FMA

Financial Market Authority

24

# FINANCIAL STABILITY REPORT 2024

## BOXES

# PREFACE

In this publication, the Liechtenstein Financial Market Authority (FMA) presents its seventh annual Financial Stability Report, providing a comprehensive analysis of the country's financial sector. As Liechtenstein does not have a national central bank, the FMA is legally tasked with ensuring financial stability under the Financial Market Supervision Act (FMA Act, Article 4).

The global economy has further weakened over the past year amid high interest rates and increasing geopolitical tensions. Macroeconomic trends are also being felt in the financial sector, with interest margins, for example, having noticeably decreased in recent months. Although the Liechtenstein financial sector remains stable, it is crucial to closely monitor global developments and address identified risks accordingly to ensure long-term stability. The present report identifies and evaluates the systemic risks facing Liechtenstein's financial sector, points out imbalances, and outlines how risks are being managed. The report also offers several recommendations to authorities as well as private sector participants on how to effectively address the identified systemic risks.

In conclusion, our analysis confirms the ongoing stability and robustness of Liechtenstein's financial sector, with systemic risks remaining limited. However, in light of increasing global uncertainties, geopolitical tensions, and financial volatility, it is crucial to maintain strong capital buffers and resilience within the sector. To this end, the authorities have a variety of macroprudential tools at their disposal, which they will continue to utilise as needed to safeguard financial stability.

Mario Gassner
Chief Executive Officer

Martin Gächter
Head of the Financial Stability Division

# EXECUTIVE SUMMARY

## MAIN FINDINGS AND RISKS

**While the macro-financial risk outlook has improved slightly due to monetary easing, persistent inflation and uncertainty around future policy adjustments keep downside risks elevated.** Over the past year, the global economy has experienced weak growth and high uncertainty, particularly in major economies impacted by higher interest rates. Global trade has also remained sluggish, especially in advanced economies, where industrial sectors have suffered from reduced investment and weak demand. Despite these challenges, labour markets have proven resilient, bolstered by demographic trends and labour shortages that have kept unemployment low. While inflation has eased significantly, it remains above central banks' targets, with ongoing wage growth complicating efforts to curb inflationary pressures. Overall, financial stability risks at the global level have not materialised in the past year, and the outlook is expected to improve gradually with a predicted decline in interest rates.

**Liechtenstein's economy continues to face challenges from weak external demand in key markets and rising geopolitical tensions, with economic indicators reflecting persistently weak growth.** Nevertheless, the labour market remains resilient, characterised by low unemployment and high job vacancies as many firms struggle to find skilled workers. While global trade and external demand continue to be sluggish, there are encouraging signs of increasing real export growth in recent months. However, the rising trend of protectionism poses a threat to market access for the export-driven industrial sector. Liechtenstein's public finances remain a key strength, with zero debt, substantial financial reserves, and consistent budget surpluses. Limited data availability hampers economic analysis, although the country's International Monetary Fund (IMF) membership is expected to enhance macroeconomic reporting capabilities.

**Financial markets remain vulnerable, as stretched equity valuations increase the risk of corrections.** In recent months, central banks have begun easing monetary policies in response to declining inflation; however, challenges persist as core inflation in major economies like the US and the euro area continues to exceed targets. This policy shift is occurring amid slowing economic growth, complicating the balance between controlling inflation and supporting economic activity. While long-term bond yields have stabilised or declined, equity markets have shown resilience, with strong gains since early 2023. However, recent volatility has exposed market sensitivities. Additionally, the Swiss franc has continued to appreciate due to divergent monetary policies, creating challenges for export-dependent sectors despite maintaining stable competitiveness on a real-effective exchange rate basis.

**While European real estate markets show signs of stabilisation, vulnerabilities persist, particularly for lower-income households and those with floating-rate mortgages.** The volume of domestic mortgage loans has continued to expand in recent quarters, with household debt levels remaining elevated. Since the monetary tightening that began in 2022, households' debt servicing capacity has worsened. Initially, rising rates led to a preference for variable or short-term fixed-rate mortgages; however, this trend has reversed since late 2023, with longer-term fixed rates becoming more favourable than variable loans due to an inverted yield curve. Most existing loans in Liechtenstein are on fixed rates, which has limited the impact of rising mortgage rates. In contrast, commercial real estate loans represent a minor component of the banking sector, characterised by stable lending standards and asset quality.

**Addressing institutional and reputational risks remains critical for Liechtenstein's financial sector.** While strong integration with the European Union (EU) and Switzerland is a key advantage, it also introduces risks that necessitate ongoing collaboration and regular coordination with Swiss and EU counterparts. The country's reliance on the Swiss franc means it lacks a formal lender of last resort. In this context, Liechtenstein's accession to the IMF is highly beneficial, providing access to additional financial resources under certain circumstances during a crisis. Given the financial sector's focus on private banking and international wealth management, combined with the rise in geopolitical tensions, strict adherence to international standards and proactive management of reputational risks are essential.

**Cyber threats to the financial sector are becoming more frequent and sophisticated, prompting regulatory responses to ensure stability and resilience.** In response, the FMA has established guidelines for the timely reporting of significant cyber incidents. The EU's Digital Operational Resilience Act (DORA), which takes effect at the beginning of 2025 on the EU level, aims to enhance the operational resilience of financial institutions across Europe, with Liechtenstein planning timely implementation. The European Systemic Risk Board (ESRB) has recommended incorporating systemic cyber risk into macroprudential policy, establishing the "Systemic Cyber Incident Coordination Framework" for coordinated responses across European Economic Area (EEA) countries.

**Climate-related risks threaten financial stability through both physical and transition channels.** Physical risks arise from extreme weather events that damage assets, while transition risks stem from the shift to a low-carbon economy, potentially affecting the value of high-carbon investments as well as the broader financial landscape. Assessing these risks is complex in Liechtenstein due to insufficient data. International efforts, including the EU's taxonomy for sustainable activities and the ESRB's analysis of systemic risks, aim to enhance the understanding and management of climate-related financial risks. The FMA is improving its supervisory approach to sustainable finance, focusing on transparency, risk management, and combating greenwashing, while developing guidelines for sustainability audits by 2025 to align with evolving data standards.

**The banking sector in Liechtenstein continues to experience growth, supported by strong capitalisation and robust liquidity indicators.** However, profitability poses a challenge, as rising operational costs are outpacing income growth for some banks, leading to an increasing cost-income ratio. Furthermore, the prevailing trend of decreasing interest rates is likely to further dampen profitability, as interest rate margins will also decline. The ongoing consolidation within the sector has created significant disparities, with larger institutions benefiting from economies of scale while smaller banks struggle to maintain profitability amidst a complex regulatory environment.

**Small banks are increasingly challenged by high regulatory requirements and declining profitability.** These institutions face heightened operational risks, particularly due to limitied resources and/or their reliance on external service providers for IT and compliance functions, which increases their vulnerability to disruptions. Additionally, stringent regulatory pressures related to sanctions and anti-money laundering make compliance more complex and demanding. The FMA is closely monitoring these trends to prevent excessive risk-taking and to ensure the overall stability and integrity of the banking sector, especially among smaller institutions. The focus remains on balancing growth with prudent risk management practices to sustain the health of the financial landscape.

**Over the past two years, the insurance sector has been significantly affected by rising interest rates and inflation.** While higher interest rates initially impacted interest-sensitive assets like bonds, they ultimately benefited insurers by boosting long-term investment returns and increasing the appeal of savings-related products. Inflation, on the other hand, led to an increase in technical provisions, prompting insurers, particularly in the non-life sectors, to raise premiums to accommodate higher future claims. Liechtenstein's insurance sector, which is heavily reliant on foreign markets, experienced a slight growth in premiums but encountered profitability challenges, with its return on equity (RoE) remaining below the European average, also due to distinct group-level strategies. Despite the low RoE, the sector has demonstrated resilience through strong underwriting performance, as evidenced by favourable combined ratios in the non-life sector, and has maintained solid solvency levels, reflecting effective cost management and a stable regulatory framework.

**In 2023, Liechtenstein's public pension system rebounded from a challenging previous year, posting positive returns on financial reserves due to favourable market conditions.** While an income-expenditure gap still exists, strong investment performance has helped stabilise the system's financial reserves. However, long-term challenges are anticipated as the ratio of pensioners to employees continues to grow. In the occupational pension system, improved investment returns have bolstered coverage ratios, although market fluctuations remain a risk. The government is implementing reforms to ensure the sustainability of both public and occupational pensions, with a focus on addressing redistribution issues and preparing for future demographic changes.

**The investment fund sector in Liechtenstein has experienced significant growth, particularly driven by Alternative Investment Funds (AIFs).** While AIFs are gaining popularity in Europe, EU policymakers express concerns about potential financial instability due to liquidity mismatches and leverage within these funds. Nonetheless, Liechtenstein's AIFs are regarded as low-risk, with minimal exposure to illiquid assets such as corporate debt and real estate. Although the sector does not exhibit significant liquidity mismatches, a key challenge persists in the form of a lack of transparency in fund-of-funds structures, making it difficult to fully assess the underlying risks.

**Liechtenstein's macroprudential authorities have continued their efforts to mitigate systemic risks and enhance the resilience of the banking sector through a multi-faceted policy framework.** This framework includes capital-based, lender-based, and borrower-based measures designed to strengthen the overall risk-bearing capacity of the financial sector, particularly regarding the real estate market. Capital-based measures encompass an "other systemically important institutions" (O-SII) buffer to enhance the loss-absorption capacity of three domestic systemically relevant institutions, alongside a systemic risk buffer that targets real estate risks stemming from high household indebtedness.

**In response to a warning from the ESRB and a corresponding recommendation from Liechtenstein's Financial Stability Council (FSC), the FMA has issued specific supervisory requirements for sustainable residential real estate financing by adjusting the existing borrower-based measures.** Recent policy developments also include revisions to the national legal framework for the banking sector to ensure compliance with Basel III standards and to enhance clarity for stakeholders in the banking sector by implementing a new structure of the relevant legal acts. Additionally, Liechtenstein has further strengthened its resolution framework to ensure effective management of failing financial institutions, emphasising the importance of robust planning and preparedness in crisis scenarios. In line with international cooperation efforts, Liechtenstein has also actively engaged with the ESRB and has recently joined the IMF to bolster its financial stability.

## RECOMMENDATIONS

In light of the significant uncertainties surrounding macrofinancial and geopolitical developments, as well as the identified cross-sectional systemic risks, the FMA recommends the following actions:

- Liechtenstein authorities should maintain close cooperation with both Swiss and EU counterparts to effectively address institutional and reputational risks.
- Financial institutions and intermediaries should regularly assess their governance and internal control frameworks to ensure consistent compliance with European and international standards, in particular foreign sanctions, as non-compliance may threaten stability from both idiosyncratic and systemic perspectives; in this context, certain targeted regulatory changes could help to support both legal certainty for market participants and enforcement powers by authorities.
- The financial sector should intensify efforts to address the growing challenges posed by cyber risks, especially in the context of increasing geopolitical tensions.

In light of the dampened profitability outlook and identified risks, the FMA advises the banking sector to focus on the following actions:

- Continue to tackle cost inefficiencies and strengthen structural efficiency to support long-term profitability.
- Ensure sustainable lending standards, particularly in real estate and cross-border lending.
- Maintain a robust capital base and liquidity position, both in normal conditions and during crisis scenarios.
- Improve recovery and resolution plans and options, particularly considering cross-border activities, by collaborating closely with the FMA to further strengthen effective crisis management practices.

Given the vulnerability of financial markets to corrections, the FMA recommends the following actions for the non-banking sector:

- In the insurance sector, focus on maintaining reasonable levels of profitability, combined ratios, and solvency to effectively navigate long-term business model and financial market risks.
- Pension schemes should ensure their long-term viability by ensuring sustainable conversion rates and appropriate technical interest rates to protect their coverage ratios.
- Investment funds should continue to build liquidity buffers to meet clients' redemption needs during market downturns, while also addressing potential greenwashing risks.

In light of the systemic risks present in the Liechtenstein financial sector, the FMA recommends that relevant national authorities undertake the following actions:

- Ensure adherence to international and European standards in ongoing regulatory efforts. Additionally, discuss and implement measures that guarantee compliance with foreign sanctions, particularly where non-compliance poses significant risks to financial stability.

- In the context of recent IMF accession, authorities should collaborate closely with IMF and Swiss counterparts to improve institutional capacity, enhance the availability of macroeconomic data, and advance the crisis prevention and management framework to fully leverage the benefits of IMF membership.

- Continuously assess vulnerabilities in the real estate sector and evaluate the effectiveness and efficiency of adapted borrower-based measures.

- Further refine stress tests and develop comprehensive liquidity stress tests.

- Address identified risks in the fiduciary sector by strengthening supervisory powers and implementing selected regulatory adjustments.

