.".

[136] See Bank of Greece, *Monetary Policy Report 2023-2024*.

Table VI.5 Average daily value and volume of transactions settled in BOGS										
	Average daily transaction value (EUR million)					**Average daily transaction volume**				
	2020	**2021**	**2022***	**2023***	**2024***	**2020**	**2021**	**2022***	**2023***	**2024***
January	1,733.54	1,544.38	12,516.03	14,371.10	10,758.76	233.41	214.00	238.00	285.00	305.00
February	2,519.11	2,009.14	8,091.21	15,029.70	11,817.48	367.75	315.00	268.00	280.00	313.00
March	2,069.01	1,663.07	7,294.69	18,597.92	11,344.09	300.73	333.00	191.00	249.00	236.00
April	2,506.32	1,518.04	12,348.19	17,674.95	16,759.66	186.85	388.00	200.00	286.00	270.00
May	1,529.67	2,061.32	10,653.34	9,828.65	10,252.09	209.24	280.00	259.00	285.00	204.00
June	1,881.47	1,575.82	10,755.71	15,065.65	11,747.89	318.55	311.00	233.00	308.00	251.00
July	1,252.75	1,322.85	8,912.50	11,502.07		276.00	313.00	280.00	318.00	
August	726.86	799.06	7,365.34	9,480.23		147.00	177.00	144.00	221.00	
September	1,394.42	1,719.40	10,975.04	10,650.59		276.00	284.00	185.00	334.00	
October	1,957.54	1,255.66	8,176.61	9,780.11		388.00	222.00	193.00	314.00	
November	1,483.11	1,252.64	11,691.87	13,450.57		306.00	264.00	191.00	324.00	
December	1,606.98	2,080.48	14,253.90	25,026.42		243.00	357.00	201.00	300.00	
Monthly average values	**1,721.73**	**1,566.82**	**10,252.87**	**14,204.83**	**12,113.3**	**271.00**	**288.00**	**215.25**	**292.00**	**263.17**

Source: Bank of Greece.

* As of January 2022, transactions in the special purpose Greek government Treasury bill (under Law 4254/2014, Article 1, subpara. C4) are included in transactions data.

3.2 THE DEMATERIALISED SECURITIES SYSTEM OF THE COMPANY "HELLENIC CENTRAL SECURITIES DEPOSITORY"

The settlement activity in the Dematerialised Securities System managed by the Hellenic Central Securities Depository (ATHEXCSD) showed an increase in the first half of 2024 both in terms of the value of settled stock transactions and in terms of the daily number of settled transactions compared to the corresponding period of 2023.

More specifically, the average daily number of settled stock transactions in the first half of 2024 reached 41,844, i.e. increased by 12% compared to the first half of 2023 (37,328 transactions). At the same time, the average daily value of settled stock transactions in the first half of 2024 increased by 30% year-on-year and amounted to EUR 143.83 million, compared with EUR 110.63 million in the first half of 2023 (see Table VI.6 and Chart VI.20).

Table VI.6 Average daily number and value of settled transactions[1] in the Hellenic Central Securities Depository

	Equities	Pref. rights	Corporate bonds	ETFs	Government debt	Alternative market (stocks)	Total
Average daily number of transactions settled in ATHEXCSD							
2020	32,700	7	64	3	0.21	206	32,982
2021	29,939	56	75	2	2	312	30,386
2022	29,404	12	131	2	0	576	30,126
2023	36,172	29	166	8	0	691	37,066
Jan.-June 2024	40,429	7	197	52	0	1,160	41,844
Average daily cash value of transactions settled in ATHEXCSD (EUR thousand)							
2020	64,474.5	2.4	760.8	40.0	10.2	119.7	65,407.7
2021	70,247.6	23.5	985.6	17.0	84.7	296.8	71,655.0
2022	72,481.4	12.3	977.1	16.4	0.0	409.0	73,896.2
2023	109,501.1	17.5	888.0	85.7	2.5	543.5	111,038.2
Jan.-June 2024	140,903.2	0.4	1,330.3	295.8	0.0	1,298.3	143,828.0

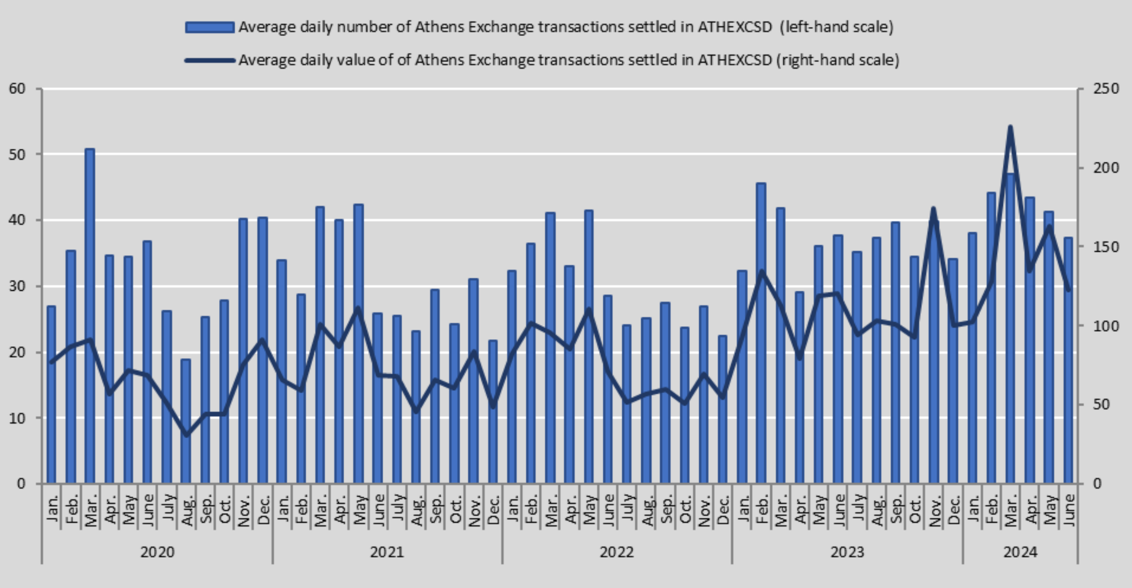
Source: AxiaNumbers Monthly Statistical Bulletin, Hellenic Exchanges – Athens Stock Exchange.

