4. INSURANCE COMPANIES AND INVESTMENT FUNDS

4.1 Domestically-relevant insurance companies

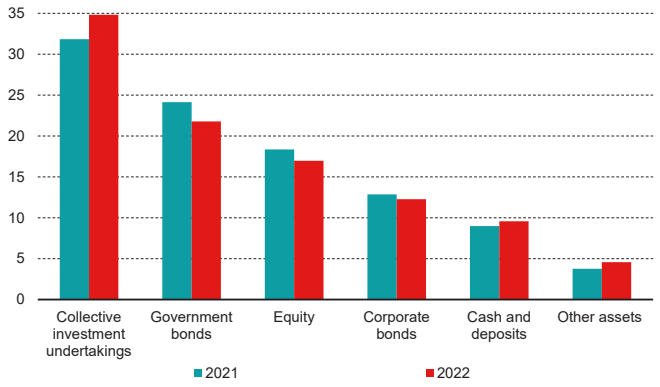
During 2022 four insurers surrendered their licence while a new company was formed bringing the number of licensed insurance companies in Malta to 68. While the domestically-relevant insurance companies remained unchanged at nine, their assets decreased by 10.9% to €3.6 billion, equivalent to 21.5% of GDP. The drop was driven by the four life insurance companies, as otherwise the other five insurance companies which specialise in non-life insurance reported higher assets in aggregate.[1]

Domestically-relevant insurance companies re-insured a median of 17.7% of their premia with foreign reinsurance companies, marginally lower than the 19.4% in the previous year. Although reinsurance is meant to mitigate risks on their books, based on the duration and nature of their liabilities, as well as their risk appetite, it also increases their connectedness with foreign counterparties.[2]

4.1.1 Domestically-relevant life insurance companies

The volatility in financial markets in 2022 affected the valuation of life insurers' investment portfolios, primarily reflecting losses in fixed-income securities due to the market price changes following monetary policy tightening. This resulted in these companies' overall assets to drop by 13.0% to €3.1 billion. As a result, the composition of the life insurers' investment portfolios has changed, with the share of collective investment undertakings (CIUs) increasing to roughly 35%, while the share of bond and equity holdings decreased (see Chart 4.1).

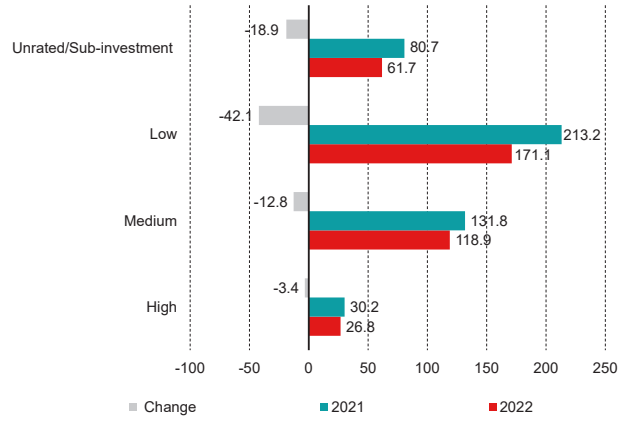
Chart 4.1
COMPOSITION OF ASSETS HELD BY THE DOMESTIC LIFE INSURANCE SECTOR
(per cent of total assets)



Source: Central Bank of Malta.
Note: Other assets mainly include deferred tax, property, recoverables and receivables, collateralised securities, structured notes, mortgages and loans.

The value of sovereign bond holdings declined by 21.5%, while corporate bond holdings fell by 17%. Notwithstanding, insurers' fixed-income investments continued to be skewed towards sovereign bonds, which accounted for around 64% of the bond portfolios as at end 2022. The majority of the sovereign bond holdings comprised of high and medium-rated euro area paper, with Maltese sovereign bonds limited to just above a fifth of the overall sovereign bonds held.

Chart 4.2
CORPORATE BOND PORTFOLIOS – INVESTMENT RATINGS – LIFE INSURANCE SECTOR
(EUR millions)



Source: Central Bank of Malta.

The rating of the corporate bond portfolios improved somewhat in 2022, with high and medium-rated bonds accounting for 38.5% of the bond portfolios, up from 35.5% the previous year, despite declining in absolute terms (see Chart 4.2).

[1] Two of these non-life insurance companies are also licensed to sell life insurance, however the life business only accounts for 5.3% of their total gross written premia.
[2] Non-life insurers tend to reinsure a greater share of their written premia. The median reinsurance part of premia was 8.3% for the life insurance sector and 35.0% for the non-life insurance sector.

Nonetheless, at 61.5%, unrated and sub-investment grade corporate bonds maintained a dominant share in the corporate bond portfolios, despite decreasing in both absolute terms and as a share of overall bonds. This resulted in a sustained concentration risk towards corporate exposures with relatively higher credit risk. Corporate bond holdings remained concentrated towards the euro area, with the exposure to Maltese companies accounting for only 7.2% of the corporate bond portfolios.

In 2022, equity markets experienced increased uncertainty, which drove the overall value of equity holdings down by 19.5%, even though life insurers took the opportunity of investing in equities at lower prices. Equity holdings remained primarily concentrated in NFCs based in the US and the euro area, with domestic entities accounting for just 17.3% of the total equity portfolios, primarily in firms operating in the real estate and the financial and insurance sectors.

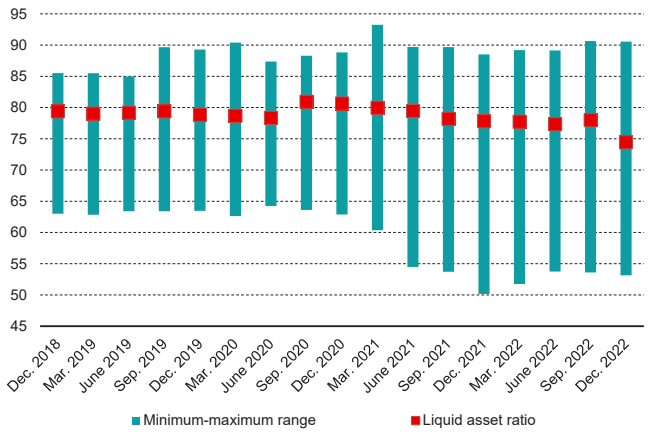
Participation in CIUs also declined, but by a more contained rate of 4.8%. As a result, their share in overall assets rose to more than a third. Drops were recorded across participations in euro area equity and debt funds, but investments in euro area money market funds (MMF) and intragroup infrastructure funds rose.

Domestic life insurance companies continued to maintain almost a tenth of their balance sheet in cash and deposits, though over the year these contracted by 7.3%. The deposits were held almost entirely with domestic banks. Other assets include property, which is primarily held for investment purposes and accounted for 4.2% of their balance sheet. Mortgages and loans increased marginally but remained limited to 0.8% of the aggregate balance sheet, reflecting domestic life insurers' limited involvement in non-traditional operations.

The liquid assets ratio fell by 3.4 percentage points to 74.5% in 2022, largely because of lower holdings of sovereign bonds and equities (see Chart 4.3). Heterogeneity among life insurers remained noticeable, albeit declining slightly compared to a year ago.

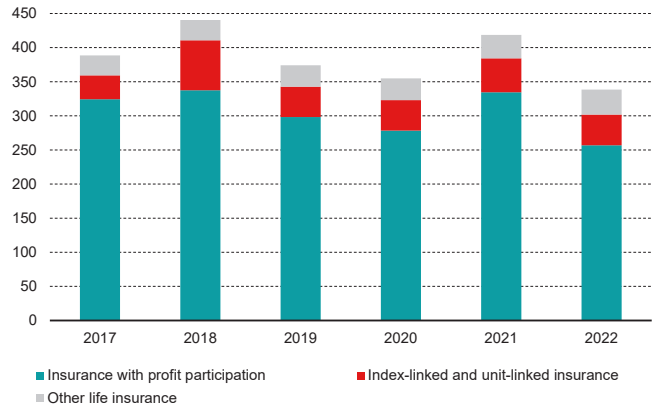
Gross written premia decreased by 19.3% in 2022, with the fall mainly reported in the second half of the year (see Chart 4.4). This also reflected the volatility experienced in financial markets, with the largest contraction observed in products offering 'insurances with profit participation,' where premia fell by 23.2% compared to 2021 as clients shied away from such investments. As a result, their share of overall

Chart 4.3
LIQUID ASSET RATIO OF THE DOMESTIC LIFE INSURANCE SECTOR
(per cent)



Source: Central Bank of Malta.