# MACRO-FINANCIAL ENVIRONMENT

## INTERNATIONAL DEVELOPMENTS

**The global economy has been characterised by weak growth and high uncertainty over the past year.** Economic growth in major economies has remained subdued, aligning with the narrative of a "soft landing" amid higher interest rates. While economic activity in Switzerland has slightly accelerated in recent quarters from previously low levels, growth in the euro area has remained flat, and US growth has also begun to weaken around the turn of the year (Figure 1). Although recession probabilities have not increased significantly, recent economic data releases, particularly in the United States, have been weaker than projected. Overall, risks to economic growth remain skewed to the downside, given ongoing geopolitical tensions and elevated political uncertainty.

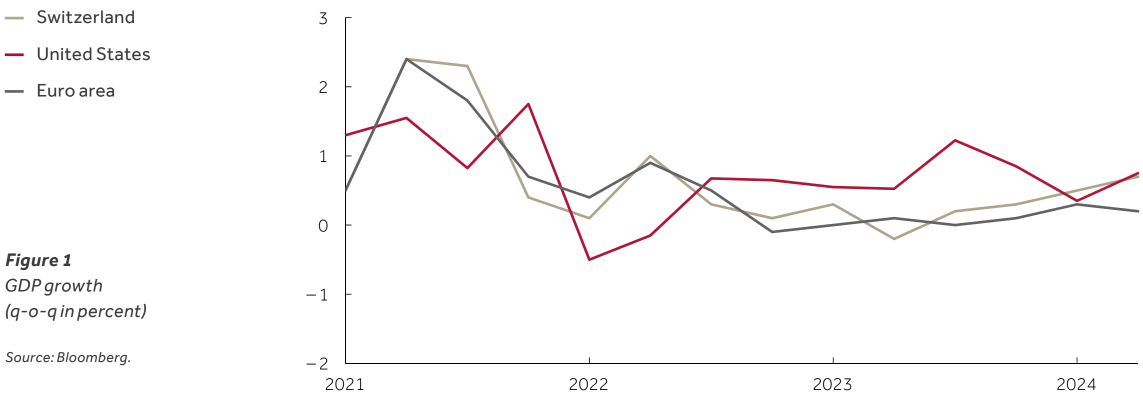


***Figure 1***
*GDP growth*
*(q-o-q in percent)*

*Source: Bloomberg.*

**In line with weak economic activity, global trade also remained subdued.** Merchandise trade recorded negative growth for most of 2023, and global trade activity is expected to remain weak despite a recent uptick in quarterly growth rates (Figure 2). While emerging economies also struggled with low external demand, the weakness was more pronounced in advanced economies. Leading indicators, such as Purchasing Manager Indices (PMI), confirm that the industrial sector has been particularly affected by higher interest rates, partly due to reduced fixed investment. Manufacturing PMIs indicate contraction, suggesting that weak trade growth may continue to pose a significant challenge in the coming months.

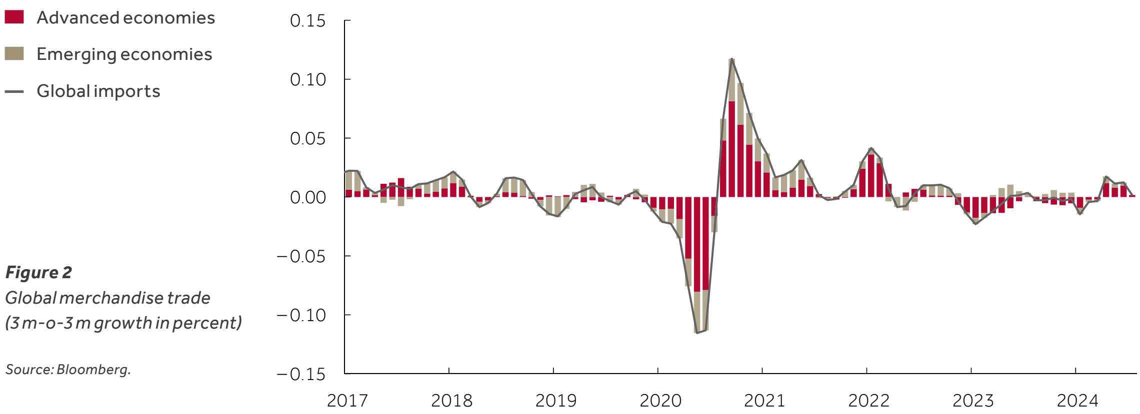


***Figure 2***
*Global merchandise trade (3 m-o-3 m growth in percent)*

*Source: Bloomberg.*

**Notwithstanding sluggish demand and low economic growth, the impact on labour markets has been limited.** Due to demographic trends and increasing labour shortages, particularly in skilled labour, the cyclical downturn has had little effect on unemployment rates so far (Figure 3), which has also helped limit the weakening economy's impact on consumption. Remarkably, despite the euro area being particularly affected by the cyclical slowdown following interest rate hikes, the European economy has even reported a slight decrease in unemployment rates in recent months. However, the slowing economy is evident when examining job vacancy rates. The limited impact on labour markets also suggests a weaker transmission of tighter monetary policy, as wage growth has remained buoyant despite slowing economic growth in recent years.

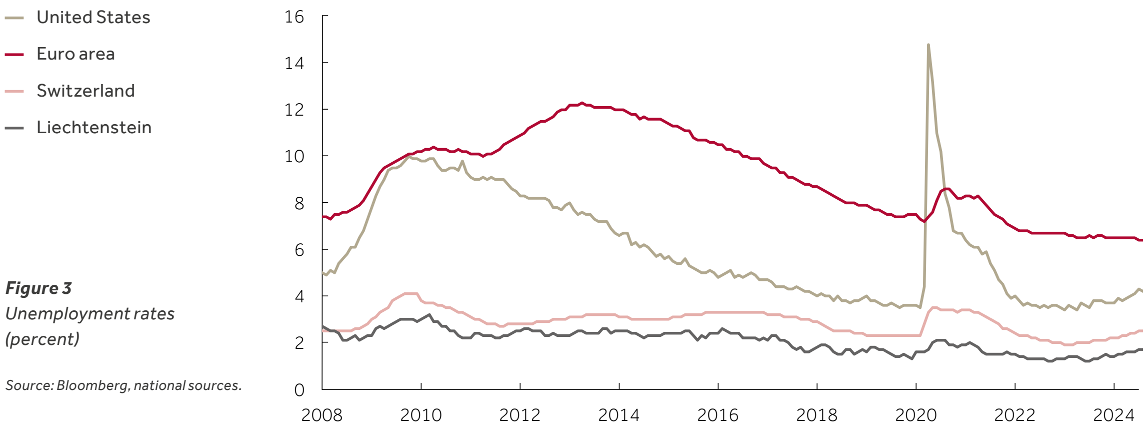


***Figure 3***
*Unemployment rates (percent)*

*Source: Bloomberg, national sources.*

**Inflation has eased significantly over the past year.** Following the sharp rise in inflation rates during 2022 and 2023, price pressures have diminished markedly in the past year, partly due to tighter monetary policy across the globe (Figure 4). Nevertheless, core inflation still hovers around 3 percent in both the United States and the euro area, while headline inflation remains slightly above the central banks' target in both economies. The tight labour market plays a crucial role in the fight against inflation. On the one hand, it supports the possibility of a "soft landing", where central banks raise interest rates just enough to prevent economic overheating and high inflation without triggering a severe downturn. On the other hand, low unemployment complicates the battle against inflation, as strong wage growth heightens the risk of second-round effects following a period of elevated inflation.

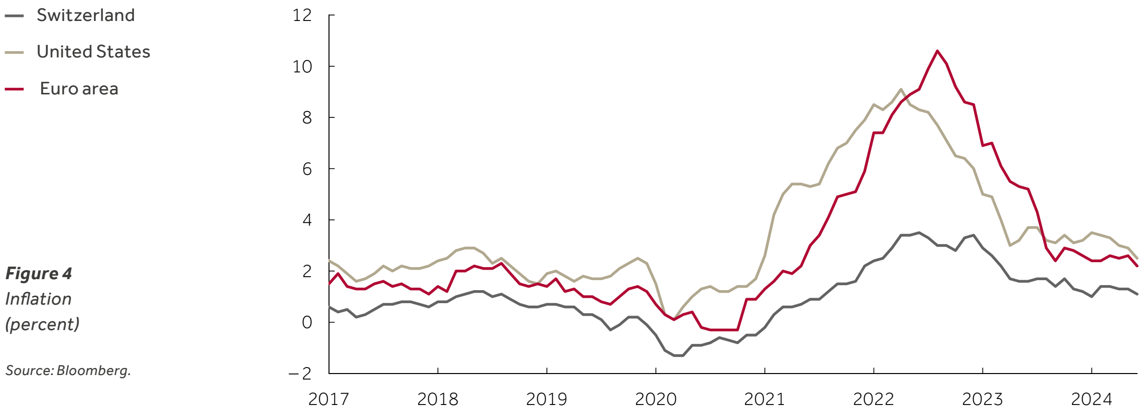


***Figure 4***
*Inflation*
*(percent)*

*Source: Bloomberg.*

BOX 1

## Liechtenstein's export performance in a global context

*by Andreas Brunhart and Martin Geiger*

**Liechtenstein's goods exports growth stalled during the global financial crisis and has never fully recovered since.** Although Liechtenstein's real goods exports had grown in tandem with global economic activity for decades before the global financial crisis, they have shown stagnation in recent years, as illustrated in Figure B1.1. In contrast, global exports of goods and services continued to grow after the crisis, despite a slowdown in globalisation, as evidenced by a stagnating global foreign trade ratio. Specifically, while global real GDP trends before and after 2007 have similar slopes, the trend for Liechtenstein's goods exports post-2007 is notably flatter. This indicates that Liechtenstein's goods exports dynamics have diverged from global trade and GDP growth trends.

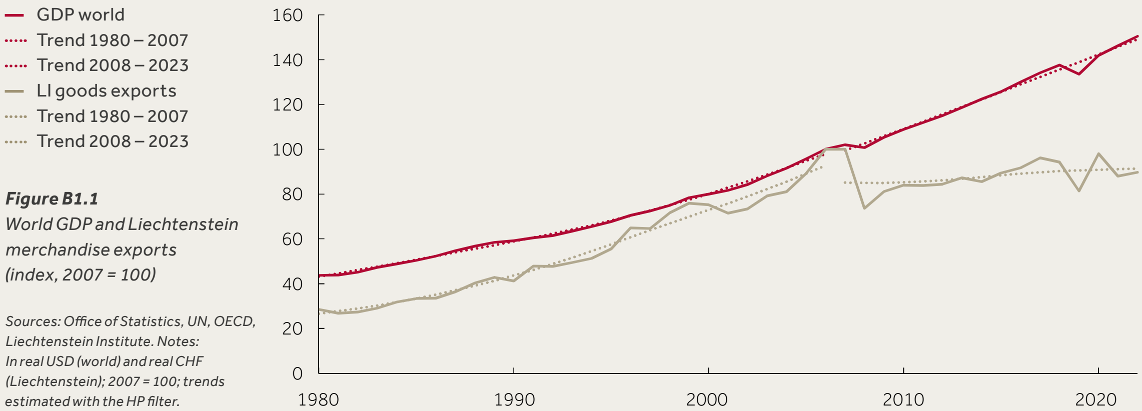


***Figure B1.1***
*World GDP and Liechtenstein merchandise exports (index, 2007 = 100)*

*Sources: Office of Statistics, UN, OECD, Liechtenstein Institute. Notes: In real USD (world) and real CHF (Liechtenstein); 2007 = 100; trends estimated with the HP filter.*

**In recent years, Liechtenstein's export industry has lost price competitiveness.** When comparing the performance of the EU countries' export industries to Liechtenstein's, while adjusting for an equal export structure by reweighting the EU sectoral export composition, the EU industry has performed more favourably on average. Conversely, the Swiss export industry, when adjusted according to Liechtenstein's trade weights, has also remained largely stagnant since the global financial crisis. This contrasts with the overall favourable performance of Swiss total exports, driven largely by significant growth in the chemicals and pharmaceutical sectors (see Berend, Brunhart, and Geiger, 2024). A key factor contributing to the weak real growth in goods exports within the Swiss franc area is deteriorating price competitiveness, exacerbated by the substantial appreciation of the Swiss franc. From 2007 to 2023, the real effective exchange rate (broad basket) appreciated by approximately 25 percent.

**Despite the weak performance of goods exports, the gross value added and revenues of Liechtenstein's industry have increased.** The industrial sector continues to be a key driver of economic growth in Liechtenstein. Figure B1.2 illustrates that real gross value added and real international revenues of large companies, as reported by the Liechtenstein Chamber of Commerce and Industry (LCCI), have significantly surpassed 2007 levels and outpaced the growth of goods exports. This divergence is due to Liechtenstein companies expanding their production capacities abroad to mitigate the impact of Swiss franc appreciation, while increasing their headquarters functions and research facilities within Liechtenstein. Additionally, the industrial sector in Liechtenstein benefits from substantial financial returns from production abroad (see also Berend, Brunhart, and Geiger, 2024).