[1] Stock market transactions are the transactions of the Athens Stock Exchange that were settled in the Dematerialised Securities System, calculated by the single count method (purchases only).

More specifically, during the first half of 2024, an important increase in the number and the value of corporate bond transactions on the secondary market was observed. The average daily number of these transactions amounted to 197, compared with 166 in the first half of 2023 (up by 18%). At the same time, the average daily value of corporate bond transactions increased by 58% (H1 2024: EUR 1.33 million, H1 2023: EUR 0.84 million).

Chart VI.20 Average daily number and value of settled transactions in the Hellenic Central Securities Depository (2020 - June 2024)

(number of transactions in thousands and value in EUR million)



Source: AxiaNumbers Monthly Statistical Bulletin, Hellenic Exchanges – Athens Stock Exchange.

SPECIAL FEATURE I
A FRAMEWORK FOR ASSESSING RISKS FROM COMMERCIAL REAL ESTATE (CRE) LOANS AND INVESTMENTS IN GREECE

Elias Veloudos

Dimitris Chalamandaris

Lefteris Manarolis

Giorgos Vasiladiotis

Introduction

The monitoring and quantification of risks arising from the commercial real estate (CRE) market[137] and its interconnectedness with the financial system have been among the priorities of international supervisory authorities since the mid-2010s. The significance of this market to each economy and the financial system has been highlighted by the European Systemic Risk Board (ESRB) since 2016.[138]

In the aftermath of the pandemic, with the exacerbation of geopolitical risks resulting from Russia's invasion of Ukraine, the ESRB published a Report[139] and Recommendation[140] in early 2023 regarding vulnerabilities in the CRE sector, highlighting the risks associated with loans and investments in commercial real estate and calling on supervisory authorities to intensify their efforts for more effective assessment and monitoring.

To comply with this Recommendation (ESRB 2022/9), the Bank of Greece developed a framework for the systematic monitoring and quantification of risks arising from the (CRE) market, while also revising credit institutions' reporting requirements.[141]

According to the Recommendation, a CRE loan is defined as "*a loan extended to a legal entity aimed at acquiring income-producing real estate (or set of properties defined as income-producing real estate), either existing or under development, or real estate used by the owners of the*

---

[137] For a detailed description of the commercial real estate market and the initiatives for monitoring related risks, see the Special Feature of the Financial Stability Review (May 2023).

[138] The European Systemic Risk Board (ESRB) issued a Recommendation in 2016 (ESRB/2016/14) to the relevant designated authorities, highlighting the interconnectedness between the real estate market (residential and commercial) and the risks arising for financial stability, and encouraging national supervisory authorities to develop an appropriate supervisory framework for monitoring, collecting and processing relevant data. The main objective of the Recommendation was to monitor developments in the residential and commercial real estate markets, which are the most important segments of the real estate market for financial stability purposes, through the establishment of a harmonised framework at the European Union level. In this context, in 2020 the Bank of Greece adopted the Recommendation on closing the gaps on real estate data (ESRB/2016/14, as amended by ESRB/2019/3) by issuing Executive Committee Act 175/1/2020 (available only in Greek), which was subsequently replaced by Executive Committee Act 231/3/2024 (available only in Greek).

[139] See ESRB Report on Vulnerabilities in the EEA commercial real estate sector, January 2023.

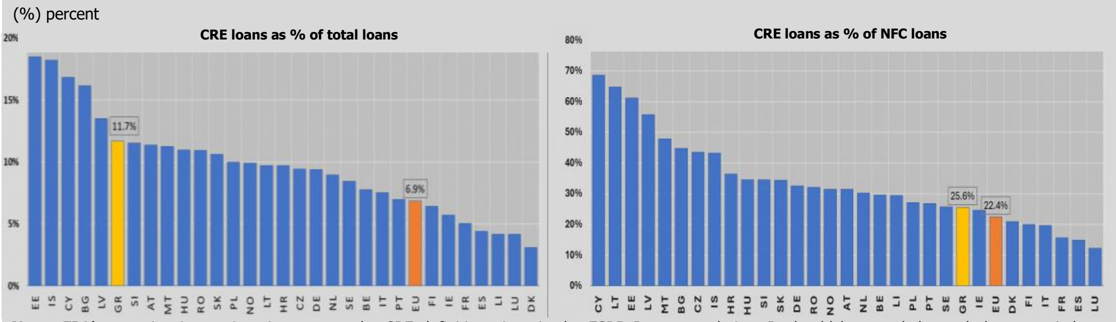
[140] Recommendation of the European Systemic Risk Board of 1 December 2022 on vulnerabilities in the commercial real estate sector in the European Economic Area (ESRB/2022/9).