Chart 4.4
GROSS WRITTEN PREMIUM OF THE DOMESTIC LIFE INSURANCE SECTOR BY LINE OF BUSINESS
(EUR millions)



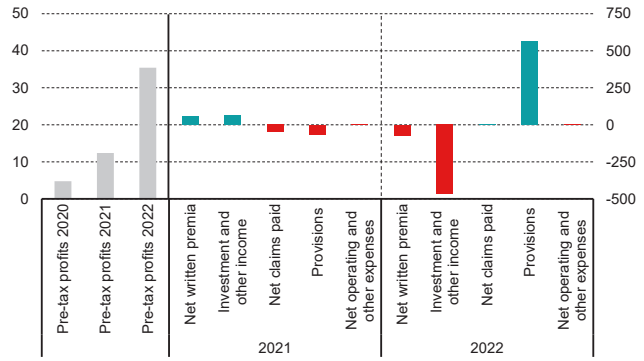
Source: Central Bank of Malta.

premia fell by 4.0 percentage points, but at 75.9%, these products still accounted for the bulk of premia. While 'index and unit-linked policies' also declined, in line with market volatility, their share of gross written premia climbed to 13.3%. This shows an overall decline in demand for such policies. Otherwise, the gross written premia of 'other life insurance products,' which includes mortgage life insurance, increased by 6.6%, to reach about 11% of gross written premia, in line with the continued strong interest in the property market.

Against the backdrop of adverse financial market developments, the life insurance sector registered a loss on investments, with a decrease of €467.6 million compared to the previous year's gains (see Chart 4.5). Furthermore, net written premia also decreased by 18.9%, while operational expenses increased by 2.4%, both negatively impacting life insurers' profitability. Nevertheless, life insurance companies were able to increase their profitability, with a profit before tax of €35.4 million in December 2022, an increase of 186.0% over the previous year. This increase in profits can be attributed to two factors, a reduction of €561 million in provisions for unearned premia and claims, coupled with a small decline in net claims of 1.3%. This resulted in 7.3 and 0.8 percentage points increases in the ROE and ROA, respectively, to 11.2% and 1.1% by December 2022. The expense ratio, which compares net premia after reinsurance to the costs incurred to obtain and maintain policies, rose by 2.6 percentage points to 13.0%.

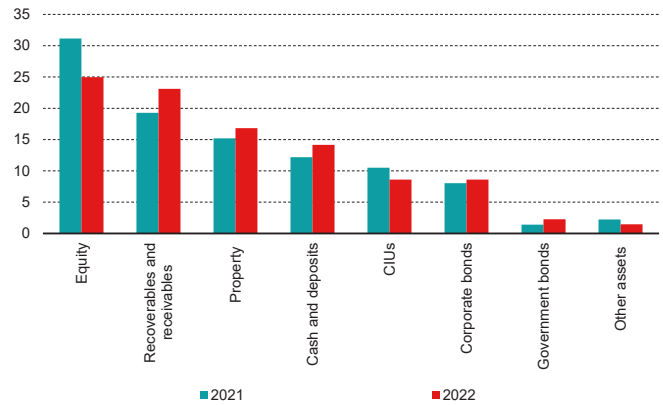
The capitalisation of life insurance firms has been somewhat negatively impacted by the inflationary pressures and interest rates hikes, resulting in higher capital requirements while overall eligible own funds fell. As a result, the overall Solvency Capital Requirement (SCR) coverage ratio fell by 47.5 percentage points to 170.5%. Nevertheless, such ratio remained well above regulatory requirements and the quality of eligible own funds has remained strong, with nearly all held in the highest quality category composed of Tier 1 capital.[3]

Chart 4.5
MAIN CONTRIBUTORS TO PROFITS – DOMESTIC LIFE INSURANCE SECTOR
(EUR millions)



Source: Central Bank of Malta.
Note: Grey bars indicate pre-tax profits in absolute amounts. Teal (positive) and red (negative) bars indicate yearly contribution to profits. These figures are based on management accounts.

Chart 4.6
COMPOSITION OF ASSETS HELD BY THE DOMESTIC NON-LIFE INSURANCE SECTOR
(per cent of total assets)



Source: Central Bank of Malta.
Note: Other assets mainly include mortgages and loans.

4.1.2 Domestically-relevant non-life insurance companies

The balance sheet of domestic non-life insurers expanded by 2.9% to around €539 million in December 2022, or 3.2% of GDP. The most significant increase was in recoverable and receivables, which occurred primarily in the first half of the year, to represent about 23% of their assets (see Chart 4.6). Otherwise, the investment portfolios of non-life insurers fell, driven by equity holdings, which decreased by 4.8% to around 56% of the

[3] The Solvency II Directive mandates that insurance companies to hold own funds that are at least equal to the SCR, which translates into a SCR coverage ratio of 100%.

investment portfolios, or around 25% of assets. The share of CIUs also declined slightly to 19.4% of investment holdings. In contrast, bond holdings increased by 6 percentage points to 24.0%.

Non-life insurers' bond portfolioss grew by 18.6%, largely in the second half of the year, as they took the opportunity to buy high-quality bonds at discounted prices as bond yields rose. Growth was driven mostly by sovereign bonds, although corporate bond holdings also increased. As a result, non-life insurers' holdings of high-quality bonds more than doubled but remained limited to 8.2% of the bond portfolios. Holdings of medium-rated bonds climbed by more than a quarter to 23.6% of the overall portfolios, while the share of corporate bonds rated in the lowest investment-grade category or unrated/sub-investment declined but continued to represent a significant share of the overall portfolios at 35.3% and 41.7%, respectively.

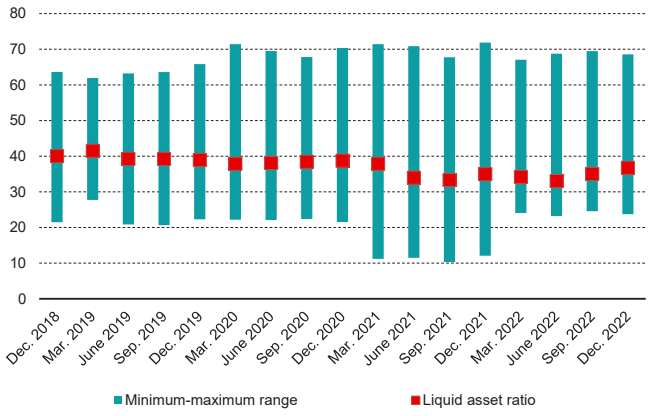
In contrast, the value of equity holdings fell by 17.5%, owing predominantly to the drop in financial markets, as otherwise non-life insurers sought to increase their holdings by taking advantage of the bear market. The proportion of equity holdings to total assets fell by 6.6 percentage points to 25.0%. Similarly, participation in CIUs declined to 8.6% of overall assets.

Cash and cash equivalents increased by 19.5% to 14.2% of total assets. Additionally, non-life insurers' exposure to the domestic real estate market increased slightly to 16.8% of total assets, while other assets declined to account for only 1.5% of these firms' total balance sheet holdings.

The liquid assets ratio in the non-life sector climbed by 1.7 percentage points to 36.7% in December 2022, owing mostly to the increase in cash and bond holdings (see Chart 4.7). Furthermore, compared to December 2021, the disparity between non-life insurers narrowed, indicating a considerable improvement in the least liquid non-life insurance companies.