BOX 1

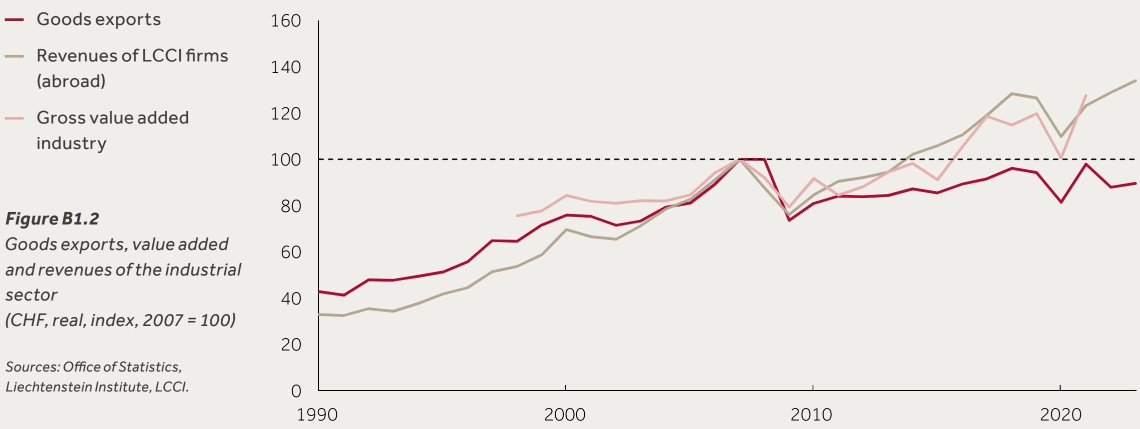


***Figure B1.2***
*Goods exports, value added and revenues of the industrial sector*
*(CHF, real, index, 2007 = 100)*

*Sources: Office of Statistics, Liechtenstein Institute, LCCI.*

**The divergence between goods export dynamics and gross value-added can be observed across many traditional European industrial countries, indicating broad structural changes in the industrial sector.** Figure B1.3, based on Brunhart (2024), compares 10-year growth rates of gross value-added in the industrial sector with industrial production growth, using a 45-degree line to represent equal growth rates. Eastern European countries are shown in red, while other European countries are shown in grey. For Liechtenstein, where industrial production volume indices are unavailable, real goods exports are used as a proxy for industrial production, given that the Liechtenstein industry primarily serves international markets. In panel A (2000 vs. 2011), there is no systematic difference between the two groups of countries. However, in panel B (2011 vs. 2021), it is evident that industrial production growth tends to surpass gross value-added growth among Eastern European countries. Conversely, in most Western European countries – including Liechtenstein, Switzerland, Austria, and Germany – gross value-added growth exceeds industrial production growth.

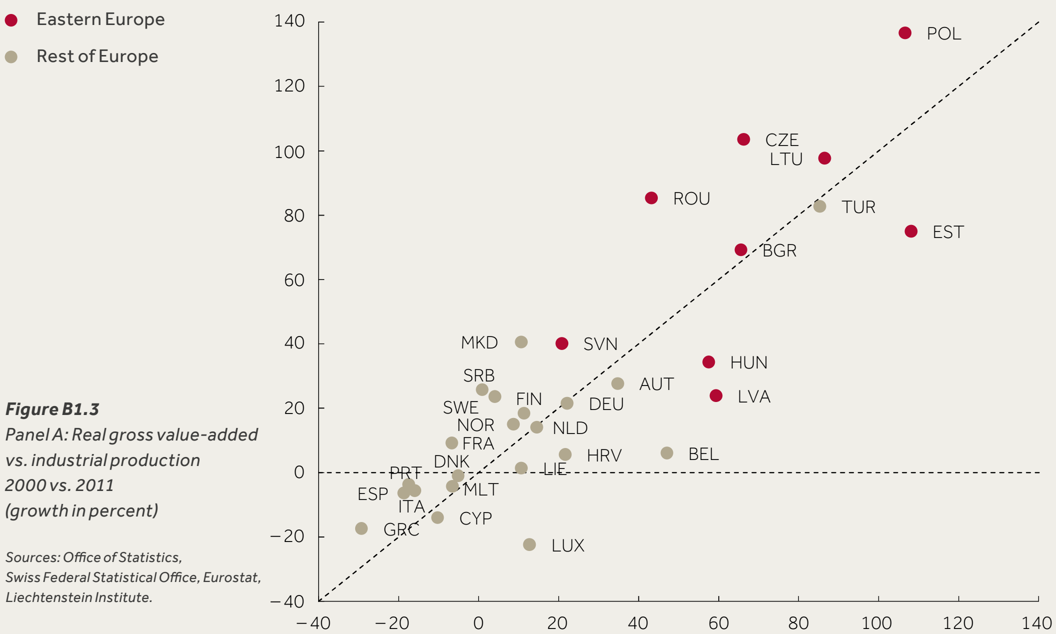


***Figure B1.3***
*Panel A: Real gross value-added vs. industrial production 2000 vs. 2011*
*(growth in percent)*

*Sources: Office of Statistics, Swiss Federal Statistical Office, Eurostat, Liechtenstein Institute.*

BOX 1

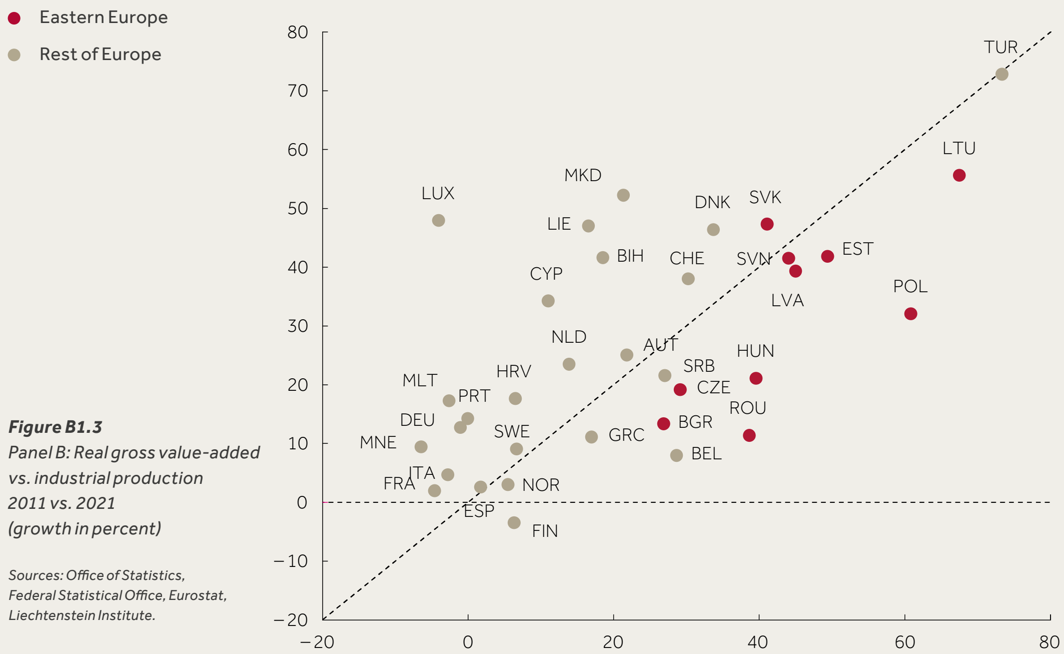


***Figure B1.3***
*Panel B: Real gross value-added vs. industrial production 2011 vs. 2021 (growth in percent)*

*Sources: Office of Statistics, Federal Statistical Office, Eurostat, Liechtenstein Institute.*

**The structural changes in the industrial sector necessitate a re-evaluation of physical goods production and exports as economic indicators.** Understanding these shifts in Liechtenstein's economy is crucial not only for economic policy and macroeconomic analysis but also for econometric modelling and timely business cycle evaluation and estimation. For instance, the Liechtenstein Institute's flash estimates for the previous year and quarterly GDP forecasts use real goods exports as a key explanatory variable, alongside other relevant indicators. Although goods exports remain a critical cyclical indicator for economic activity in Liechtenstein, the long-term relationship between goods exports, the gross value-added of the industrial sector, and GDP has evolved. This structural change has significant implications for statistical models that project macroeconomic aggregates.

***References***

*Brunhart, A. (2024): "Strukturwandel Liechtensteins: Wertschöpfungswachstum trotz Exportstagnation". LI Facts 01/2024.*

*Berend, L., Brunhart, A. and Geiger, M. (2024): "Stagnation der liechtensteinischen Güterexporte: Bestandsaufnahme und Ursachensuche". LI Focus 01/2024.*

## DOMESTIC ECONOMY

**Overall, due to weak external demand, domestic economic activity remains subdued.** Given the large industrial sector and the specific composition of its exports, Liechtenstein's economy remains highly dependent on external developments. The KonSens, a quarterly index summarising 16 data series indicative of the domestic business cycle, has remained negative for ten consecutive quarters, signalling below-average growth in the Liechtenstein economy (Figure 5).

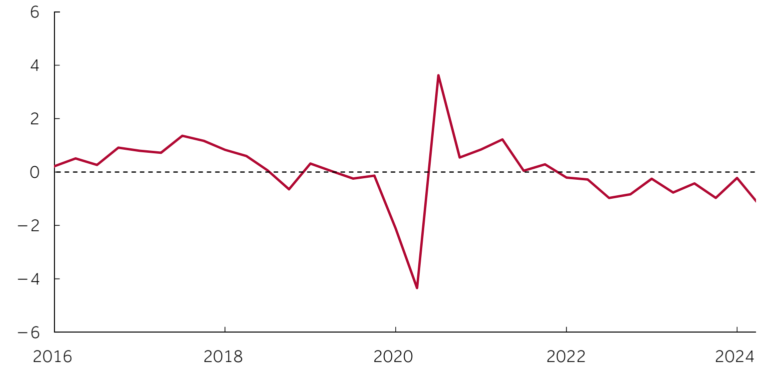


***Figure 5***
*Business cycle index KonSens (index)*

*Source: Liechtenstein Institute.*

**Nowcasts for real GDP growth also point to a weak economic environment.** While the latest official GDP figures are available only on an annual basis until 2022, nowcasts suggest low or even negative growth in Liechtenstein. After a relatively strong final quarter of 2023, with quarter-on-quarter (q-o-q) growth of 1.9 %, estimates for the first (–0.2 %) and second quarters (–0.4 %) of 2024 indicate negative growth for the domestic economy (Figure 6). However, these estimates should be taken with caution, as even official annual figures are often subject to significant revisions. Nevertheless, current indicators consistently reflect a weak economic environment, despite the uncertainty surrounding the estimated figures. In contrast, the labour market has demonstrated resilience, with only a slight rise in the domestic unemployment rate to 1.7 % in August. At the same time, the Liechtenstein "Labour Market Service" (AMS) reported 985 job vacancies in August, meaning the number of open positions exceeded the number of unemployed persons by a factor of 2.7. Against this backdrop, the labour market remains tight, with many firms struggling to find skilled workers in their respective sectors.

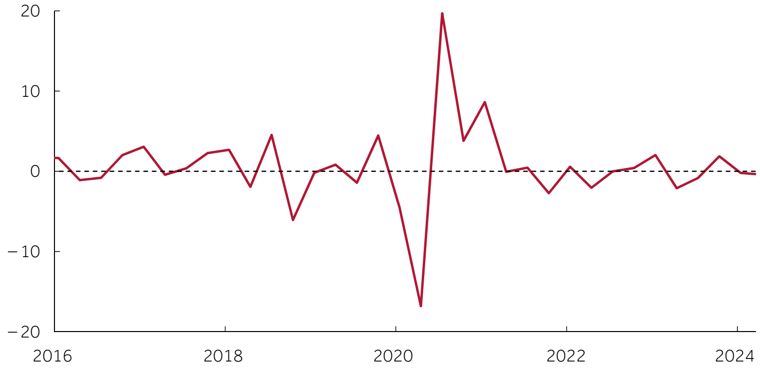


***Figure 6***
*Real GDP developments and nowcasts (q-o-q growth in percent, seasonally adjusted)*

*Source: Liechtenstein Institute.*

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**In line with global economic trends, Liechtenstein's export sector is suffering from sluggish external demand.** The broader picture of a weak economic environment is further confirmed by current developments in Liechtenstein's external sector. Real growth in direct goods imports and exports has mostly remained negative over the past two years (Figure 7). More recently, however, there have been some positive signs, with direct exports showing positive (real) growth since April. Nevertheless, the recovery remains fragile and is subject to high uncertainty, as any materialisation of global risks would directly impact global trade and Liechtenstein's external sector. At the same time, the relationship between real exports and real value-added of the industrial sector has been undergoing structural changes, which will need to be considered in future economic analyses, as detailed in Box 1.