[141] See Box II.2 "Revision of the framework on filling data gaps relating to real estate (ESRB/2016/14, ESRB/2019/3)" in this Report.

property for conducting their business, purpose or activity (or set of such properties), either existing or under construction,[142] *or secured by a commercial real estate property (or set of commercial real estate properties)*".

In June 2024, in the European Union (EU), CRE loans[143] as a percentage of total loans ranged between 3% (Denmark) and 19% (Estonia), while as a percentage of loans to non-financial corporations (NFCs) they ranged between 12% (Luxembourg) and 69% (Cyprus). For Greece, these figures were 11.7% for CRE loans as a percentage of total loans (EU average: 6.9%) and 25.6% for CRE loans as a percentage of loans to NFCs (close to the EU average) (Chart 1). It is worth noting that approximately half of Greece's total exposure to CRE loans is due to the use of commercial real estate as collateral for these loans, rather than the purpose of the loan being directly related to the acquisition of CRE.[144]

Chart 1. CRE loans as % of total loans and as % of loans to non-financial corporations (NFC loans) – June 2024



Note: EBA's reporting instructions incorporate the CRE definition given in the ESRB Recommendation. It should be noted that only loans carried at amortised cost are included.
Source: EBA Risk Dashboard.

In light of the above, the systemic importance of the CRE market and its direct link to increased cyclical systemic risks[145] for various sectors of the EU financial system (e.g. credit institutions, insurance undertakings, pension funds and investment firms) is confirmed and highlighted.

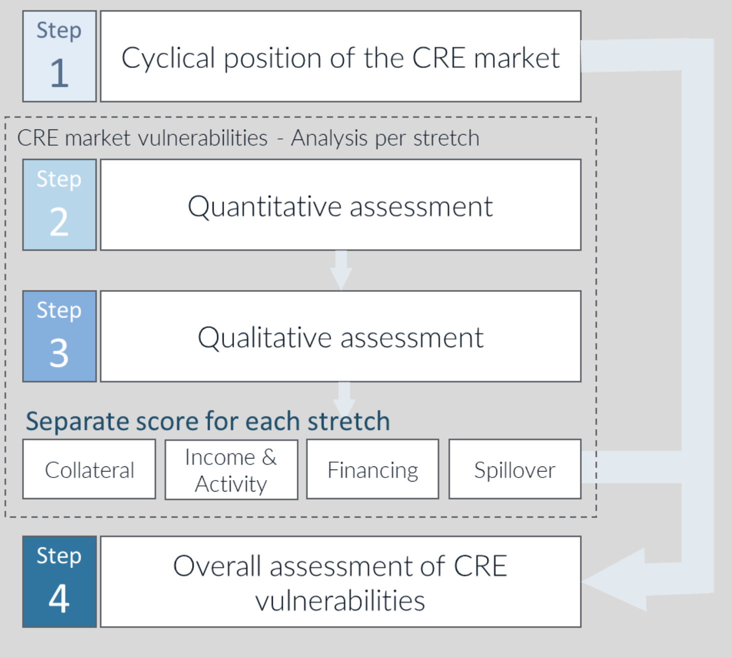
This special feature provides a detailed description of the framework developed by the Bank of Greece for monitoring and quantifying risks arising from loans and investments in commercial real estate and presents the key findings from the application of this framework to the Greek market for the second half of 2023.

[142] As long as they are not classified as residential real estate, including social housing.
[143] According to the definition given in Recommendation ESRB/2016/14, as amended by ESRB/2019/3, of the European Systemic Risk Board.
[144] See ECB Occasional paper series No 352/ June 2024, The sectoral systemic risk buffer: general issues and application to residential real estate-related risks.
[145] The monitoring and analysis of cyclical and structural risks are carried out as part of the monitoring and identification of potential systemic risk.
See ESRB Working Paper Series No 138 / September 2022 "The effect of structural risks on financial downturns" and Borio, C. and P. Lowe (2002), "Assessing the risk of banking crises", BIS Quarterly Review, December 2002.

A framework for assessing risks from the Commercial Real Estate (CRE) market in Greece

The framework developed by the Bank of Greece, based on the guidelines outlined in the Recommendation (ESRB/2022/9) and the recommended ESRB methodology,[146] is structured into four steps (Chart 2).

Chart 2 – Schematic outline of the risk assessment framework for the commercial real estate market



Source: Bank of Greece.