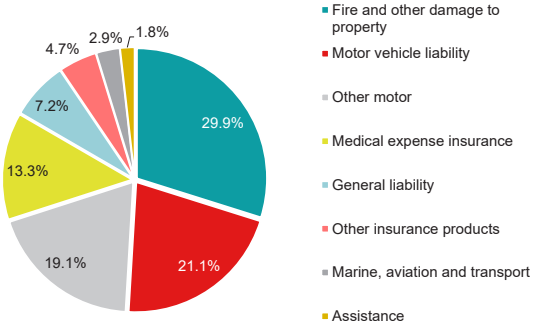
Gross written premia increased by 10.2% in 2022, to nearly €288 million. This reflected increases of varying extent in most lines of business except for income protection insurance and workers' compensation insurance, both of which fell slightly. Property damage and general liability insurance registered the largest growth in written premia, at 12.2% and 25.2%, respectively. As a result, property damage insurance accounted for almost 30% of total gross written premia, reflecting the continued high interest in the property market (see Chart 4.8). The motor-related category climbed

Chart 4.7
LIQUID ASSET RATIO OF THE DOMESTIC NON-LIFE INSURANCE SECTOR
(per cent)



Source: Central Bank of Malta.

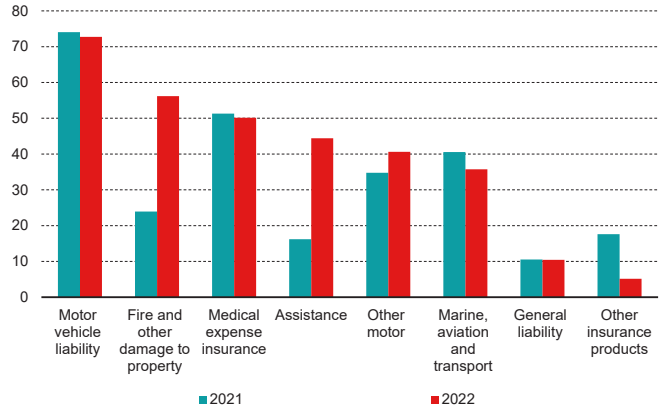
Chart 4.8
GROSS WRITTEN PREMIUM OF THE DOMESTIC NON-LIFE INSURANCE SECTOR BY LINE OF BUSINESS
(per cent)



Source: Central Bank of Malta.
Note: Solvency II Reporting. Other insurance products include workers' compensation, income protection, miscellanous financial loss, other life insurance and profit participation, index-linked and unit-linked insurance.

by 6.7% and continued to be the most important non-life business segment, accounting for 40.2% of overall written premia. The increase in gross premia was offset by higher gross claims, resulting in the pay-out ratio to increase from 40.6% in 2021 to 50.3% in 2022.[4] The highest pay-out continues to be reported in the motor vehicle liability, where around 73% of the premia was paid out as claims (see Chart 4.9). Property damage follows, albeit at a lower rate of about 56%. The marine, aviation and transport, medical insurance, and other smaller business classified as 'other' have meanwhile recorded a drop in their pay-out ratio.

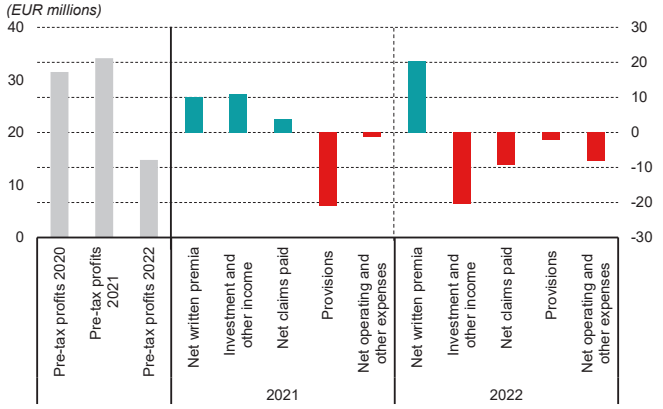
Chart 4.9
GROSS PAYOUT RATIO BY LINE OF BUSINESS
(per cent)



Source: Central Bank of Malta.
Note: Solvency II reporting. Other insurance products include income protection, miscellaneous financial loss and workers' compensation insurance.

The non-life sector reported an aggregate profit before tax of €14.8 million in December 2022, a decrease of 56.8% compared to the previous year, pushing the pre-tax ROE and ROA down by 8.9 and 3.8 percentage points, to 7.0% and 2.8%, respectively in December 2022. This was driven by lower investment income which fell by €20.5 million, in view of unfavourable market dynamics (see Chart 4.10). Furthermore, increases in net claims paid and operating expenses increased by €9.1 million and €8.1 million, or 12.7% and 13.2%, respectively in part reflecting the consequences of increased inflation. High inflation also contributed to the technical provisions to increase by €2.0 million, or 14.2%, reflecting the expectation of further increases in the costs of forecasted claims and operational expenditures. On the other hand, the decrease in profitability was alleviated by an increase in net written premia of €20.5 million, or 12.0%. As operational developments almost offset each other, the combined ratio increased marginally by 0.8 percentage points to 77.2%, staying below 100%, indicating that non-life insurers were still able to generate positive underwriting results.

Chart 4.10
MAIN CONTRIBUTORS TO PROFITS – DOMESTIC NON-LIFE INSURANCE SECTOR
(EUR millions)



Source: Central Bank of Malta.
Note: Grey bars indicate pre-tax profits in absolute amounts. Teal (positive) and red (negative) bars indicate yearly contribution to profits. These figures are based on management accounts.

The solvency position of non-life insurers remained strong, with the overall SCR coverage ratio standing at 239.1% as at end 2022, a 6.3 percentage-point decrease from the previous year. This however remained significantly higher than regulatory capital requirements, with the quality of eligible own funds robust, nearly all held in Tier 1 capital.

4.1.3 Risk outlook

Global concerns in 2022 shifted away from the pandemic toward heightened geopolitical risks, rising inflationary pressures, and the ensuing financial tightening. As a result, financial markets were adversely impacted,

[4] When the reinsurance part is included, a net pay-out ratio of 48.1% in 2021 would be reported, rising to 48.6% in 2022.

translating into substantial losses in investment income and significant changes in the composition of balance sheets. Heightened uncertainty remains, and the outlook for the global economy is still overshadowed by the war in Ukraine, inflation, as well as concerns on financial vulnerabilities. Such developments could continue to exert pressure on the domestic insurance sector, particularly for non-life insurers, which are more vulnerable to rising claims costs. In contrast, most pay-outs for life insurance policies and annuities are fixed in monetary terms and do not increase in line with inflation. However, due to its negative impact on policyholders' disposable incomes, inflation presents underwriting risks for the insurance sector in general, as it may result in a drop in demand for insurance products. This has already started to manifest itself in lower demand for life insurance products. Yet, the fact that insurers continue to be well capitalised means that the sector is well positioned to absorb shocks.

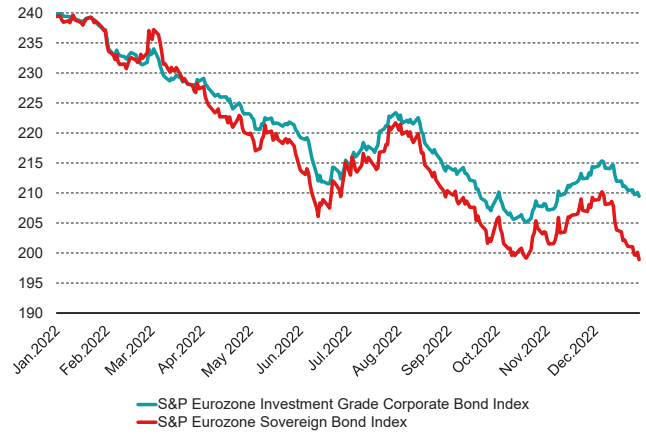
4.2 Domestically-relevant investment funds

By the end of December 2022, 37 sub-funds were classified as domestically-relevant.[5] All but one remained licensed as retail Undertakings for the Collective Investment in Transferable Securities (UCITS), with the remaining sub-fund licensed as a Professional Investor Fund (PIF).