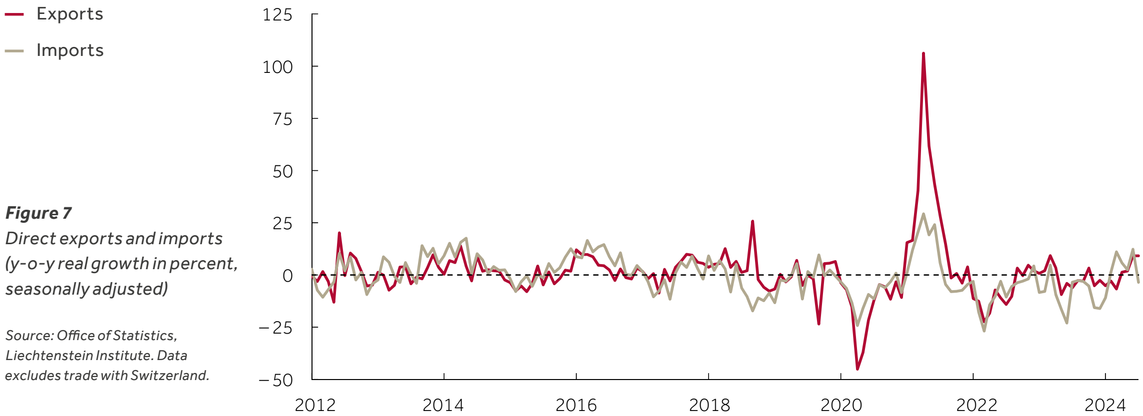



***Figure 7***
*Direct exports and imports (y-o-y real growth in percent, seasonally adjusted)*

*Source: Office of Statistics, Liechtenstein Institute. Data excludes trade with Switzerland.*

**Public finances remain remarkably sound in Liechtenstein, characterised by virtually zero debt and substantial financial reserves.** Maintaining sound public finances, preserving high reserves to cushion against unforeseen economic shocks and remaining independent from international debt markets are priorities shared by all political parties in parliament. To achieve sound public finances, a reliable budgeting process is crucial, as explained in Box 2. Following an ambitious structural reform package after the global financial crisis, Liechtenstein has consistently reported budget surpluses since 2014. According to the latest public finance statistics, budget surpluses at the general government level amounted to 7.4 % of GDP in 2020, 2.5 % in 2021, and 3.3 % in 2022, respectively. In 2022, adverse market developments led to a significant negative impact on financial reserves, with net financial reserves declining by approximately CHF 680 million at the general government level. Despite this, public sector financial reserves remain extraordinarily high. At year-end 2022, net financial assets exceeded CHF 7 billion, representing around 100 % of GDP. Data for the general government level in 2023 are not yet available, but at the central government (state) level, Liechtenstein reported a budget surplus of CHF 153 million (about 2.2 % of GDP) last year. Following a negative performance in 2022, financial reserves at the state level posted profits of CHF 221 million in 2023, resulting in an overall increase in reserves by more than CHF 370 million, or over 5 % of GDP. Against this backdrop, public finances remain well-positioned to handle future challenges.

**From an analytical perspective, data availability remains a challenge.** Official national accounts are only available on an annual basis and with significant time lags, complicating analyses based on GDP figures. Furthermore, price statistics and deflators are typically derived from Swiss data, as explained in Box 3, which outlines a preliminary approach to calculating a GDP deflator for Liechtenstein. Data availability is also limited in various other areas, including the external sector and real estate. In this context, IMF accession will be beneficial, as it will provide access to technical assistance from IMF experts to develop state-of-the-art macroeconomic statistics.

BOX 2

## Liechtenstein's sound public finances, the role of legal requirements and the budgeting process

*by Elias Hasler*

**Liechtenstein stands out in international comparison due to its exceptional fiscal health, underpinned by a stable tax base, political stability, and prudent budgeting.** The country has virtually no government debt and, as of the end of 2022, holds liquid reserves of CHF 2.5 billion (i.e. around 35 % of GDP) at the central government level. Parliamentary debates reflect a broad political consensus on avoiding overspending and maintaining fiscal discipline. Liechtenstein has consistently reported budget surpluses over the past 10 years. This box explores how Liechtenstein's budgeting process sets it apart from other countries and examines the potential of using revenue and GDP forecasting to enhance fiscal planning.

**While most countries rely on economic and fiscal forecasts for budgetary planning, Liechtenstein adopts a unique strategy focused on maintaining budgetary continuity, largely independent of GDP fluctuations.** Liechtenstein's strong fiscal responsibility is evident not only in its fiscal balance but also in its budgeting process. The process is outlined in the financial budget act (Finanzhaushaltsgesetz, FHG), which states that the government has to create a four-year financial plan (Art. 25 FHG), detailing projected revenues, expenses, and investments. Article 26 sets five fiscal principles: (1) maintaining a balanced budget, (2) ensuring expenditure growth does not outpace revenue growth, (3) financing at least 90 % of investments internally, (4) keeping the financial asset-to-liability ratio above 420 %, and (5) maintaining financial assets at 1–3 times the operational expenditures. Article 27 requires compliance with these benchmarks, with measures proposed if targets are not met.

**To explore revenue forecasting based on GDP developments in more depth, this box applies the commonly used tax buoyancy method to assess the viability of improving Liechtenstein's budgetary process.** This relatively straightforward and reliable approach features long-run and short-run tax buoyancy. Long-run tax buoyancy measures the proportional change in tax revenues in response to a proportional change in GDP over the long term, reflecting how tax revenues generally align with economic growth. Short-run tax buoyancy, on the other hand, measures the immediate response of tax revenues to changes in GDP, capturing the short-term elasticity of tax revenues relative to economic fluctuations.

To estimate long-run tax buoyancy, we follow the standard approach of the IMF and OECD and estimate a time series regression model where tax revenues relate to GDP through the following equation:

$$\ln(tax_t) = \alpha + \beta \ln(GDP_t) + u_t$$

where $\alpha$ is the constant, $\beta$ measures the long-run effect of GDP changes on tax revenues (i.e. long-run tax buoyancy), and $u_t$ represents the error term. For the second step, we estimate short-run tax buoyancy with an Error Correction Model (ECM) using Ordinary Least Squares (OLS), incorporating the error estimated from the long-run model:

$$\Delta \ln(tax_t) = \gamma + \lambda(\ln(tax_{t-1}) - \beta \ln(GDP_{t-1})) + \theta \Delta \ln(GDP_t) + \epsilon_t$$

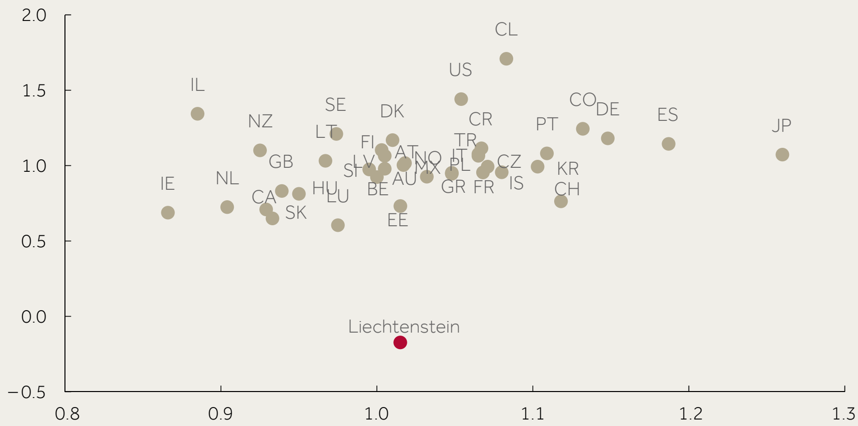
Here, $\Delta \ln(tax_t)$ and $\Delta \ln(GDP_t)$ are the first differences of the log of tax revenues and GDP, respectively, while $(\ln(tax_{t-1})-\beta \ln(GDP_{t-1}))$ acts as the error correction term indicating deviations from the long-run relationship. Furthermore, $\gamma$ serves as the constant term, $\theta$ measures the immediate response of tax revenues to

BOX 2

changes in GDP (i.e. short-run buoyancy), $\lambda$ indicates the speed at which the system adjusts to the long-term equilibrium, and $\epsilon_t$ is the error term. For more details on the methodology see OECD (2023). We estimate the short- and long-run tax buoyancy for Liechtenstein using nominal annual tax revenue data from the central government, covering the period from 1998 to 2022.

*Figure B2.1*
*Short- and long-term tax buoyancy*
*(value of coefficients)*

*Sources: OECD, Office of Statistics, own calculations.*




**Liechtenstein's tax base is basically decoupled from short-term GDP fluctuations, but closely aligned with long-term GDP growth.** OECD[1] countries have long-term tax buoyancies between 0.86 and 1.26, indicating that generally tax revenue grows with GDP. In line with this range, Liechtenstein features a long-term buoyancy of 1.02, as can be seen in Figure B2.1. However, its short-term buoyancy is considerably lower at −0.17, suggesting no correlation between short-term GDP changes and tax revenue. The disconnect of tax revenues from the business cycle can be attributed to several factors: businesses in Liechtenstein engage in labour hoarding during economic downturns, helping to stabilise employment and tax revenue; the tax system relies on wealth and indirect taxes, which are less sensitive to short-term economic fluctuations; many corporations in Liechtenstein are multinational, so their profits are decoupled from local GDP; the country's diversified revenue streams mitigate the impact of short-term GDP volatility; and finally, Liechtenstein's GDP does not fully capture external economic activities of Liechtenstein's multinational corporations, such as cross-border transactions and international investments, which play a significant role in the economy. While these factors collectively stabilise tax revenue despite GDP fluctuations, other factors, such as the concentration of taxpayers, can result in tax revenue volatility if individual firms experience an extraordinary year.

**While these results indicate that the business cycle and tax revenues are not closely connected in Liechtenstein, this preliminary analysis has some limitations.** Firstly, tax reforms during the period analysed may have introduced distortions in the tax data for certain periods. Additionally, VAT is collected by Swiss authorities and then redistributed to Liechtenstein according to a specific formula, which relies on data from previous years. Similarly, a common concern is the temporal mismatch between tax revenues and

1 *OECD (2023), "Tax revenue buoyancy in OECD countries", in Revenue Statistics 2023: Tax Revenue Buoyancy in OECD Countries, OECD Publishing, Paris.*

BOX 2

GDP in general (see, for example, Box 2.4 in OECD, 2023). Lastly, given that firms in Liechtenstein are large relative to its GDP and tax revenue, one-off extraordinary effects can significantly impact aggregate macroeconomic data. Nevertheless, simple robustness checks suggest that the main findings remain valid despite these limitations. Still, further research is needed.

**Revenue forecasting based on GDP is unreliable for Liechtenstein due to specific economic and other limiting factors.** The concentration of taxpayers and the sensitivity of data – where changes in a single company can significantly impact revenue – call for a cautious approach to budgeting, particularly by collecting firm-specific information from large corporations. Additionally, the time lags in official statistics and data limitations make accurate forecasting even more challenging. Given Liechtenstein's strong fiscal health and steadfast commitment to fiscal sustainability, there is no immediate need for more refined revenue forecasts. While quantitative methods may not be effective for forecasting in this context, continuing existing approaches by applying expert judgment and leveraging predicitons from individual firms regarding their expected tax contributions offer a more practical approach to ensure a reliable budgeting process.

***References***

*OECD. (2023). Tax revenue buoyancy in OECD countries. In Revenue Statistics 2023.*

BOX 3

## Constructing a GDP deflator for Liechtenstein

*by Andreas Brunhart*

**Economic activity is commonly measured in real values to eliminate the effects of nominal price changes.** Nominal aggregates, such as nominal GDP, can fluctuate due to variations in both the quantities of transactions (e.g. the number or volume of goods and services exchanged) and price levels. To accurately assess economic dynamics, it is crucial to adjust nominal variables for price changes using price indices. This adjustment helps isolate and remove the impact of price fluctuations, allowing for the calculation of real variables that better reflect changes in quantity. This approach is particularly important for long-term comparisons, where price effects can accumulate and obscure the volume changes that are central to understanding economic growth.

**Unfortunately, Liechtenstein's national accounts only provide nominal figures, and there are no official deflators, such as consumer, producer, or export / import price indices, available.** To adjust for price changes and obtain real data, Swiss price indices, such as the consumer price index or the total GDP deflator, are typically used in economic analyses of Liechtenstein. This method is justifiable due to Liechtenstein's integration with the Swiss currency and customs area, as well as the partially shared taxation and import duties (e.g. value-added tax). Additionally, the similarities in living standards, economic development, and economic structure between the two countries support this approach. It is assumed that price developments in Liechtenstein closely mirror those in Switzerland, much like the variations among Swiss cantons for which no separate price indices are collected. The Liechtenstein Office of Statistics publishes the Swiss consumer price index on its website, highlighting its relevance for Liechtenstein.