Step 1 includes an assessment and identification of the cyclical position of the CRE market in Greece. The cyclical position is a key indicator of the intensity and timing of risks arising from the CRE market and their expected impact on the financial system and the macroeconomic environment. Specifically, the cyclical positions are as follows: a) expansion; b) downturn; c) recession; and d) recovery. The assessment in Step 1 is based on the price index gap, which is the difference between the current value of the CRE price index and its long-term trend.[147] The rule applied for the assessment takes into account both the sign of the price index gap and the sign of its change relative to the previous year (Chart 3).[148]

[146] See [Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: commercial real estate (ESRB, 2019)](#).
[147] The long-term trend is derived by applying a one-sided Hodrick-Prescott filter (Hodrick and Prescott, 1997) to the CRE price index with a smoothing parameter (lamda) of 10,000 (Borio & Drehmann, 2009).
[148] It should be noted that, due to the lack of a unified price index for commercial real estate in Greece, the price index gap is calculated separately for two segments of the real estate market for which the Bank of Greece calculates a price index: (a) prime office space within Athens and (b) prime retail space within Athens. These price indices for the respective real estate market segments are available on the Bank of Greece website and are published on a half-yearly basis (Residential and commercial property price indices and other short-term indices).

Chart 3 – Rule for assessing the cyclical position of the CRE market

	Increasing price index gap	Decreasing price index gap
Positive price index gap	Expansion	Downturn
Negative price index gap	Recovery	Recession

Source: Bank of Greece.

Step 2 includes a quantitative assessment of CRE market risks. The assessment is primarily based on the quantitative indicators and data sources identified in the ESRB methodology. Specifically, from the set of indicators recommended in the ESRB methodology, only those that were deemed relevant to the Greek CRE market and for which sufficient data were available for analysis were retained.[149]

It should be noted that for the indicators recommended in the ESRB methodology that lacked sufficient historical data, alternative indicators and/or data sources were used. At the same time, a process for collecting data was established and activated, with the aim of incorporating these indicators into the framework in the future. To this end, and in order to improve the quality of relevant information on CRE loans and investments, the Bank of Greece revised credit institutions' reporting requirements in the second quarter of 2024 by Executive Committee Act 231/3/15.07.2024.[150]

Based on the framework, the risks associated with the Greek CRE market are grouped into four stretches: a) collateral stretch, which monitors changes in the value of CRE assets used as collateral for loans; b) income and activity stretch, which focuses on the income generated by CRE, the volume of CRE transactions and capital flows into the CRE market; c) financing stretch, which examines the sources and conditions of financing for CRE; and d) spillover stretch, which assesses the potential of CRE market vulnerabilities to spill over to other sectors of the economy in the event of a crisis.

By monitoring these four stretches, the Bank of Greece aims to identify and assess potential risks to financial stability arising from the CRE market.

Initially, each indicator in Step 2 is individually assessed for its implied risk level. This assessment is based on comparing the current value of each indicator against specific thresholds, defined based on frequency distribution. It should be noted that there are four distinct risk levels, each corresponding to a specific numerical score. The risk levels and their respective scores are as follows: (a) "no risk" (score 0); (b) "low" (score 1); (c) "medium" (score 2); and (d) "pronounced"

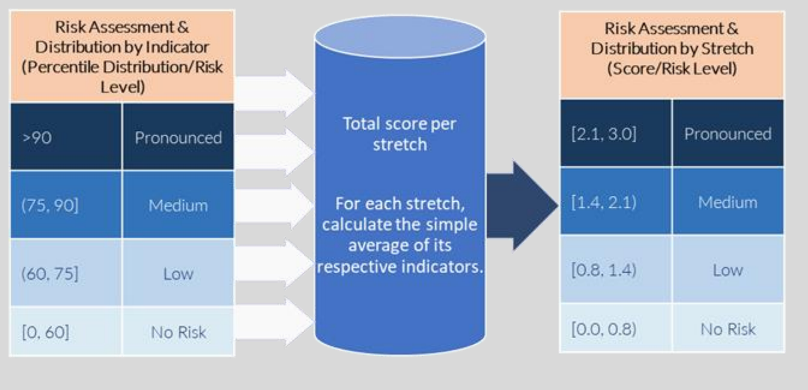
[149] By way of illustration, the indicators assessed as part of the Bank of Greece's assessment framework are listed in the Appendix.

[150] ECA 231/3/15.07.2020 "Adoption of the European Systemic Risk Board Recommendation of 31 October 2016 on closing real estate data gaps (ESRB/2016/14), as amended by the European Systemic Risk Board Recommendation of 21 March 2019 (ESRB/2019/3)" effectively replaced ECA 175/1/29.07.2020, which had been the primary tool for collecting data on this market and constituted the Bank of Greece's initial initiative to comply with the 2016 ESRB Recommendation.

(score 3). The thresholds applied in Step 2 align with those recommended in the ESRB methodology. For indicators without predefined thresholds in this methodology, thresholds were set at the 60th, 75th, and 90th percentiles of the frequency distribution (Chart 4).

According to the above criteria, (a) if an indicator's current value falls below the 60th percentile of the frequency distribution, the risk level is assessed as "no risk", with a score of "0"; (b) if the indicator value is above the 60th percentile but below the 75th percentile, the risk level is assessed as "low", with a score of "1"; (c) if the indicator value is above the 75th percentile but at or below the 90th percentile, the risk level is assessed as "medium", with a score of "2"; and (d) if the indicator value exceeds the 90th percentile, the risk level is assessed as "pronounced," with a score of "3." After completing the risk level assessment for each individual indicator, the overall score for each stretch is calculated, as the simple average of the individual indicator scores comprising each specific stretch.