The overall assets of these sub-funds decreased by 18.7% to €1.5 billion, representing about 9% of GDP. This reflected market changes, partly driven by tighter monetary policies by major central banks to fight inflation. Both equity and bond prices plunged, even though portfolios managers generally use bonds as portfolios stabilizers and a diversifier to stocks. Indeed, the major European corporate and sovereign bond indices registered significant declines throughout the period (see Chart 4.11). Furthermore, after recovering from the effects of the pandemic, the equity market once again experienced strong declines, driven by tightening financing conditions, increased uncertainty, and geopolitical developments. In fact, both the Euro Stoxx 600 and the S&P 500 registered significant losses, especially in the third quarter of 2022, strongly impacting the results of funds exposed to them.[6]

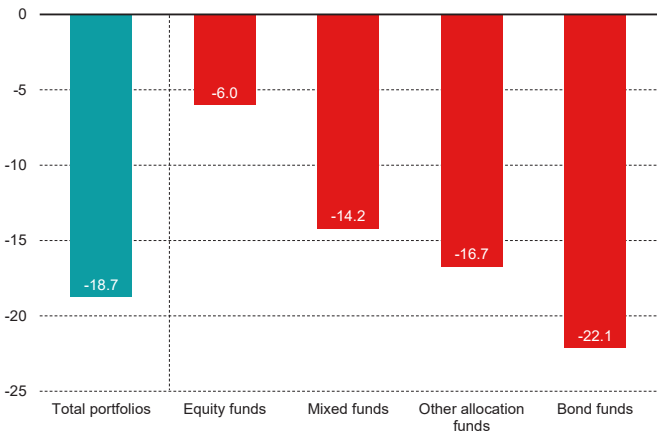
Bond funds contracted by 22.1% during 2022, with 15 sub-funds accounting for 67.8% of the overall assets, a slightly lower share when compared to the previous year (see Charts 4.12 and 4.13). The decline in equity funds was more contained, representing 13.0% of overall assets. The remaining sub-funds,

Chart 4.11
PERFORMANCE EUROZONE BONDS INDICES
(index)



Sources: S&P; Central Bank of Malta.

Chart 4.12
CHANGES IN OVERALL ASSETS BY MAIN STRATEGY
(per cent)



Source: Central Bank of Malta.

[5] Three sub-funds were excluded by end 2022 as they either surrendered their licenses or were redeemed while two new sub-funds were included as domestic relevant. For analysis purposes, the domestically-relevant sub-funds active in the respective period are considered within the respective periods.

[6] This for example reflected the uncertainties originated from the turmoil in the UK government bond market last autumn that spread into other markets.

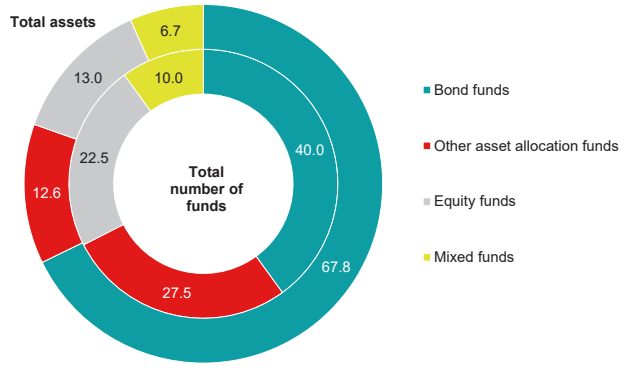
being other allocation funds and mixed funds, also reported drops in their asset values, standing at 12.6%, and 6.7% of the overall assets, respectively.

4.2.1 Asset composition and investment strategies

Fixed-income securities remained the main instrument of choice for domestically-relevant investment funds, accounting for around two-thirds of the domestic sub-funds' overall portfolios (see Chart 4.14). However, these declined by almost 20% to their lowest share in the last five years. The sharp increase in interest rates significantly impacted market prices, prompting fund managers to shift towards a more equity-oriented exposure, in search for higher returns to balance the losses registered in the bond market. Although equity holdings fell by 10.3%, this was driven by price developments as otherwise funds sought to increase their holdings. As a result, the share of equity holdings on overall assets rose by 2.7 percentage points, representing the highest share in the same period under review. Meanwhile, cash and deposits continued to decline, dropping by 2.0 percentage points to 4.9% of overall assets. Nonetheless, liquidity concerns for domestically-relevant investment funds remained contained (see section 4.2.3).

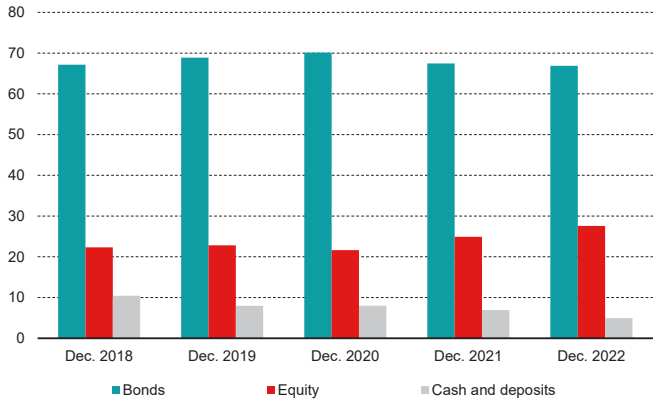
A significant share of the bond holdings remained invested in sovereign bonds, even though these registered strong declines of around 27%. As a result, their share declined by 4.7 percentage points to 46.3% of the overall bond portfolios (see Chart 4.15). The drop was mainly driven by holdings of MGS, which fell by 29.1%, although they continued to represent the bulk of sovereign bonds, accounting for 85.9% of the overall share of sovereign bonds. In contrast, holdings

Chart 4.13
DOMESTIC INVESTMENT FUNDS BY MAIN STRATEGY AS AT DECEMBER 2022
(per cent)



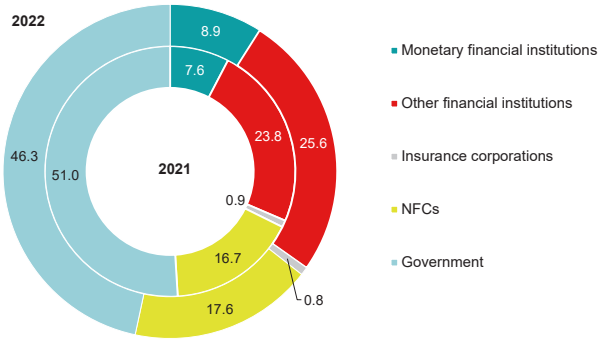
Source: Central Bank of Malta.

Chart 4.14
ASSETS COMPOSITION OF THE DOMESTICALLY-RELEVANT INVESTMENT FUNDS
(per cent)



Source: Central Bank of Malta.

Chart 4.15
BOND HOLDINGS COMPOSITION OF DOMESTICALLY-RELEVANT INVESTMENT FUNDS
(per cent)



Source: Central Bank of Malta.
Note: Other financial institutions includes OFIs, financial auxiliaries and captive financial institutions and money lenders.

of euro area and US sovereign bonds rose to represent 4.9% and 4.1%, respectively of the overall bond portfolios.

Corporate bonds declined by 14.7%, but their share in the overall bond portfolios rose by 0.9 percentage point to 17.6%. Exposure to Maltese firms remained limited to almost a third of NFC bonds, with the rest primarily consisting of companies located in other euro-area countries and the United States.

The share of financial corporate bonds also rose, up by around 3 percentage points to 35.3%, largely driven by bonds of institutions classified as other financial Institutions. Although the value of such holdings declined by 11.8%, their share in the overall bond portfolios rose by 1.8 percentage points to just above a fourth of all bonds. While bonds issued by monetary financial institutions also fell by 5.7%, their share increased by 1.3 percentage points to 8.9% of the overall bond holdings. At 47.2%, domestic bank bonds continued to represent an important share of such holdings. Bonds of insurance firms remained limited to less than 1% of the bond portfolios, with the majority of such holdings related to insurance firms located in other euro area countries, with no exposure to domestic insurances.