**At the same time, Swiss price indices, particularly the Swiss GDP deflator, do not fully capture the sectoral composition of the Liechtenstein economy.** To address this issue, Swiss disaggregated price indices can be adjusted to reflect Liechtenstein's sectoral composition. In a preliminary research project, the Liechtenstein Institute has developed a reweighted GDP deflator for Liechtenstein using sectoral gross value-added data and Swiss sectoral price data. Nominal national accounts data for Liechtenstein are available from 1998 to 2022, with detailed sectoral gross value-added data for 34 NACE sub-sectors from 2016 to 2021. For the years 1998 – 2015, data are available only for four broad sectors: agriculture, industry, financial services, and other services. For years beyond this range, only aggregated GDP figures are available, with data for the year 2022 provided by the Office of Statistics and data for the years 1972 – 1997 and 2023 by the Liechtenstein Institute. To create Liechtenstein GDP deflators, implicit sub-sectoral deflators are first calculated using the difference between nominal and real figures from Swiss gross value-added data provided by the Swiss Federal Statistical Office. The Swiss price data series, which includes 59 sub-sectors, are then mapped to Liechtenstein's 34 sub-sectors. These sub-sectoral price indices are reweighted to match Liechtenstein's economic structure by deflating each sub-sector's gross value-added series separately and summing them to obtain the aggregated gross value-added and GDP. The resulting GDP deflator is then rescaled to a reference year. This approach not only produces GDP deflators specific to Liechtenstein but also generates individual deflators for each sector within Liechtenstein.

**The dynamic pattern of Liechtenstein's real GDP is broadly consistent across different deflators, although year-on-year growth rates can vary significantly in some years.** Figure B3.1 illustrates Liechtenstein's real GDP using three different deflators: the GDP deflator constructed from 34 sub-sectors, the GDP deflator from 4 broad sectors, and the total Swiss

BOX 3

GDP deflator. The long-term trends in the real GDP series are very similar and the growth rates are highly correlated and generally of comparable magnitude, regardless of the deflation method. However, differences in real GDP growth rates can be notable depending on the deflator used. For example, in 2021, the real GDP growth rate calculated using the 4-sector deflator was 1.1 percentage points higher, and using the 34-sector deflator was 3.2 percentage points higher compared to the total Swiss GDP deflator. This discrepancy occurred because price developments varied significantly across sub-sectors that are crucial to Liechtenstein's economy, diverging from the overall price trends observed in Switzerland.

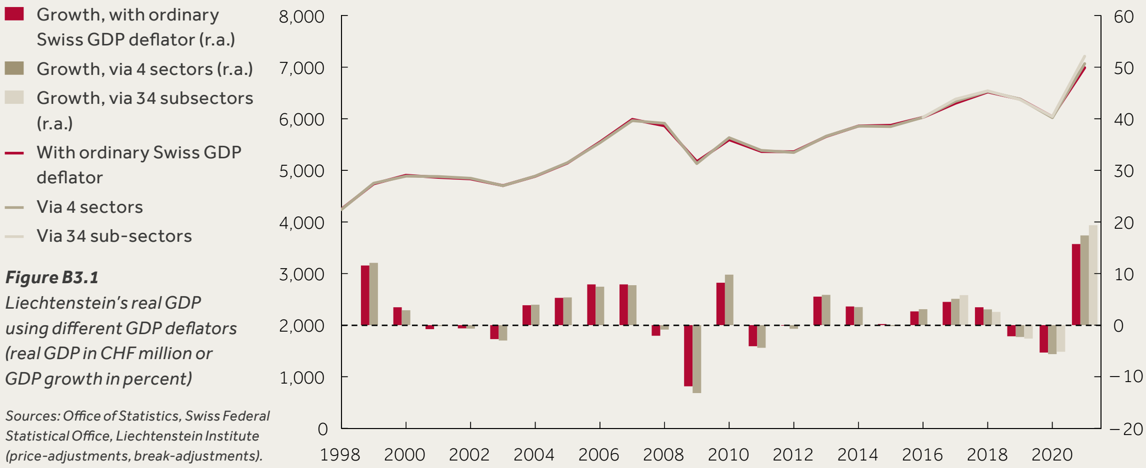



*Figure B3.1*
*Liechtenstein's real GDP using different GDP deflators (real GDP in CHF million or GDP growth in percent)*

*Sources: Office of Statistics, Swiss Federal Statistical Office, Liechtenstein Institute (price-adjustments, break-adjustments).*

**Applying Swiss sub-sectoral price deflators to develop more accurate price deflators for Liechtenstein's sectoral gross value added and GDP presents several challenges, some of which warrant further investigation.** First, practical implementation is complicated by the lack of consistent time series. To address this issue, a hybrid GDP deflator time series must be constructed by linking the total Swiss GDP deflator (1972 – 1998), the reweighted sectoral GDP deflator (4 sectors, 1998 – 2016), and the reweighted sub-sectoral GDP deflator (34 sub-sectors, 2016 – 2021). Second, the publication lag of nearly two years for both Liechtenstein's nominal gross value-added data and Swiss real sub-sectoral data means that the reweighting process cannot be performed for the most recent two years. During this period, only GDP estimates (provided by the Office of Statistics and Liechtenstein Institute) are available, not national accounts data. Using the Swiss total GDP deflator for these two years, where a Liechtenstein-specific deflator cannot be constructed, would likely exacerbate the already high revision sensitivity of Liechtenstein's GDP (similar issues apply to quarterly GDP estimates by the Liechtenstein Institute). Third, the procedure is computationally demanding, particularly due to the non-additivity of chain-linked price deflators, which are standard in international practice. Chain-linked sub-sectoral price deflators mean that disaggregated real values cannot be directly summed to obtain aggregated real gross value-added. Rebalancing formulas must be applied to address this issue (see also Nierhaus, 2007). Fourth, just as the Swiss sub-aggregates do not precisely sum to the total aggregated real gross value-added and GDP, the same applies to the derived sectoral and sub-sectoral real figures for Liechtenstein, when Swiss sub-sectoral prices are used to construct a new GDP deflator.

BOX 3

**The method used here does not replace the need for official real national accounts data, as it cannot fully account for potential differences within sub-sectors – both with respect to composition and price dynamics between Liechtenstein and Switzerland.** It remains uncertain whether the Office of Statistics, as recommended by IMF experts during Liechtenstein's IMF accession process, will eventually publish official real figures, and if so, what methodologies they will employ. Even if real official data becomes available in the future, the preliminary calculations and methodological discussions presented here will still be relevant. They will provide a basis for historical estimations and help in constructing comparable real national accounts time series for the past.

***References***

*Nierhaus, W. (2007): "Vorjahrespreisbasis: Aggregation und Verkettungsdifferenz". Ifo Schnelldienst, 6 / 2007: pp. 29 – 33.*

## FINANCIAL MARKET DEVELOPMENTS

**Amid declining inflation rates, central banks worldwide have begun easing their monetary policies in 2024 (Figure 8).** In the euro area, the European Central Bank (ECB) cut its key deposit rate three times by 25 basis points (bps) between June and October, bringing the deposit rate down to 3.5%. The US Federal Reserve was more cautious, due to the strength of the economy and persistent inflationary pressures. However, in September, the Federal Open Market Committee (FOMC) lowered the policy rate by 50 bps, with the median FOMC member expecting an additional 50 bps cut by year-end. In Switzerland, the Swiss National Bank (SNB) began cutting rates as early as March, supported by low headline inflation and core inflation well within its target range. Two further reductions in June and September have lowered the Swiss policy rate to 1%. Despite these adjustments, monetary policy faces ongoing challenges, with core inflation rates still above targets in both the US and the euro area, alongside a weakening economy. Striking the optimal balance for monetary policy remains a difficult task.

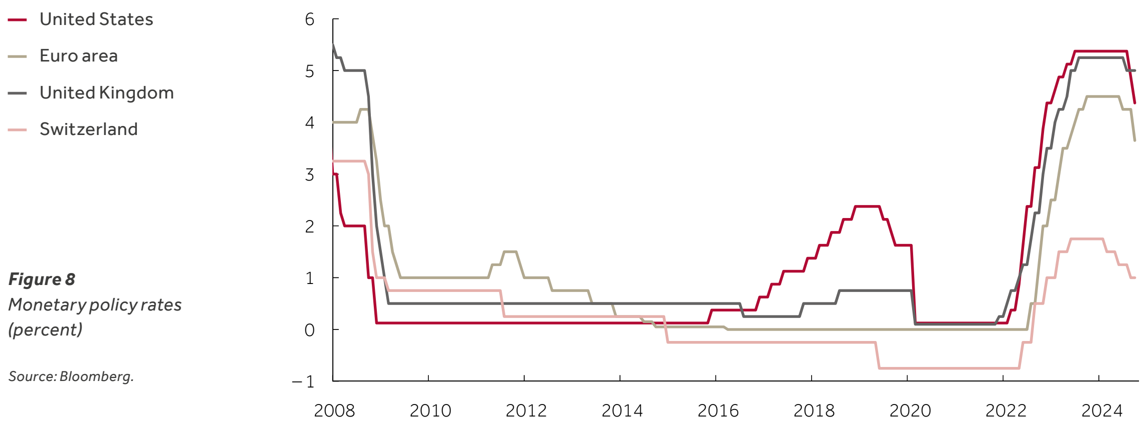



***Figure 8***
*Monetary policy rates (percent)*

*Source: Bloomberg.*

**Long-term sovereign bond yields have remained relatively stable in both the US and the euro area since the beginning of the year, while Switzerland has seen a decline in interest rate expectations.** Although long-term interest rates in the US and the euro area rose slightly in the first half of the year due to persistent inflation, they have started to decrease in recent months amid slower economic growth (Figure 9). In Switzerland, lower inflation and early monetary policy easing resulted in a downward shift in the yield curve, with 10-year sovereign bond yields falling to 0.4% in September.

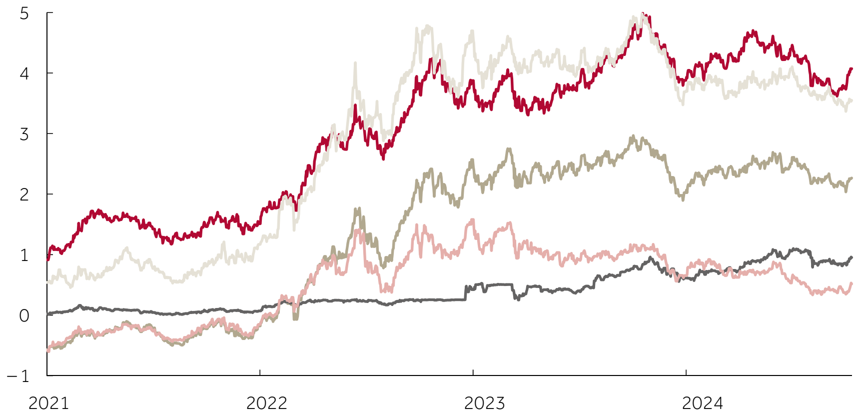



*Figure 9*
*Sovereign bond yields (10y)*
*(percent)*

*Source: Bloomberg.*

**Despite higher interest rates and weak economic growth, global equity markets have rallied since the beginning of 2023.** The US stock market, as measured by the S&P 500, surged nearly 50% between January 2023 and the end of September 2024, reaching new record highs (Figure 10). European markets also performed strongly, with the Eurostoxx 50 and DAX indices rising by approximately 30% and 35%, respectively, over the same period. While gains were more modest in Switzerland (SMI) and the UK (FTSE 100), both markets still posted significant positive returns.

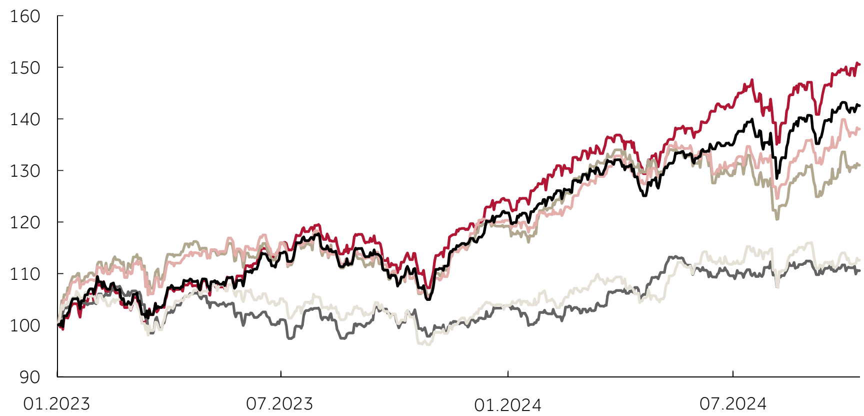



*Figure 10*
*Global equity markets*
*(index; 1.1.2023 = 100)*

*Source: Bloomberg.*

**Recently, however, equity markets experienced temporary losses amid heightened volatility.** In early August, stock markets saw increased fluctuations following an unexpected monetary policy tightening in Japan and lower-than-expected job creation in the US. A sharp unwinding of USD / JPY carry trades likely intensified the financial market turbulence. Although the period of stress was brief and asset prices recovered most of the losses in the weeks that followed, the episode highlighted the vulnerability of markets to negative surprises.

**Following a period of depreciation in the first half of the year, the Swiss franc's nominal-effective exchange rate (NEER) has resumed its upward trajectory.** Over the past four years, the CHF has appreciated significantly against its major trading partners, as reflected in the NEER (Figure 11). This trend was briefly interrupted when the Swiss National Bank (SNB) unexpectedly eased monetary policy, but the appreciation has continued in recent months, driven by monetary easing in other major economies. However, the real-effective exchange rate (REER) – a more accurate measure of price competitiveness – has remained relatively stable, as the nominal appreciation has largely been offset by strong inflation differentials between Switzerland and its trading partners. Nevertheless, the strong Swiss franc poses challenges for certain sectors where exchange rate movements exceed inflation differentials.