Chart 4 – Risk Level Calibration and Scoring for Indicators and Risk Stretches



Source: Bank of Greece.

The overall score for each stretch is compared against the specific thresholds outlined in the ESRB methodology (2019) and the risk level for each stretch is assessed. Specifically, (a) if a stretch's overall score is below 0.8, this indicates no evidence of risk for that stretch; (b) a score between 0.8 and 1.4 suggests a low level of risk; (c) a score between 1.4 and 2.1 reflects a medium risk level; and (d) if the score is 2.1 or higher, the risk level is assessed as pronounced (Chart 4).

A qualitative assessment of risks in the CRE market follows in Step 3. This assessment is adopted to mitigate potential impacts of an automated process, allowing for flexibility through the exercise expert judgment. This approach achieves a holistic evaluation of risks in the CRE market. At the same time, it enables the identification of new risks, addressing a fundamental limitation of quantitative risk analysis, as emerging risks typically are not reflected in historical data. It is evident that, in a constantly changing financial environment, the effectiveness of risk assessment is limited when using traditional indicators to identify risks in this market.

The calibration required for quantitative indicators is a demanding exercise, as assigning specific values to levels of risk can be challenging. Statistical robustness necessitates extensive time series data, which may be lacking due to the infrequency of crises events. This scarcity of comprehensive data undermines the accuracy of quantitative models in assessing systemic risk. Consequently, the complexity of identifying systemic risk is amplified in the Greek CRE segment, where data scarcity is prevalent. Limited time series of reliable CRE indicators pose challenges in accurately identifying risk levels, further underscoring the necessity for expert judgment in filling data gaps and making informed decisions.

In Step 3, the above limitations are addressed through qualitative assessment and the application of expert judgment to determine the final level of risk by stretch. This is achieved through an adjustment factor for each one of the four individual stretches, the value of which reflects the level of risks in the Greek CRE market. For each stretch, the adjustment factor value affects the Step 2 score, resulting in a final risk level that may differ from what is derived solely from quantitative analysis, being either higher or lower.

The adjustment factor ranges from 0.5 to 1.5, in increments of 0.25. Specifically, selecting a value of '1' for the adjustment factor implies alignment of the risk level determined in Step 2 with the risk level estimated by expert judgement. As a result, the score for the category remains unchanged. When a value higher than '1' is assigned to the adjustment factor, the final estimated risk level is higher, while a value lower than '1' indicates that the final estimated risk level is lower.

Selecting an adjustment factor value different from '1' requires justification by the expert, outlining the qualitative characteristics not captured in the Step 2 outcome. The Step 3 score for each stretch is obtained by multiplying the score derived from Step 2 by the corresponding adjustment factor. The scores are then matched to a risk level as described above in Step 2 (Chart 4).

In Step 4, a comprehensive assessment of the overall risk level in Greece's CRE market is determined. This step examines the specific risk levels identified across different stretches in Step 3, focusing on how these stretches interact and the potential impact of their interplay on the market. This assessment also holistically incorporates the cyclical position of the CRE market, as determined in Step 1, along with outlook projections. Additionally, in Step 4 it is considered whether any mitigation of emerging risks is required.

Overall Assessment of CRE vulnerabilities in Greece, based on H2 2023 data

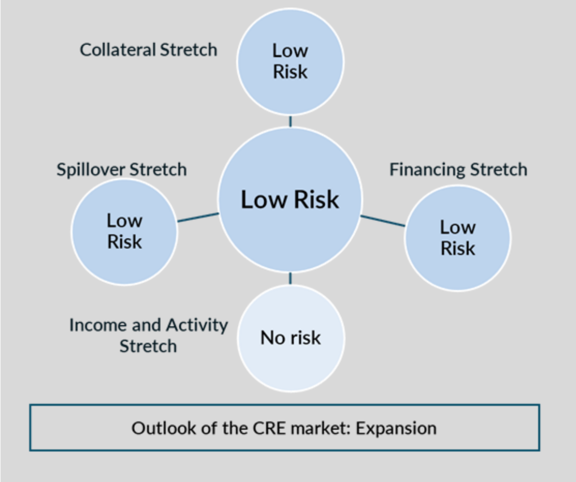
According to the risk assessment framework established by the Bank of Greece for CRE exposures, the retail property market segment is currently in an expansion phase, while the office property market segment is in a downturn phase (Step 1).

The quantitative assessment conducted in Step 2 set the indicator values and corresponding risk levels across four stretches identified by the framework. Specifically, for the second half of 2023, the risk level for the collateral stretch was assessed as "low" (0.8), for the income and activity stretch as "medium" (1.8), for the financing stretch as "no risk" (0) and, finally, for the spillover stretch as "low" (0.8).

Subsequently, the qualitative assessment (Step 3) highlighted the need to adjust the risk level in the income and activity stretch by applying an adjustment factor of 0.75. Actually, it is estimated that the quantitative assessment conducted in Step 2, through the calculation of the relevant indicators, does not accurately capture the risk of the income and activity stretch; therefore, the application of the adjustment factor is deemed necessary.[151] Following this adjustment, the income and activity stretch is reset as "low risk" (1.4).