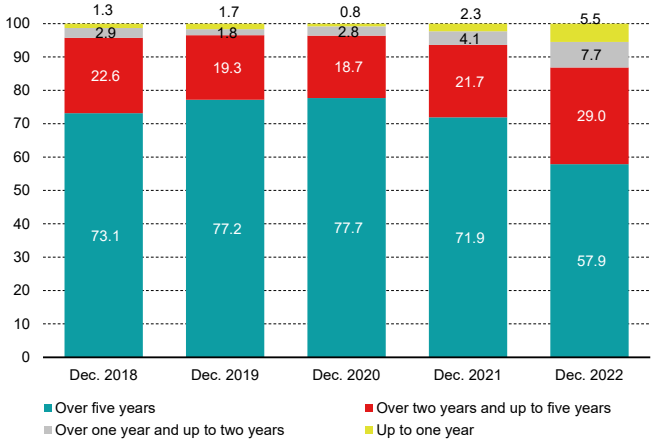
The overall bond portfolios continued to present a strong domestic bias, as around 63% of the debt paper was issued by Maltese entities, largely reflecting sovereign exposure. Meanwhile, around 17% reflected bonds issued by euro area countries, with the remaining share representing bonds issued by entities based in other countries, largely dominated by US bonds.

Adverse macroeconomic developments and the monetary policy tightening prompted fund managers to alter their investment strategies, adopting a bond laddering approach focused on reducing the exposure to interest rate volatility. As a result, the maturity structure of the bond portfolios changed, with the share of long-term bonds with an outstanding maturity of over 5 years declining significantly (see Chart 4.16). After reaching almost 78% of the overall portfolios at the end of 2020, the share of such bonds decreased somewhat in 2021, and more significantly in 2022, to 57.9% of the overall bond holdings. Meanwhile, the portfolios were balanced by an increase in short- and medium-term bond holdings, with the largest growth registered in bonds with an outstanding maturity of between two and five years, which rose by 7.3 percentage points, reaching 29.0% of the overall bond holdings.

As a result, the duration of the portfolios also declined. Estimates for the modified duration, which is a financial indicator[7] that expresses the percentage change in the bonds portfolios value given a 1% change in the interest rate, dropped to 5.4% by end 2022, from the 7.0% registered twelve months earlier (see Chart 4.17).

By the end of 2022, equity holdings declined by 10.3%, mainly due to price effects as the result of the market turbulence during the period under review. They remained largely allocated towards non-MMF investment funds, accounting for 47.2% of the overall holdings,

Chart 4.16
OUTSTANDING MATURITY STRUCTURE
(per cent of NAV)



Source: Central Bank of Malta.

[7] The modified duration is a financial metric to measure the bond's price sensitivity to a 1% change in interest rates. Meaning, that a given 100 basis-point movement in yield, a security with a Modified Duration of 5.4, would inversely move in price-by-price by 5.4%.

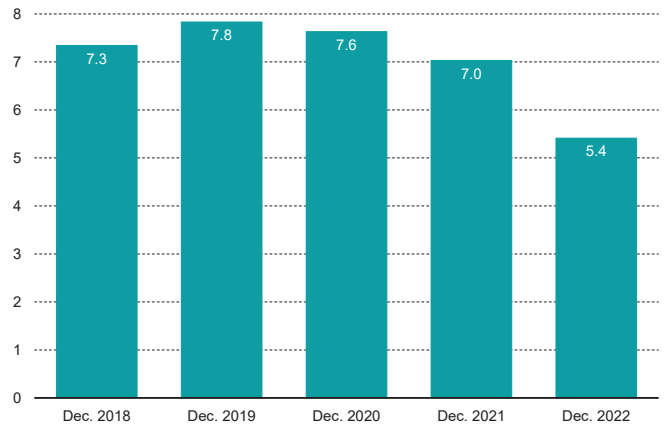
representing a decrease of 1.5 percentage points compared to end 2021 (see Chart 4.18). Meanwhile, corporate stock continued to represent the second largest share of the equity portfolios, registering a slight decrease of 0.8 percentage point, standing at 29.0% of equity holdings. Such decline was balanced by an expansion of 2.5 percentage points in bank stocks, rising just above 13% of the overall equity holdings. Holdings of stocks of OFIs remained relatively stable, while stocks of insurance corporations declined by 0.6 percentage point, with their share in the equity portfolios becoming even more limited.

In terms of geographic exposure, at 47% the equities portfolios remained largely European-oriented, notwithstanding recording the largest drop in terms of share. The decline was counterweighed by a larger participation in domestic equities, which increased by 2.6 percentage points to 40.4% of the overall equity holdings. Standing at 6.3%, exposure to US-based entities remained relatively stable, while the exposure to other countries continued to represent a small share of about 5.9%.

4.2.2 Investors

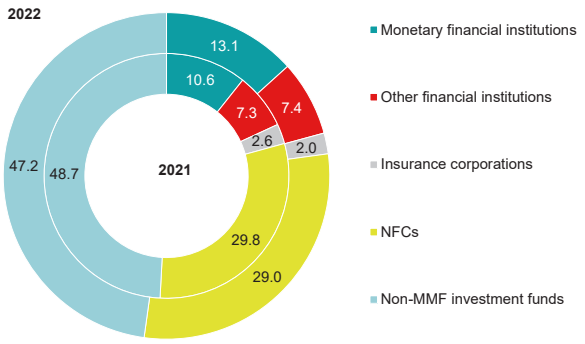
Despite declining by 2.4 percentage points by the end of 2022, Maltese households remained the principal investors in domestically-relevant sub-funds, accounting for 55.6% of the total net asset value (NAV), the lowest share recorded in the past five years (see Chart 4.19). The drop in NAV also reflected investments by domestic banks, whose share fell by 1.1 percentage points to just 3.0%, reflecting redemptions incurred by one sub fund. Although holdings by domestic OFIs, insurance firms and NFCs declined, their share in overall NAV rose, standing

Chart 4.17
MODIFIED DURATION OF THE PORTFOLIOS
(per cent)



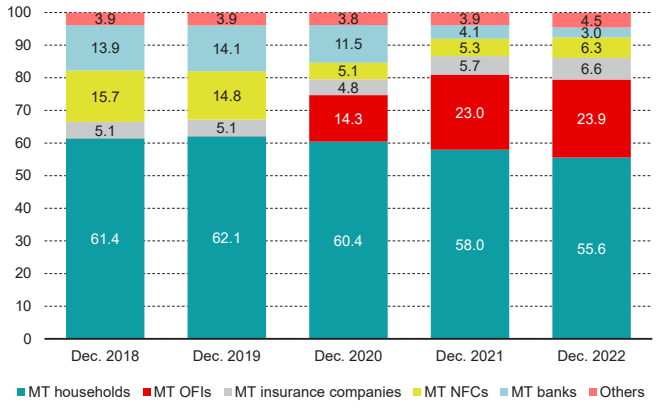
Source: Central Bank of Malta.

Chart 4.18
EQUITY HOLDINGS COMPOSITION OF DOMESTICALLY-RELEVANT INVESTMENT FUNDS
(per cent)



Source: Central Bank of Malta
Note: Other financial institutions includes OFIs, financial auxiliaries and captive financial institutions and money lenders.

Chart 4.19
DOMESTIC INVESTMENT FUND'S NAV BY COUNTERPARTY
(per cent)



Source: Central Bank of Malta
Note: Others include investment from domestic investment funds, and all investments from the euro area and rest of the world.

at 23.9%, 6.6% and 6.3% of overall NAV, respectively. Consequently, Maltese OFIs, such as financial auxiliaries and captive financial institutions, remained the second largest segment of investors, in line with the trends observed since 2020. Investments by non-residents remained limited to 4.4% of the total NAV, reflecting the domestic focus of these sub-funds.

4.2.3 Liquidity and leverage

Throughout 2022, domestically-relevant investment funds registered high liquidity levels along with low leverage rates. Overall, the healthy liquidity position is due to the strong holdings of liquid assets in their portfolioss, such as highly rated sovereign debt and equities. Nonetheless, the liquidity ratio decreased by 1.7 percentage points to 69.7%, mostly reflecting the fast pace of decline in the holdings of sovereign bonds.