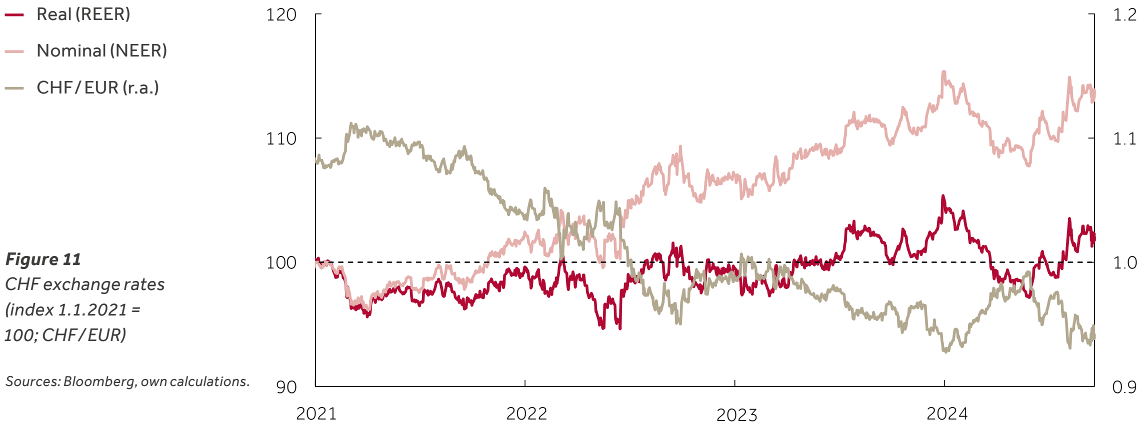



***Figure 11***
*CHF exchange rates (index 1.1.2021 = 100; CHF / EUR)*

*Sources: Bloomberg, own calculations.*

## REAL ESTATE MARKET DEVELOPMENTS

**Since 2022, the FMA has been collecting detailed data on mortgage lending.** This dataset is based on the ESRB recommendation[2] on closing real estate data gaps and includes information on loan volumes, loan-to-value (LTV) ratios, loan-to-income (LTI) values, loan-service-to-income (LSTI) values, interest coverage ratio (ICR), and the fixation periods for residential real estate (RRE) loans secured by properties in Liechtenstein and Switzerland. In addition, the FMA also collects information on CRE lending, which mainly focuses on LTV, NPLs and provisions. This comprehensive dataset provides an in-depth overview of current mortgage lending conditions, which is monitored on a quarterly basis. In addition, the FMA monitors data included in the local FINREP, which uses different definitions compared to the ESRB definition for RRE and CRE by focusing on the use of the property in contrast to the borrower type (natural vs. legal person). These differences are considered in the risk monitoring framework of the FMA.

**The primary objective of the new data is to monitor and assess potential risks to financial stability arising from housing credit.** By analysing trends and identifying any signs of extensive lending within Liechtenstein, the FMA can proactively address emerging risks and safeguard the financial system. The insights gained are essential for the evaluation of macroprudential policies, ensuring that mortgage lending practices do not negatively impact financial stability.

**Despite rising mortgage rates, which have increased the debt servicing burden on households, the stock of mortgage loans has continued to grow in recent quarters.** Unlike many other EEA countries that have experienced a slowdown in their mortgage markets, Liechtenstein has not seen such a decrease. Both the total stock and the flow of new mortgage loans have continued to increase, particularly for buy-to-let and income-producing real estate secured by mortgages in Switzerland.

**Despite a slight reduction, household debt in Liechtenstein remains persistently high.** Elevated levels of household indebtedness continue to pose a significant vulnerability. Household debt[3] decreased from its peak of 122 % of GDP in 2019 to around 115 % as of end-2023, mainly due to GDP revisions. A key factor in the reduction of the household indebtedness ratio

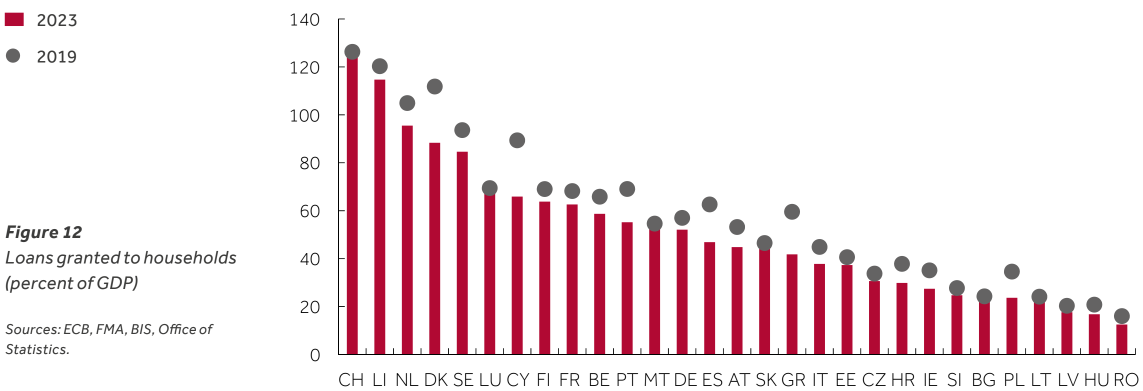



***Figure 12***
*Loans granted to households (percent of GDP)*

*Sources: ECB, FMA, BIS, Office of Statistics.*

2 *ESRB / 2016 / 14 as amended.*

3 *The household debt-to-GDP for Liechtenstein is only approximately comparable to other EEA countries, as the debt figure is not defined on a consolidated basis (i.e. credit within the household sector or even within the family is also included). Thus, this definitional issue inflates the ratio relative to other EEA countries.*

was the sharp increase in nominal GDP for Liechtenstein, which grew by 17.2% from 2020 to 2021[4]. This marked a significant rebound following a 6% contraction in 2020 during the pandemic and a 2.3% decline in 2019. Despite these improvements, Liechtenstein continues to rank first among the countries with the highest household indebtedness in the EEA (Figure 12), making the sector particularly vulnerable to unexpected macroeconomic shocks. The situation is further exacerbated by high loan-to-income (LTI) ratios among many households, as highlighted in the FMA's real estate report[5]. The average LTI ratio for residential real estate loans at origination stood at 5.9 in the second quarter 2024. This indicates, despite the volatility of this indicator, that a significant proportion of highly indebted households, especially those with lower incomes, remain susceptible to economic shocks, implying continued systemic risk in the sector.

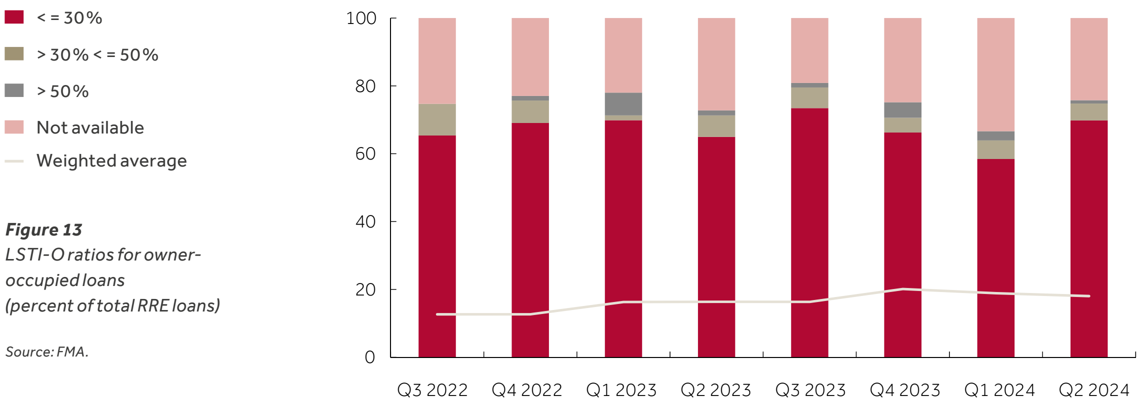



***Figure 13***
*LSTI-O ratios for owner-occupied loans (percent of total RRE loans)*

*Source: FMA.*

**The monetary policy tightening that started in 2022 has led to a deterioration in the debt servicing capability of households, marked by an increase in loan-service-to-income (LSTI) ratios of new mortgage loans.** Interest rates in the Swiss franc currency area have also increased, though they remain considerably lower than those in other European countries. Against this backdrop, the average LSTI ratio based on effective interest rates has risen in Liechtenstein. Additionally, the share of loans falling into risky categories, such as those with an LSTI above 30% or 50%, has increased (Figure 13), negatively affecting loan affordability. The average effective LSTI for owner-occupied loans at origination increased from 12% in Q3 2022 to 20% as of Q4 2023, and has remained around this level since then. This rise can be attributed to the deterioration in the debt servicing capabilities of households taking out new loans due to the increase in interest rates. At the same time, the average loan volume, both for owner-occupied and buy-to-let properties, decreased, in particular, for loans granted in Switzerland.

4 *Official GDP data become available with a two-year delay, thus complicating a comprehensive analysis in terms of debt ratios.*

5 *The report was published by the FMA in October 2021 (available in German only): "Immobilien- und Hypothekarrisiken in Liechtenstein: Risiken aus Sicht der Finanzstabilität". A summary of the main findings of the report can be found in Box 4 of the 2021 Financial Stability Report.*

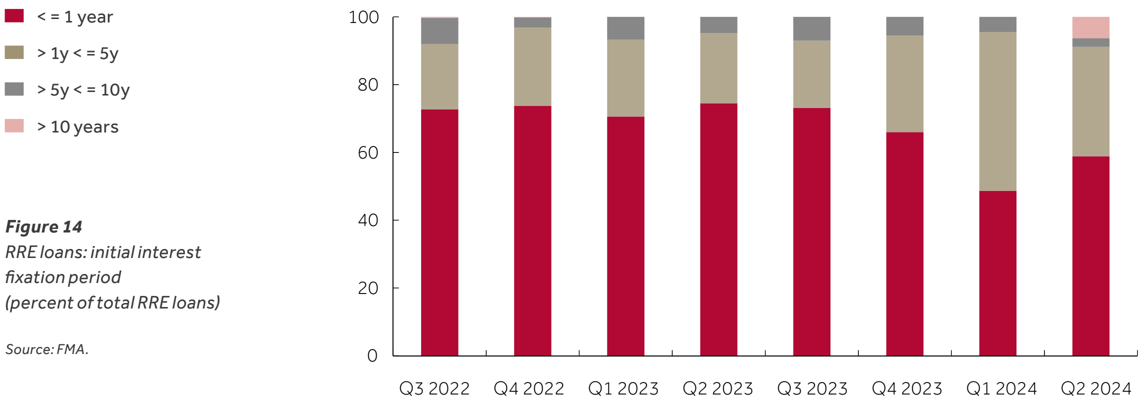



***Figure 14***
*RRE loans: initial interest fixation period (percent of total RRE loans)*

*Source: FMA.*

**The fixation period for new loans has begun to increase in recent quarters.** When interest rates started rising in the Swiss franc currency area in 2022, there was initially a trend toward variable or short-term fixed rates, as these were significantly lower than longer-term fixed rates due to a steep yield curve and market expectations of further rate hikes. This led to an uptick in variable loans at the time of origination, with the share increasing to around 75% (see Figure 14). However, since the end of 2023, this trend has reversed. In light of an inverted yield curve with markets anticipating future interest rate cuts, longer fixation periods are available at more favourable rates than variable loans. Since the majority of existing loans are on a fixed-rate basis, the rise in mortgage rates has only been partially passed through to mortgage holders. This is particularly due to the widespread use of loans with long interest rate fixation periods.