The overall assessment (Step 4) is derived by combining the Step 1 evaluation with the findings of the qualitative assessment in Step 3. As a result, the total risk derived for the CRE market is "low" (see Chart 5).

Chart 5 – Overall Risk Assessment of the Commercial Real Estate Market (H2 2023)



Source: Bank of Greece

Considering that the market is in an expansionary phase—characterised by rising property prices at an accelerating rate—the associated risks and vulnerabilities are also increasing. However, the rate at which these risks are accumulating is currently assessed as low. The strong interconnectedness of the CRE market with the financial system and its importance within it leave no room for complacency and warrant close monitoring of CRE-related risks and developments.

[151] The risk indications identified in Step 2 were not related to the characteristics and risks associated with the CRE market; instead, they were attributed to changes in government bond yields resulting from rising interest rates.

Annex

List of Indicators	
Step 1	**Identification of the cyclical position of the CRE market**
	Retail Price Index – Athens
	Office Price Index – Athens
Step 2	**Quantitative Assessment**
	Collateral Stretch
	Average real Office Price Index growth over the past 3 years (%)
	Average real Retail Price Index growth over the past 3 years (%)
	Yield deviation from historical average (bps) – Offices
	Yield deviation from historical average (bps) – Retail
	Income and Activity Stretch
	Deviation of current and historical spreads between Office and gvt bond yields (bps)
	Deviation of current and historical spreads between Retail and gvt bond yields (bps)
	Non-residential building permits average annual growth over the last 3 years (%)
	Real estate investment funds/trusts average annual growth over the last 3 years (%)
	Financing Stretch
	Bank lending for CRE, average annual growth (%)
	Spillover Stretch
	Real estate investment funds/trusts size relative to total size of the investment fund sector
	Exposure of insurers as a percentage of total assets
	Gross value added of construction and real estate activities relative to GDP
	Top quantile of LTVs

SPECIAL FEATURE II
ADDRESSING CYBER THREATS IN FINANCIAL MARKET INFRASTRUCTURES

Eliza Dori

The challenges from cyberattacks to the financial sector have increased significantly in recent years. Specifically, it is observed that after the Covid-19 pandemic, which increased the need for the digital transformation of organisations, the number of cyberattacks on financial sector companies has almost doubled due to many factors, such as technological developments, geopolitical tensions and the growing dependence of these companies on third-party services. Cyberattacks also affect financial market infrastructures (FMIs), as was the case in early 2024, when the American securities lending platform "Equilend" faced a ransomware attack that led to the disruption of its services from the end of January until the beginning of February 2024.

A cyberattack on the financial system may cause a systemic incident that would have a negative impact on both financial stability and market confidence. For this reason, cyber threats are considered as an important systemic risk for the financial sector, and especially for financial market infrastructures.

As the cyber threat[152] landscape is constantly evolving, with attackers using advanced tactics, techniques, and procedures (TTPs), there is a need to step up protection measures against them. In this light, financial market infrastructures need to make continuous efforts to improve their cyber resilience with the aim of ensuring their secure and efficient operation.

[152] A cyber threat is defined as a circumstance with the potential to exploit one or more vulnerabilities that adversely affects cyber security. Source: Adapted from CPMI-IOSCO, FSB Cyber Lexicon, November 2018.

Cyber threats to financial market infrastructures

Social engineering and phishing attacks:[153] Unlike traditional hacking[154] techniques, social engineering attacks focus on extracting information by tapping into the psychology of potential victims and analysing people's interaction patterns.[155] Cybercriminals manipulate human psychology to encourage disclosure of confidential information, such as login credentials or bank account details. It is worth mentioning that social engineering attacks are constantly evolving and are preferred by cybercriminals because they are scalable, inexpensive and more difficult to attribute to a specific threat agent.

The landscape of cyber threats to financial market infrastructures is becoming increasingly complex, requiring constant monitoring and strong cybersecurity measures.

Insider threats: An "insider threat" is any person who has knowledge of or access to the organisation's financial infrastructure and information and knowingly or unwittingly uses the infrastructure or information to cause harm of some kind. Insider threats can endanger employees, participants, assets, reputation and infrastructure interests.[156] The term is usually associated with users who have malicious intent and may be motivated by financial gain or revenge.[157] However, user negligence, which refers to unintentional actions performed outside of approved procedures, is actually a very common cause of breaches of confidential information and exposes the infrastructure and/or its data to risk.

Third-party dependencies: As financial institutions increasingly rely on third parties (third-party dependency) for various aspects of their operations – mainly outsourcing and cloud services –, the related risk has intensified. Third parties, including suppliers, service providers and partners, may inadvertently or maliciously gain unauthorised access to sensitive data resulting in data breaches. Vulnerabilities in third-party software or hardware are exploited to create undocumented ways of gaining access to information systems (backdoors), allowing cybercriminals to bypass security mechanisms and breach their operating systems (system compromise). Supply chain attacks, which are directly related to dependence on third parties, should also be mentioned in this connection. Specifically, a supply chain attack targets the relationship between organisations and their suppliers, where an attack is considered a supply chain attack when it consists of a combination of at least two attacks: a first attack on a supplier which is used for a second attack on the main "target" to gain access to its assets. This "target" may be the end customer or another

---

[153] Phishing is the fraudulent attempt to steal user data such as login credentials, credit card information, or even money using social engineering techniques. This type of attack is usually launched through e-mail messages, appearing to be sent from a reputable source, with the intention of persuading the user to open a malicious attachment or follow a fraudulent URL (ENISA, Phishing Threat Landscape 2020).