Meanwhile, leverage of domestically-relevant sub-funds remained limited, partly because most of them are licensed and regulated under the UCITS Directive.[1] Despite the high volatility in financial markets and significant losses throughout the year, the leverage of domestically-relevant investment funds, calculated as AUM-to-NAV ratio, stood at 100.3% at the end of 2022, marginally lower than the 100.6% registered twelve months earlier.

4.2.4 Risk outlook

The nature of the geopolitical and market events experienced in 2022, including the monetary policy tightening by major central banks, which impacted significantly the bond markets. European equity markets also suffered losses, largely driven by the stress in the UK government bond market, impacting the overall market performance. Nonetheless, concerns on domestically-relevant investment funds are somehow limited. This is not only due to their low leverage but also because of the high liquidity rates they operate with, where liquid assets represent around 70% of overall assets on average. However, in case of severe market distress, several liquidity management tools such as redemption gates and redemption fees are available for most of the funds.

Despite reducing their exposure to interest rate volatility, as observed in the decrease in the modified duration and the smaller share of fixed-income securities with longer term maturities, further interest rates increases are likely to negatively affect the performance of domestically-relevant investment funds. This may prompt asset managers to pursue a yield-oriented strategy, increasing the exposure towards equities, and continue in their bond laddering investment approach, to deliver stable returns to their investors.

Domestically-oriented sub-funds are structurally connected with the core domestic banks. Not only by the fact that most of these sub-funds are managed by asset management companies owned by these banks, but also through holdings of securities issued by them. Although the share of domestic banks as investors have been declining over the past four years, to just around 3.0% of NAV by end 2022 (see Chart 4.19), any negative performance of these funds could have repercussions on banking group's profitability. Nonetheless, such companies are set up as separate legal entities, subject to the provisions of the Maltese Companies Act and the Investment Services Act.

[1] UCITS Directive Article 83 restricts borrowing for retail to up to 10% of their assets and on a temporary basis (as found in https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:302:0032:0096:en:PDF).

BOX 6: EXPERIMENTAL AND ANALYTICAL CLIMATE CHANGE-RELATED INDICATORS FOR THE FINANCIAL SECTOR IN MALTA[1]

Introduction

On 27 January 2023, the ECB published its first harmonised climate change-related indicators for the euro area, as part of an action plan to include climate change considerations in the ECB's policy strategies.[2] These indicators are the first of their kind in the euro area and aim to reflect climate risks that can affect not only the financial system, but also monetary policy and price stability. Three types of indicators are included in the ECB's publication, namely: (1) experimental indicators on sustainable finance, (2) analytical indicators on carbon emissions in the financial sector's loan and securities portfolioss, and (3) analytical indicators on physical risks associated in the loans and securities portfolioss of the financial sector.[3] These indicators were presented at a country level on the ECB's website,[4] alongside a detailed report documenting their methodology, data sources, caveats, and a technical annex. The caveats listed therein are noteworthy and caution is therefore suggested in the use of such indicators.

This box focuses on the indicators compiled for Malta, which were in turn, updated by the Central Bank of Malta with the latest available data. The aim is not to conduct an exhaustive analysis of the indicators, but rather to raise awareness of their existence and encourage researchers to use them in related fields as these indicators mature over time.

The time series of these indicators includes quarterly data spanning from 2021 Q1 until 2022 Q4 for sustainable finance indicators, annual data from 2018 to 2020 for carbon emissions indicators, and annual data for 2020 for physical risks indicators.

1. Experimental indicators on sustainable finance

Experimental indicators on sustainable finance comprise mainly indicators on issuances and holdings of green, social, or sustainable securities.[5] These indicators are compiled exclusively using official European System of Central Bank (ESCB) data sources, namely granular information from the Centralised Securities Database (CSDB) and the Securities Holdings Statistics (SHS) dataset.

The sustainability classifications comprise four groups:

1. **Green** – debt securities where proceeds are used to finance green projects
2. **Social** – debt securities where proceeds are used to finance social projects
3. **Sustainability** – debt securities where proceeds are used to finance a combination of both green and social projects
4. **Sustainability-linked** – debt securities where issuers are committed to future improvements in sustainability outcome(s) with no restrictions on how the proceeds can be used.

While the reference jurisdiction of the issuances of sustainable debt securities is the issuer country, data on the holdings of such securities refer to the counterparty's jurisdiction. The latter includes the euro area, the rest of the European Union and the rest of the world.

Chart 1 shows the nominal value of the holdings of securities by resident deposit-taking corporations except central banks, non-money market investment funds, and insurance corporations, broken

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[1] Written by Gabriele Lentini, Economist Statistician and Dr Krisztina Dekany, Senior Statistical Information Management Officer within the Statistics Department of the Central Bank of Malta. The author would like to thank Mr Jesmond Pule', Mr Alan Cassar, Deputy Governor Mr Oliver Bonello for their helpful comments and suggestions.

[2] See https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html.

[3] Experimental and analytical indicators are not considered as official statistics and are thus to be treated with caution.

[4] See https://www.ecb.europa.eu/stats/ecb_statistics/sustainability-indicators/html/index.en.html.

[5] Securities comprise debt securities, such as bonds, and other securities such as equity.

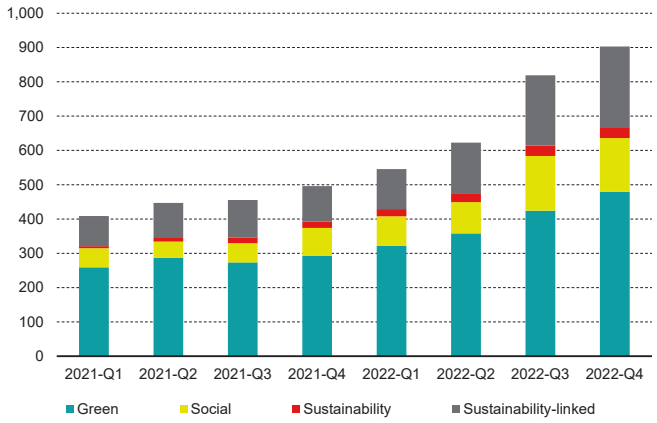
down by sustainability classifications.

It can be noticed that between 2021 to 2022 holdings of such securities were on the increase, with the highest nominal value of holdings being the green securities, whilst sustainability securities accounted for the lowest share.

Chart 2 shows the holdings of securities broken down by sector.

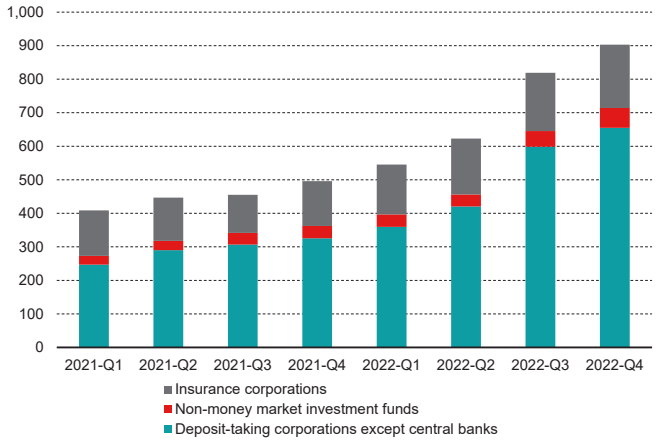
Chart 2 shows that, over these two years, Deposit-taking corporations except central banks reported the strongest increase in the holdings of such securities.

Chart 1
HOLDINGS FOR MALTA BROKEN DOWN BY SUSTAINABILITY CLASSIFICATION
(EUR millions)



Source: SHSS.

Chart 2
HOLDINGS FOR MALTA BROKEN DOWN BY SECTOR
(EUR millions)



Source: SHSS.