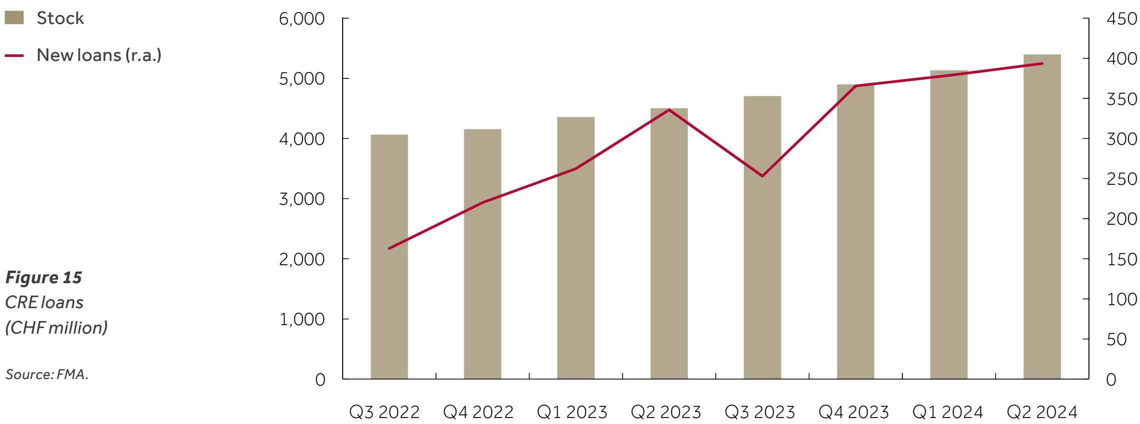



***Figure 15***
*CRE loans (CHF million)*

*Source: FMA.*

**Financial stability risks from rising interest rates were mitigated by several factors.** Several factors help mitigate the impact of higher interest rates on households in Liechtenstein, where the real estate market has some unique characteristics. First, the high resilience of the labour market, with virtually no correlation between GDP growth and unemployment[6], combined with strong job security, provides house-

6 *For more information on Okun's law and Liechtenstein's highly resilient labour market, see Box 2 of the Financial Stability Report 2021.*

holds with greater income stability and planning certainty. Additionally, conservative lending standards, particularly in terms of loan-to-value (LTV) ratios at origination, along with high asset quality, play a key role in reducing systemic risk. The lower increase in policy rates relative to many European countries associated with lower inflation rates, and the high proportion of fixed-rate mortgages in the domestic banks' mortgage portfolios further lessen the immediate effects of rising interest rates on households and the banking sector. However, the challenges related to high household indebtedness need to be addressed in the medium-term. In response, the Financial Stability Council (FSC) issued a recommendation in July 2023 to adjust the existing borrower-based measures. The FSC proposed implementing a harmonised framework for LSTI limits and tighter amortisation requirements to tackle the issue of high household indebtedness (see Chapter 5).

**In contrast, commercial real estate (CRE) loans play a relatively minor role in the domestic banking sector.** Commercial real estate (CRE) loans secured by commercial property in Liechtenstein account for approximately 10 % of total bank lending in Liechtenstein and 19 % of total mortgage loans in Liechtenstein as of end-2023, according to the national definition for CRE [7]. Furthermore, the total outstanding amount of CRE loans in Liechtenstein relative to total assets of the unconsolidated banking sector makes up only around 1.8 %, as Liechtenstein banks mainly focus on private banking services. This relatively small proportion of CRE loans in banks' portfolios helps to mitigate the impact of potential liquidity or solvency issues in the domestic CRE sector. However, when considering the ESRB definition, the total amount of CRE loans has seen a steady increase since 2022 (Figure 15). A large share of these CRE loans are loans taken out by legal entities (i.e. professional developers) for dwelling purposes, in particular in Switzerland, which are considered as RRE loans under the national definition. Another risk-mitigating factor for financial stability is that NFCs in Liechtenstein have high equity ratios, indicating a low level of indebtedness, which is encouraged by the country's tax system. Thus, credit risks associated with the CRE market in Liechtenstein are assessed to be limited. To sum up, as lending volumes for CRE are relatively small, it is unlikely that the CRE market poses significant risks to domestic financial stability.

**Existing data on lending indicates that lending standards and asset quality have remained relatively stable in recent years.** Both for new loans and the overall CRE loan portfolio, LTV ratios have remained steady, with the average LTV at 60 % (for both LTV-C and LTV-O). In addition, debt-service-coverage ratios (DSCR) are also stable with the average DSCR in the stock being around 190 % as of Q2 2024. In terms of asset quality, non-performing loans (NPLs) in the CRE market have remained low, even amid rising interest rates. Recent data on CRE loans shows no significant increase in NPL ratios, which stood at just 0.5 % of total CRE lending as of Q2 2024. The overall NPL ratio also remains very low by international standards, at 0.9 % on a consolidated basis as of Q2 2024. Provisions for CRE loans, relative to the outstanding amount, have held steady at 0.3 % as of Q2 2024, showing little change over the past few years. Given these conservative and stable lending standards observed in recent quarters, there are currently no elevated systemic risks observed in the CRE sector.

*7 The national definition of real estate loans classifies RRE (residential real estate) and CRE (commercial real estate) loans according to the property's use (residential vs. commercial), while the ESRB definition mainly differentiates based on the type of borrower (natural vs. legal person).*

# RECENT DEVELOPMENTS AND SYSTEMIC RISKS IN THE FINANCIAL SECTOR

## CROSS-SECTORAL DEVELOPMENTS AND SYSTEMIC RISKS

### Macro-financial risks

**From a short-term perspective, the global macro-financial risk outlook has slightly improved over the past year.** While interest rates remain high and economic growth is sluggish, the onset of monetary easing in most economies is a positive signal. Lower rates are expected to ease balance sheet pressures for non-financial corporations (NFCs) and households, potentially enhancing asset quality in the banking sector. However, downside risks to growth persist, driven by ongoing inflationary pressures and uncertainty around the pace of future policy easing, maintaining a high level of uncertainty in the overall risk outlook. Any negative developments in global growth or the inflation outlook could lead to a sharp deterioration in investor sentiment, exacerbating vulnerabilities in both non-financial and financial sectors.

**While lower interest rates are a positive development for the real estate sector, vulnerabilities persist.** Household financial positions have been strengthened by the resilience of labour markets in the euro area, Switzerland, and Liechtenstein. The ongoing adjustment in residential real estate (RRE) markets in the euro area has been orderly, but households with lower incomes and / or floating-rate mortgages continue to face challenges from higher interest rates. In the European commercial real estate (CRE) market, there are signs that the correction may be bottoming out, though the full extent may not yet be reflected in current data and market activity remains weak. In the Swiss franc currency area, corrections have been minimal or non-existent due to the moderate rise in interest rates, and asset quality in the banking sector has remained robust. While risks in Liechtenstein's real estate sector are limited, high levels of indebtedness of private households make the sector vulnerable to negative shocks.

**Stretched valuations in financial markets continue to be a significant concern.** Although equity markets have quickly rebounded from the financial turmoil in August, they remain vulnerable, as risk pricing appears overly benign. Markets are increasingly sensitive to macroeconomic data releases and shifts in corporate earnings prospects. Sudden changes in monetary policy, uncertain growth prospects, and heightened geopolitical risks suggest an increased likelihood of market corrections, particularly given the high price-earnings ratios in equity markets. Similarly, risk premia remain exceptionally low despite higher interest rates and subdued growth, indicating a heightened risk appetite in the current market environment.

**The widening gap between asset prices and economic fundamentals is raising concerns that financial markets are becoming increasingly vulnerable to negative shocks.** In the US, stock market valuations are heavily concentrated in AI-related stocks, along with traditional carry trades and short volatility positions. Valuations appear particularly overstretched, with the Shiller cyclically-adjusted price / earnings (CAPE) ratio hitting 35 in September. Figure 16 illustrates the historical relationship between the CAPE ratio and the S&P 500's annual return over the subsequent 10 years. Based on valuation data from 1989 to 2014 (i.e. considering 10-year returns up to today), the current CAPE (vertical line) suggests only slightly positive returns for the index over the next decade – markedly lower than the yield on 10-year US Treasury bonds. This projected negative equity premium is further confirmed when factoring in earnings expectations for the coming year, rather than relying on past earnings data as Shiller's method suggests. While the precise causes of this development remain unclear, this analysis underscores the increasing risk of market corrections.

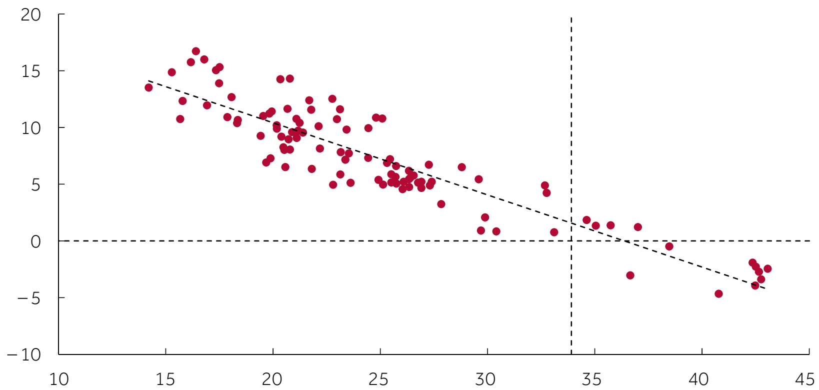



*Figure 16*
*Equity valuations and 10-year performance outlook in the US (cyclically adjusted P/E ratio; annual return over following 10 years)*

*Sources: Bloomberg, Shiller, own calculations. Vertical line indicates CAPE ratio as of June 2024.*

**In the real sector, Liechtenstein's economy remains highly dependent on international developments.** As a small, open economy with a substantial industrial sector, which accounts for around 42% of its GDP, economic developments strongly depend on external demand. Against this background, weak global growth, particularly in key markets like Germany, has resulted in below-average growth over the past two years. In addition to cyclical challenges, Liechtenstein faces structural risks from global geopolitical tensions. These tensions, while posing a downside risk, have already disrupted global trade flows. For instance, as Figure 17 illustrates, daily vessel transit volumes through the Suez Canal have significantly declined since the onset of the Gaza war and vessel attacks in the Red Sea, raising both the cost and time of trade between Asia and Europe. Any further escalation of geopolitical conflicts would likely further harm the global economy, with negative consequences for Liechtenstein's highly export-dependent economy. Furthermore, the driving factors for risks to economic growth generally vary over time. Against this background, policy-makers have to continuously improve their models by taking into account new developments in a timely manner to safeguard financial stability in the long term (see Box 5).

Daily transit trade volume
7-day moving average
Prior year: 7-day moving average


*Figure 17*
*Suez Canal: Daily transit volume (metric tons)*

*Source: IMF Port Watch.*

**The growing trend of fragmentation and protectionism in the global economy presents significant challenges for Liechtenstein.** After a period of strong globalisation marked by liberalised trade policies and reduced tariffs, recent years have seen a sharp rise in protectionist measures driven by economic nationalism and re-shoring, as highlighted in Figure 18. These measures include not only higher tariffs but also non-tariff barriers designed to shield local industries from global competition. For countries like Liechtenstein, where domestic demand is negligible for the industrial sector, such developments are concerning. While Liechtenstein's largest corporations in the industrial sector are characterised by strong R&D expenditures and high levels of innovation, continued market access remains crucial for sustaining the success of Liechtenstein's export-driven economy.

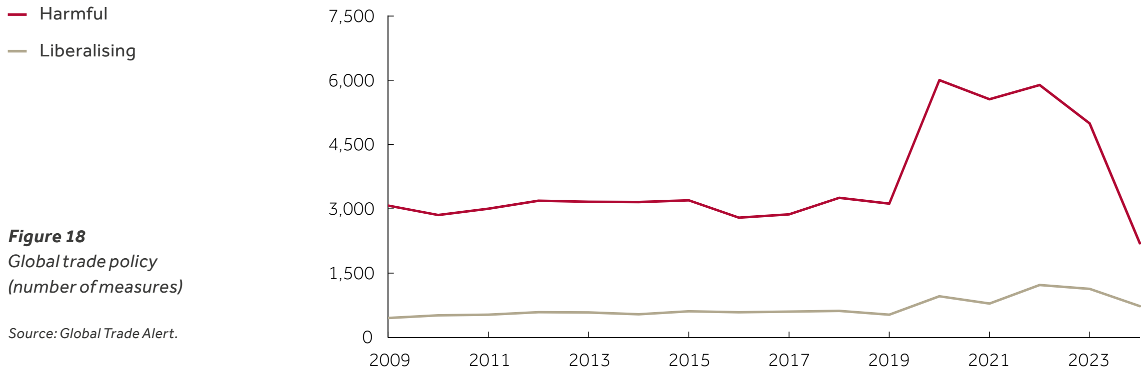



***Figure 18***
*Global trade policy*
*(number of measures)*

*Source: Global Trade Alert.*

## Reputational risks

**Financial integrity (FI) failures, particularly those related to anti-money laundering (AML), combating the financing of terrorism (CFT) as well as sanctions compliance, pose structural risks to the functioning of financial markets.** As financial systems become more interconnected and risks can spread more easily through various channels, good governance is becoming even more crucial to managing FI related risks. Despite these concerns, the detailed relationship between money laundering and financial market stability has only been marginally explored, and tailored regulatory solutions are still lacking or incomplete (see Box 4 for more details on the risks of FI failures).

**While reputational risks have decreased somewhat for Liechtenstein due to the high political and regulatory commitment to upholding financial integrity, as also evidenced by favourable peer reviews, maintaining strict compliance with international standards remains vital in light of existing risks.** As an EEA member, Liechtenstein fully adopts EU financial regulations, ensuring it operates under a similar legal framework as EU countries, with the FMA actively involved in the European System of Financial Supervision (ESFS). Recent peer assessments, including a commendation from MONEYVAL in June 2022 for Liechtenstein's efforts regarding AML / CFT and top marks from the OECD Global Forum in November 2022 for tax transparency, highlight Liechtenstein's high commitment to international standards and its effective supervisory system, which is also crucial for the stability of its financial centre.