[154] Hacking is the unauthorised intrusion into a system or service (usually involving malicious intent) using stolen user login credentials (Source: European Crime Prevention Network, Cybercrime: A theoretical overview of the growing digital threat 2016).

[155] Source: ISACA, article The Top 5 Cybersecurity Threats and How to Defend Against Them (February 2024).

[156] Source: Bank of Canada, Expectations for Cyber Resilience of Financial Market Infrastructures (October 2021), NIST Glossary.

[157] See Capital One case: A former employee of Amazon Web Services exploited her knowledge to access Capital One's data, resulting in a breach affecting 106 million customers (2019).

supplier. Thus, for an attack to be classified as a supply chain attack, both the supplier and the customer must be targets.[158]

Malware/ransomware attacks: Malware is an umbrella term used to describe malicious software intended to perform an unauthorised process having a negative impact on the confidentiality, integrity or availability of a system. One known type of malware is ransomware, where threat actors take control of a target's assets and demand ransom in exchange for the return of the asset's availability and confidentiality.[159] Initial access to the target's asset is often obtained through phishing or exploiting vulnerabilities, through which cybercriminals gain initial access to the target network. Then, they move laterally in the network to locate critical systems and data, which they encrypt and render inaccessible, and then demand ransom, usually in cryptocurrency, in exchange for the decryption key. Such attacks can affect critical infrastructure operations, potentially leading to significant financial losses and negative reputational impact, as was the case with the SWIFT network attack in 2016 and the Kaseya Virtual System Administrator (VSA) ransomware attack in 2021.[160]

Risks associated with cyber threats impacting FMIs

Liquidity risk: A disruption in payment systems may hinder interbank transfers, affecting liquidity and the ability of financial institutions to meet their obligations, while if securities in a securities settlement system cannot be settled, this can lead to failed transactions, affecting investors' trust and market liquidity. Additionally, liquidity problems might be caused by ransomware attacks, which can render financial institutions' assets inaccessible, making large depositors question these institutions' ability to meet their payment obligations, rushing to withdraw their deposits as a precautionary measure.

> *Successful cyberattacks on FMIs could lead to cascading failures of information systems throughout the financial system, causing financial instability, as infrastructures are an integral part of its smooth functioning.*

Third-party risk and concentration risk: Financial institutions' operations are increasingly dependent on services provided by third parties, such as software or cloud services, exposing them to risks such as data leakage, inadequate information protection, and legal issues and liabilities. It is noted that third-party risk is linked to concentration risk, which refers to a financial institution's over-reliance on one or a few third-party technology service providers. The potential failure of providers to provide services may lead to data losses or financial infrastructure security breaches. Without proper management of these risks, financial institutions may encounter challenging situations that could have

158 Source: ENISA, ENISA THREAT LANDSCAPE 2023 report (October 2023).
159 Source: ENISA, ENISA Threat Landscape for Ransomware Attacks report (July 2023).
160 SWIFT network attack: In 2016, the Central Bank of Bangladesh was robbed by attackers who used stolen credentials to send malicious messages through SWIFT, resulting in the theft of USD 81 million. Kaseya VSA ransomware attack: In July 2021, the ransomware attack against Kaseya VSA affected many service providers, indirectly affecting many financial services organisations that rely on these providers.

a negative impact on their operations, data security, reputation, and on overall financial stability.[161]

Reputational Risk: Repeated cyber incidents targeting FMIs could erode market confidence in the financial system. The potential doubt of users regarding the cybersecurity of the infrastructures can lead to a loss of confidence not only in the infrastructure itself, but also in the financial system as a whole, rendering users increasingly suspicious of financial markets and their smooth operation.

Systemic risk: Due to the existing interconnectedness between financial institutions, the failure of one to process transactions can affect other financial institutions that rely on those transactions, leading to a chain reaction. Given the cross-border nature of financial markets, systemic failures in one country's FMIs can affect international transactions and markets, with cross-border negative effects.

Mitigation strategies and measures

Advanced monitoring and detection systems: The use of technologies such as intrusion detection systems (IDS), intrusion prevention systems (IPS), security information and event management software (SIEM) and similar tools that provide real-time monitoring of networks, systems and applications help in timely cyber threat detection.

Patch management: Patch management is an essential cybersecurity measure for mitigating cyber risks. It involves the systematic process of identifying, acquiring, installing and verifying software updates, or "patches," to address vulnerabilities in systems and applications.

Given the ever-evolving nature of cyber threats, the financial sector faces unprecedented challenges that require innovative testing methodologies and preventative measures to be adopted.