2. Analytical indicators on carbon footprint

The ECB released four indicators on carbon intensity,[6] namely:

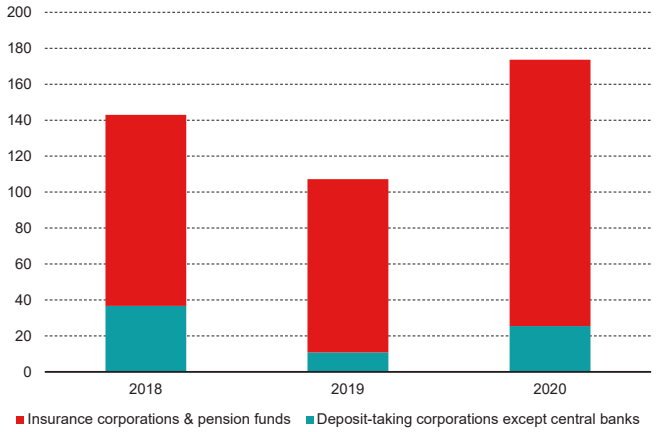
1. **Financed emissions**, which is the total greenhouse gas (GHG) emissions weighted by the share of investment over these activities, in proportion to the total company value.
2. **Carbon Intensity**, represented by financed emissions in proportion to the company production value of a firm, weighted by the share of investment over these activities over the total company value.
3. **Weighted average carbon intensity**, which is the total GHG emissions standardised using a measure of company production value and weighted by the share of the investment in its total investment portfolios.
4. **Carbon Footprint**, measured as financed emissions in proportion to the total investment portfolios value.

The first two indicators are known as indicators on 'financing the transition to a net-zero economy', whilst the last two indicators are described as 'indicators on transition'. The data for Malta consists

[6] Further explanations of the four indicators can be found in Towards climate-related statistical indicators – Technical Annex, European Central Bank, Frankfurt, p. 9.

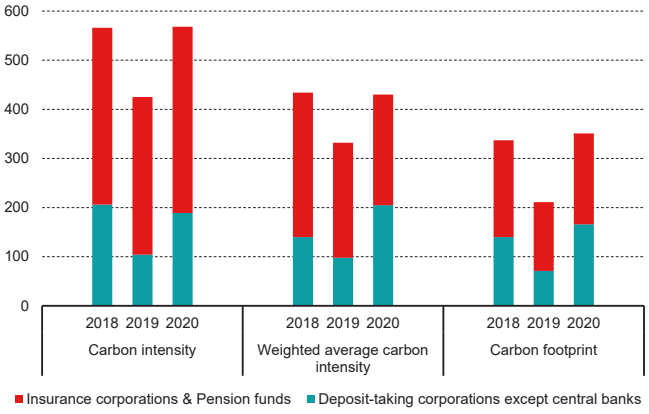
of group level data for two sectors, namely the deposit-taking corporations except central banks and insurance corporations and pension funds. Group level data are obtained from the parent company's reported financial and emissions' data, sourced from private commercial data sources. Furthermore, the data considered for Malta consists solely of direct emissions, which are emissions from the sources owned by the reporting entity. The indicators for Malta are reproduced in Charts 3 and 4.

Chart 3
FINANCED EMISSIONS FOR MALTA BROKEN DOWN BY SECTOR
(thousands; tons)



Source: European Central Bank calculations.

Chart 4
CARBON INTENSITY, WEIGHTED AVERAGE CARBON INTENSITY AND CARBON FOOTPRINT FOR MALTA BROKEN DOWN BY SECTOR
(tons/EUR millions)



Source: European Central Bank calculations.

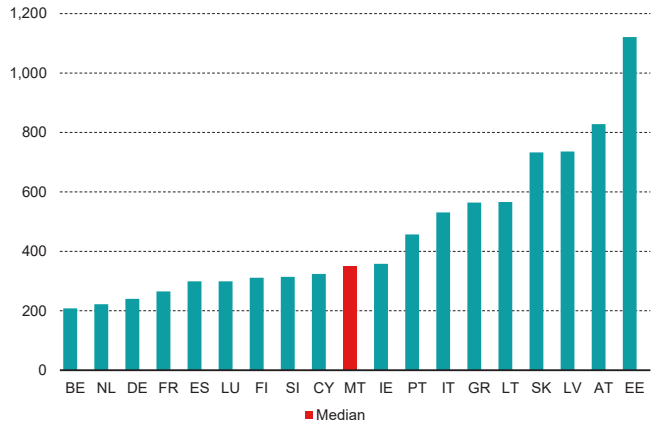
As can be seen in Chart 3, insurance corporations and pension funds held securities of high-emission companies compared to those held by deposit-taking corporations. This characteristic is not unique to Malta, as it could be observed across most euro area countries. Similarly, Chart 4 shows that carbon intensity, weighted average carbon intensity and carbon footprints are all higher for insurance corporations and pension funds when compared to deposit-taking corporations. Similar traits are also observed for roughly half of the Euro Area countries. These observations could however be the result of a disparity in the coverage of the underlying data, that is the share of securities holdings about which emissions information exists. For the Maltese data, the coverage for the securities held by insurance corporation and pension funds is significantly larger than that of deposit-taking corporations. Furthermore, the coverage for deposit-taking corporations drops by almost a half in 2019 and 2020 when compared to 2018.

Charts 3 and 4 show a drop in the indicators for 2019. Although this reflects lower overall reported GHG Scope 1 emissions, it could be heavily influenced by the coverage issues mentioned earlier, and therefore such results should be treated with caution.

Chart 5 compares the 2020 carbon footprint across the euro area countries.

As can be seen in Chart 5, Malta's score is in line with the median value across the countries with respect to the carbon footprint indicator. Similarly, Malta's figures hover around the median for both carbon intensity as well as the weighted average carbon intensity.

Chart 5
CARBON FOOTPRINT BY COUNTRY IN THE EURO AREA
(tons/EUR millions)



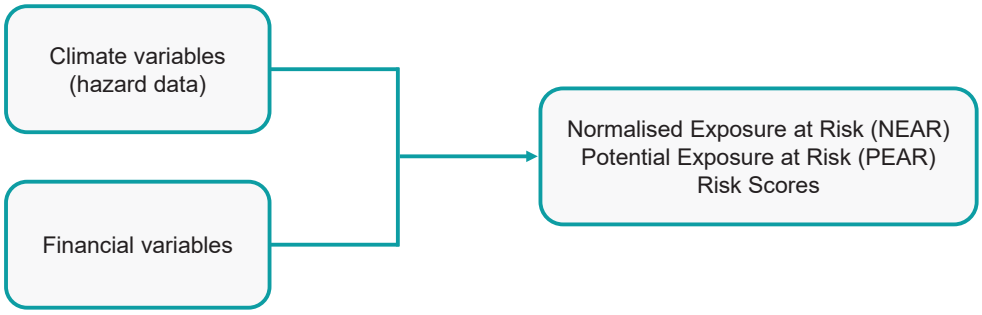
Source: European Central Bank calculations.

3. Analytical indicators on Physical Risks

The Physical risks indicators consider risks emanating from climate change-induced natural hazards, like floods, storms or wildfires, which in turn, could affect the market value of loans, bonds and equities.

The ECB considers seven natural hazards for which physical risk indicators were constructed, namely: (1) coastal flooding, (2) river flooding, (3) windstorms, (4) landslides, (5) subsidence, (6) water stress, and (7) wildfires. For the first five of these hazards, only current hazard profiles are available, however, for water stress and wildfires, projected data[7] are available for 2030 and 2030-2050, respectively. For each of the physical hazards, climate and financial variables were combined to calculate three different sets of indicators, namely Normalised Exposure at Risk (NEAR), Potential Exposure at Risk (PEAR) and Risk Scores (RS).[8]

Figure 1
PHYSICAL RISK INDICATORS



Source: Central Bank of Malta.

[7] Regarding the projected data, both wildfire and water stress indicators were calculated on the 'worst-case scenario' of global warming, also called RCP 8.5. This high-emissions scenario is frequently referred to as "business as usual", suggesting that this is a likely outcome if society does not make concerted efforts to cut GHG emissions, representing the 90th percentile of no-policy baseline scenarios available at the time, https://www.carbonbrief.org/explainer-the-high-emissions-rcp8-5-global-warming-scenario/.

[8] For more details of the computation functions and the data sources, check the following documents: Statistics Committee of the European System of Central Banks (2023): Towards climate-related statistical indicators, European Central Bank, Frankfurt, pp. 14-16. Statistics Committee of the European System of Central Banks (2023): Towards climate-related statistical indicators – Technical Annex, European Central Bank, Frankfurt, pp. 15-24.

Three sets of indicators have been computed using harmonised methodologies across euro area countries.[9]

The indicators are calculated from the point of view of the creditor or the holder. Thus, for instance, it is possible for a financial institution in Malta to face a river flooding risk if it has invested in a company located in a fluvial flood risk area in a third country. The location information of firms is based on the ESCB's Register of Institutions and Affiliates Data (RIAD) and contains information at the level of the legal entity. Given that the NEAR is still under development and more data is needed for its robust application to Malta, this box article focuses on the PEAR indicators.

Potential Exposure at Risk indicators

The PEAR indicator captures the maximum share of the portfolios that is potentially exposed to physical hazards, based on the total financial exposure entity by entity that have a risk score above zero.

PEAR indicators were calculated for all the seven different hazards:

1. Coastal flooding is the inundation of normally dry land areas along the coast with seawater. Coastal flooding is typically a result of a combination of sea tidal surges, high winds, and barometric pressure.
2. Landslide is defined as the gravitational movement of a mass of rock, earth, or debris down a slope. It can be triggered by heavy or prolonged rainfall, earthquakes, volcanic eruptions, rapid snow melt, slope undercutting by rivers or sea waves, permafrost thawing, land use changes (for example deforestation), rapid reservoir drawdown, irrigation, blasting vibrations or water leakage from utilities.
3. River flooding occurs when water levels rise over the top of riverbanks. River flooding typically happens for four reasons: excessive rain making landfall, persistent thunderstorms over the same area for extended periods, combined rainfall and snowmelt, and ice jam.
4. Subsidence refers to (i) a sinking down of a part of the earth's crust, generally due to underground excavations, or (ii) the sudden sinking or gradual downward settling of the Earth's surface with little or no horizontal motion.
5. Wildfire is an unplanned fire which burns in a natural area such as a forest, grassland, or prairie. Wildfires are often caused by human activity or a natural phenomenon such as lightning or droughts and can happen at any time and anywhere.
6. Windstorms are defined as an extreme weather condition with very strong wind, heavy rain, and often thunder and lightning.
7. Water stress is the ratio between total water withdrawals and available renewable surface water. It measures the level of competition for available water and estimates the degree to which freshwater availability is an ongoing concern.

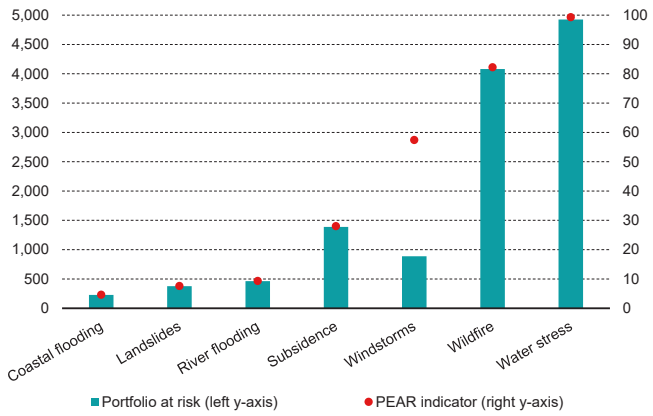
Chart 6 shows the PEAR indicator in percentage terms (right y-axis) with dots, while the bars represent the portfolios in euro millions (left y-axis) at potential risk from each of the seven hazards.

For example, in the case of coastal flooding, the bars show the portfolios value which is hypothetically exposed to coastal flooding; in the case of Malta, in 2020, about €228 million worth of loans, bonds and securities were estimated to be potentially exposed to this type of hazard at non-zero risk. Staying with the same example of hazard, the respective PEAR indicator, marked with a red dot, shows that the maximum share of the portfolios (of loans, bonds, and securities) that is potentially exposed to coastal flooding is roughly 4.6%.

[9] Statistics Committee of the European System of Central Banks (2023): Towards climate-related statistical indicators, European Central Bank, Frankfurt, p. 13.

Having a closer look at the cross-country comparisons of the separate types of hazards, Table 1 shows the PEAR indicators (%) for all the euro area countries including Malta and the euro area average.

Chart 6
PEAR INDICATORS OF MALTA REGARDING THE PHYSICAL HAZARDS (2020)
(EUR millions; per cent)



Source: European Central Bank calculations.

Focusing on the PEAR indicators for Malta, only the wildfire and water stress indicators are higher than the euro area average. A number of caveats are noteworthy. Firstly, the climate variables underlying these two types of hazards were projected into the future (2030-2050 and up to 2030, respectively), based on a worst-case scenario for global warming. Also, the high readings for Malta reflect the structural characteristic of the indicators themselves, which was referred to earlier, mainly that these are based on the holder/issuer side. Thus, if for example a financial institution domiciled in Malta invested in a security of a firm located in another country at

Table 1
PEAR INDICATOR OF THE SEVEN HAZARDS BY COUNTRY IN THE EURO AREA
(per cent)

	Coastal flooding	Landslides	River flooding	Subsidence	Wildfire	Windstorms	Water stress
Austria (AT)	6.6	29.4	32.6	96.3	84.8	28.0	100.0
Belgium (BE)	11.7	11.9	19.0	80.4	84.4	28.3	99.7
Cyprus (CY)	1.7	5.1	1.3	15.8	75.1	86.3	96.3
Estonia (EE)	1.1	1.1	9.2	37.4	87.0	84.1	98.3
Finland (FI)	5.1	4.3	25.5	94.5	77.8	81.5	96.9
France (FR)	11.2	25.4	26.7	74.5	79.2	47.7	99.4
Germany (DE)	11.9	18.7	29.8	75.4	86.4	57.5	99.8
Greece (EL)	0.7	38.5	1.7	91.7	71.2	29.7	94.5
Ireland (IE)	20.1	27.3	33.9	81.1	81.2	63.2	99.7
Italy (IT)	8.4	39.5	20.9	86.5	80.7	67.1	98.9
Latvia (LV)	1.0	0.8	26.5	30.0	62.0	98.5	99.3
Lithuania (LT)	0.9	2.2	11.4	96.8	97.8	99.6	99.6
Luxembourg (LU)	19.6	27.9	35.2	86.3	89.4	62.2	99.9
Malta (MT)	4.6	7.6	9.3	28.0	82.2	57.4	99.3
Netherlands (NL)	29.8	10.4	28.1	77.2	80.3	68.0	99.5
Portugal (PT)	3.9	19.1	4.1	73.6	72.6	46.5	96.8
Slovakia (SK)	1.4	12.3	24.8	99.1	88.3	94.7	100.0
Slovenia (SI)	4.0	51.2	35.4	83.8	99.2	14.0	99.5
Spain (ES)	5.5	21.3	12.5	78.3	73.9	59.6	97.8
Euro area (EA)	7.9	18.6	20.4	73.0	81.8	61.8	98.7

Source: European Central Bank calculations.

risk of forest fires, although the indictor would capture that risk on the resident financial institution, it does not mean that the underlying risk would lie within the Maltese physical territory. This is also more relevant in the context of the Maltese financial sector, which exhibits a significant portion of its activity being oriented towards the international sphere and hence exhibiting limited or no links with assets located in Malta. Furthermore, considering that large areas of Europe, including Malta, are projected to suffer higher water stress in future, the relatively high PEAR reading of 99.3% reflects not only the international exposures held by resident institutions, but also those located within the Maltese territory.

Way forward

The next publication and refinements of these experimental indicators by the ECB is planned towards the end of 2023 and may include breakdowns for the physical risk indicators by (a) sectors of the economy such as deposit-taking corporations except central banks, non-MMF investment funds and Insurance corporations and by (b) instruments such as loans, bonds, equities for both carbon footprint and physical risk indicators.

The Central Bank of Malta will focus more on individual natural hazard types which could potentially have the most significant affects in Malta, such as coastal flooding and windstorms. However, one should keep in mind that through transactions with foreign counterparties, resident banks may also have significant risks from other hazard types occurring in other jurisdictions.

Furthermore, the Central Bank of Malta will continue to liaise with the ECB and other national central banks to improve the data coverage to improve its reliability and enable further research and analysis.