TIBER-EU: The TIBER-EU framework (Threat Intelligence-Based Ethical Red Teaming for financial institutions in Europe) [162] is a European framework for testing resistance to cyberattacks. It provides comprehensive guidance on how authorities and entities participating in the exercise should work together to improve their cyber resilience by conducting controlled cyberattacks. Effectively, this framework offers a proactive approach to cybersecurity testing by including a set of best practices and recommendations that allow European and national authorities to collaborate, on a voluntary basis, with financial institutions by fostering a cyber resilience testing and improvement programme against sophisticated cyberattacks. So far, this framework has been implemented by the ECB and has been adopted in several countries within the EU such as Denmark, Finland, Austria, Belgium, France, Italy, etc., with each country adapting it to its own requirements and limitations.

[161] Source: International Monetary Fund, GLOBAL FINANCIAL STABILITY REPORT: The Last Mile: Financial Vulnerabilities and Risks (April 2024).
[162] Source: European Central Bank, what is TIBER-EU?

DORA: The Regulation on digital operational resilience for the financial sector (DORA),[163] which will enter into force on 17 January 2025, is an important step to mitigate cyber threats to financial market infrastructures by providing a comprehensive regulatory framework to strengthen the digital operational resilience of financial entities throughout the European Union (EU).

Use of international cybersecurity frameworks: Implementing internationally recognised cybersecurity frameworks provides comprehensive guidelines and best practices that help financial institutions effectively manage and mitigate cyber risks. More specifically, the National Institute of Standards and Technology (NIST) framework, the ISO/IEC 27001 framework, the European Union Agency for Cybersecurity (ENISA) guidelines, as well as the Cyber Resilience Oversight Expectations (CROE) and the Cyber Resilience Guidelines for Financial Market Infrastructures (CPMI-IOSCO) ensure that FMIs remain resilient to evolving cyber threats. In this connection, it is worth mentioning that compliance with Swift's[164] Customer Security Controls Framework (CSCF)[165] is also an important protective measure against cyber threats to financial institutions and FMIs, providing a strong framework of mandatory and advisory controls to mitigate cyber risks and ensure the secure use of the Swift network.

International cooperation: International cooperation enables FMIs to collectively strengthen their defences, share valuable information and respond more efficiently to cross-border cyber-attack incidents. Strategies to enhance international cooperation and information sharing include establishing formal information sharing networks,[166] developing cross-border incident response protocols and participating in international cybersecurity exercises.

Education and awareness: The human factor is often considered as the weakest link in cybersecurity, making employee training and awareness programmes vital to maintaining a strong level of cybersecurity. More specifically, regular phishing simulations help employees to recognise and respond quickly to actual phishing attempts, while employees should be trained not only to recognise cyber threats, but also to know exactly how and where to report them. Different roles within the organisation face different types of cyber threats, so tailoring training to specific roles ensures that employees receive the information most relevant to their role.

---

[163] Source: REGULATION (EU) 2022/2554 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2022 on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011

[164] SWIFT provides messaging and interconnection services to financial institutions, infrastructures, custodians, central counterparties, etc. on a global level. Swift also provides connectivity to all Eurosystem infrastructures (TARGET services), supporting the free flow of cash, securities and collateral at European level.

[165] Source: Swift Customer Security Controls Framework.

[166] See Financial Sector Information Sharing and Analysis Centers, FS-ISACs.

Conclusion

The need to continuously improve the resilience of financial market infrastructures stems from the critical role they play in the interconnection of financial markets and in the global financial system. Continuous improvement is not just a strategic goal, but a strategic imperative for the long-term cyber resilience and smooth operation of FMIs.

The sophistication and frequency of cyberattacks continue to increase, warranting a proactive approach to cybersecurity. Central banks and financial sector regulators, through regulatory frameworks, financial market infrastructures' oversight and information sharing between stakeholders, help protect them from cyber threats.

The call for strengthening international cooperation and information sharing between FMIs is becoming increasingly urgent, as effective management of their cybersecurity cannot be performed individually per infrastructure, but collectively as an ecosystem.

Defending against advanced cyberattacks requires constant adaptation of cybersecurity measures. At the European level,[167] the adoption of new technologies, such as artificial intelligence and machine learning, to improve the detection and mitigation of cyber threats to financial market infrastructures continues to be promoted, while at the same time a strong emphasis is placed on third-party risk management, ensuring that FMIs maintain strong oversight and due diligence procedures.

Finally, regarding financial market infrastructures in Greece, their response to cyber threats is aligned with EU directives and regulations, while also being supported by national strategies and actions.[168] The Bank of Greece, whose responsibility is to promote and oversee the smooth operation and efficiency of the FMIs, focuses on compliance with regulations and cooperation between stakeholders. Ensuring that all financial institutions have access to the necessary tools, expertise and funding for strong cybersecurity remains an ongoing effort.

[167] Source: European Central Bank, Cyber resilience and financial market infrastructures,
European Commission, Cyber resilience in financial sector.
[168] National Cyber Security Authority, NATIONAL CYBER SECURITY STRATEGY 2020-2025 (December 2020).
Hellenic Computer Security Incident Response Team (CSIRT): The Hellenic CSIRT facilitates the exchange of cybersecurity information between financial institutions in Greece. This includes financial market infrastructures, banks and other critical financial entities. This group provides a platform for sharing real-time information about cyber threats, vulnerabilities and cybersecurity incidents, enabling a coordinated response across the financial sector.

ISSN 2944-9065 (online)