**Reputational risks seem to be particularly focused in the fiduciary sector.** The FMA's supervision over the fiduciary sector is focussed on compliance with AML / CFT and prudential supervisory requirements stipulated in the Fiduciary Act. In addition to the prudential oversight by the FMA, the sector is also subject to self-regulation through the Liechtenstein Institute of Professional Trustees and Fiduciaries (THK). Recent developments have further underscored potential reputational and operational risks within the sector. For example, a few Liechtenstein fiduciary firms and individual fiduciaries have been included on the OFAC sanctions list, due to accusations of violating US sanctions. While these incidents have revealed certain legal challenges in ensuring foreign sanctions compliance, the limited spill-over effects on other financial intermediaries and the financial centre as a whole highlight the strong trust in Liechtenstein authorities in managing these risks, with international counterparts demonstrating confidence that any violation of law is resolutely prosecuted.

**In light of the recent OFAC sanctions, the FMA published a communication[8] formalising its existing interpretation and expectations regarding the management of risks related to foreign sanctions.** The FMA communication emphasises that foreign sanctions, particularly OFAC sanctions, must be considered as part of the financial institutions' risk management. While foreign sanctions are not directly applicable in Liechtenstein, failing to comply with them can result in severe reputational, operational, and legal risks for supervised entities and their business partners. This includes the risk of a supervised entity being sanctioned, potentially restricting access to payment systems and threatening its economic survival. OFAC sanctions from the US Treasury are particularly significant due to the central role the USA play in the global financial infrastructure. Any sanctions related to Liechtenstein intermediaries pose a risk to the entire Liechtenstein financial market and the country as a whole. The FMA outlines how foreign sanctions should be integrated into risk management procedures. The communication emphasises that in cases related to foreign sanctions the immediate termination of business relationships is the only effective way to mitigate risk. The FMA further underscores the importance of adhering to the OFAC guidelines, particularly those targeting support for Russia's military-industrial base, and recommends aligning risk management measures accordingly.

**Monitoring the interconnectedness between the fiduciary and banking sector remains challenging due to data limitations.** Reputational risks in the fiduciary sector can, in principle, represent a systemic threat to the banking sector, as a termination of a correspondent banking relationship in the case of a crisis could severely jeopardise a bank's business model within a very short timeframe. If correspondent banks cannot be replaced swiftly in the event of such a termination, substantial negative repercussions on the economy are likely. Against this background, similar to other European countries, further clarifications on how to effectively enforce compliance with foreign sanctions could be helpful both to increase legal certainty for financial market participants as well as to support the work of responsible authorities.

**The FinTech sector, including crypto-asset service providers, can also pose reputational risks to the financial sector and thus demands vigilant monitoring.** FI incidents within the FinTech sector can directly impact the broader financial sector, potentially affecting its reputation and causing spillover effects on the traditional financial system (see Box 4). As the market grows over time and crypto-assets increasingly integrate with traditional finance, driven in part by the Markets in Crypto-Assets Regulation (MiCAR), the EU's new regulatory framework for crypto-assets to be introduced also in Liechtenstein via the EEA, these effects may intensify further. The introduction of MiCAR in 2025, however, will reduce the regulatory uncertainty currently prevalent in the FinTech sector, a factor closely linked to reputational risks.

8 *The communication is available on the FMA website: FMA Communication 2024/2.*

BOX 4

## Financial integrity failures: Impacts, risks and challenges

*by Elias Hasler*

**Financial integrity (FI) failures, especially those related to AML or CFT can have significant negative effects on financial stability.** Quantifying these impacts is challenging. The IMF's 2023 Nordic-Baltic regional report provides an empirical analysis of the effects of FI failures in certain banks within the Nordic-Baltic region, highlighting the associated risks to financial stability (IMF, 2023). While the analysis focuses on the banking sector, the implications are likely not limited to banks, as similar vulnerabilities and contagion effects may also be present across other financial intermediaries. These risks could be particularly pronounced in smaller financial centres, where the financial centre is often – justifiable or not – perceived as more homogeneous. This perception increases the likelihood of broader contagion effects following an FI failure, amplifying the potential risks to financial stability.

**This IMF analysis highlights the potential for contagion effects, where financial integrity issues at one institution can negatively impact others with similar risk exposures.** In cases where a financial centre is perceived as homogeneous, the impact could spread throughout the entire financial centre, regardless of the specific risk exposures or types of financial intermediaries involved. This contagion may occur through market channels, such as equity and bond markets, or operational channels, including correspondent banking relationships, which are of particular importance for the Liechtenstein financial centre.

**The IMF report introduces an empirical approach to evaluating the short-term effects of FI events on bank valuation, credit risk, and liquidity.** This methodology involves analysing shifts in financial indicators, such as equity prices and credit default swap (CDS) spreads, in the vicinity of FI events. By comparing these changes with broader trends in the EU banking sector, the approach effectively controls for external influences. The analysis highlights the immediate market reactions to integrity failures, characterised by significant drops in equity values and heightened funding costs, not only for the affected bank, but also its peers. However, more empirical research is needed to better understand the implications of FI failings on financial stability. To address the associated risks, the report recommends incorporating FI considerations into existing stress testing and risk analysis frameworks, as well as enhancing the capacity of supervisory authorities to swiftly detect and respond to AML / CFT deficiencies.

**FI failures can pose serious risks to financial stability, primarily due to their potential to trigger widespread contagion effects.** While the IMF study centred on banks, similar contagion risks could arise from failures involving other financial intermediaries. In the context of Liechtenstein, spill-overs from the materialisation of reputational risks on other financial market participants were empirically confirmed in the context of a tax evasion scandal that happened almost 20 years ago (see Brunhart, 2014).

***References***

*IMF, Nordic-Baltic Regional Report, IMF Country Report No. 23 / 320 (2023).*

*Brunhart, A. (2014). Stock Market's Reactions to Revelation of Tax Evasion: An Empirical Assessment, Swiss Journal of Economics and Statistics, January, 161–190.*

## Systemic cyber risks

**Cyber threats are becoming increasingly sophisticated and frequent, posing significant risks to the integrity and stability of the financial sector.** As financial institutions become more interconnected and dependent on digital infrastructure, cyberattacks have the potential to cause widespread systemic disruptions. To counter potential threats associated with cyberattacks, the FMA published minimum standards in a guideline [9] already back in 2021 indicating that financial intermediaries in Liechtenstein should report any serious or operationally disruptive cyber incidents to the FMA in a timely manner. Timely notifications enable the FMA to ensure the necessary flow of information and to assess the potential need for regulatory action.

**The regulatory landscape for cybersecurity in Europe has evolved significantly in recent years.** The introduction of the Digital Operational Resilience Act (DORA) by the EU in January 2023 provides a robust framework for enhancing the operational resilience of financial institutions across the EU and beyond. DORA will enter into force on the 17 January 2025 in the EU. Liechtenstein also aims for an implementation of DORA in early 2025.

**The ESRB has issued a recommendation [10] and several reports to integrate systemic cyber risk into the broader macroprudential policy framework.** This includes, among other initiatives, the establishment of the EU Systemic Cyber Incident Coordination Framework (EU-SCICF), based on Article 49 of DORA, aiming at ensuring coordinated responses to major cross-border related incidents or cyber threats with potential systemic impact on the European financial sector between the European Supervisory Authorities (ESAs). Under the EU-SCICF, the ESAs were recommended by the ESRB with establishing points of contact with national authorities, securing communication channels, identifying and conducting contingency exercises to test the resilience of financial infrastructures. These efforts help identify vulnerabilities and enhance overall resilience. In June 2024, the ESRB published a compliance report [11] confirming that Liechtenstein is fully compliant with this recommendation. From a macroprudential perspective, the upcoming assessment of when a major cyber incident becomes systemic will be of significant interest.

**The IMF has also emphasised the growing macrofinancial stability risks posed by cyber incidents [12].** In light of the increasing financial stability risks posed by cyber incidents, the IMF recommends strengthening the cyber resilience of the financial sector through comprehensive regulatory frameworks, effective supervisory oversight, and robust response protocols. It also highlights industry developments such as market concentration, reliance on common third-party IT providers, and increasing interconnectedness as amplifying factors. Policy recommendations include the adoption of national cybersecurity strategies, the development of appropriate regulatory and supervisory frameworks, the cultivation of a capable cybersecurity workforce, and the enhancement of both domestic and international information-sharing arrangements. Additional recommendations focus on strengthening reporting networks for cyber incidents, holding financial firms' board members accountable for managing cybersecurity, and promoting cyber-

9 *FMA (2021). FMA Guidelines 2021 / 3 – ICT Security Guidelines.*

10 *ESRB (2021), ESRB Recommendation on a pan-European systemic cyber incident coordination framework for relevant authorities (ESRB/2021/17)*

11 *ESRB (2024), Summary Compliance Report (ESRB / 2021 / 17)*

12 *IMF (2024). Cyber Risk: A growing concern for macrofinancial stability.*

security training and awareness initiatives. These recommendations are broadly aligned with Liechtenstein's ambitions to mitigate cybersecurity risks.

## Institutional risks

**Liechtenstein, as a small and open economy, heavily relies on a rules-based international order to thrive.** The nation's economic strength is anchored in its deep integration into the global market, supported by its membership in the EEA and close ties with Switzerland through a customs treaty. However, escalating geopolitical tensions and increasing global economic fragmentation pose significant risks. Such fragmentation could hinder market access for key sectors of Liechtenstein's real economy and financial industry. Liechtenstein has consistently proven itself as a reliable international partner, adhering to global standards and engaging in tax-information exchange agreements. This strong international cooperation is essential for maintaining market access both within Europe and globally. Given that the country's internal market is too small for its successful global niche players, Liechtenstein's dependence on a stable, rules-based international order is crucial. Therefore, the growing political and economic fragmentation worldwide presents a potential threat to its economy.

**Liechtenstein's economy benefits significantly from its close connections with the EEA and Switzerland, but these ties also introduce legal complexities.** This integration is crucial for the success of Liechtenstein's businesses, allowing them to operate effectively within the European Single Market and Switzerland. However, this deep integration also introduces certain legal complexities. For example, while Liechtenstein's banking sector is fully integrated into the Swiss financial market infrastructure (FMI) through the currency treaty, Switzerland is classified as a third country by the EU with regard to financial market regulations. This and several other discrepancies[13] can create legal challenges that may affect Liechtenstein's access to the Swiss FMI. Despite these challenges, close collaboration with Swiss authorities and the European Commission has led to pragmatic solutions. However, finding a lasting solution, especially from a political perspective, is contingent upon the institutional framework agreement between the EU and Switzerland. This agreement remains a source of uncertainty for Liechtenstein. Against this background, Liechtenstein authorities strongly support the resumed dialogue between the EU and Switzerland to expand the scope for solutions.

**Liechtenstein's IMF membership increases the resilience of the whole economy by establishing an additional financial safety net in times of crises.** Although Liechtenstein's currency treaty with Switzerland allows Liechtenstein banks access to SNB funding on the same terms as Swiss banks, SNB guidelines suggest that access to emergency liquidity assistance (ELA) is limited for Liechtenstein institutions, particularly when compared to larger Swiss banks or banking groups. As a result, Liechtenstein does not have a fully-fledged lender of last resort, as it lacks an own central bank. Liechtenstein's accession to the IMF presents part of the solution, providing access to additional financial resources under specific conditions. Furthermore, additional measures, such as the SNB's current initiative to accept mortgage credit as collateral for central bank funding also for smaller banks, are important to further strengthening banks' funding sources. In this context, the FMA is in discussions with the SNB how to further develop this issue in the context of Liechtenstein's banking sector. These efforts are essential to ensure that domestic banks have liquidity access, even in the unlikely event of a crisis.

*13 Another example is DORA (Digital Operational Resilience Act), which could present challenges because it requires that third-party providers be located within the EEA.*

**Institutional risks may also arise if global tax reforms are not effectively implemented in response to evolving international tax policies.** The UN vote challenging the OECD's leadership highlights the growing demand for a more inclusive and representative approach to tax governance that reflects the interests of a broader range of countries. As this process unfolds, it will be crucial to observe how the OECD and the UN navigate these changes and what impact they will have on global tax regulations. The involvement of the UN could lead to the establishment of a new international tax framework. This framework might incorporate a different perspective and address issues that may play a less important role in OECD policies, such as specific needs and challenges of lower-income countries. The transition to UN-led tax governance could face several obstacles, including political resistance from countries benefiting from the current system, logistical challenges in coordinating a larger number of stakeholders, and the need to reach consensus on complex tax issues. For Liechtenstein, as a small and open country, global tax policies are of utmost importance to ensure that its economy continues to remain competitive in global markets, also by ensuring global market access.

## Climate-related risks

**Climate-related risks can threaten financial stability through two main channels.** Physical risks involve damage to financial assets from extreme weather events, such as hurricanes or floods, which can decrease asset values and lead to losses for investors and insurers. Transition risks stem from the shift to a low-carbon economy, where policies and market changes favouring renewable energy can reduce the value of high-carbon assets, like those in fossil fuels. These risks are interconnected, as stronger policy actions to mitigate climate change can increase transition risks but may reduce physical risks over time.

**As highlighted in last year's Financial Stability Report, assessing the impact of physical and transition risks on financial institutions is complex.** Such an assessment requires identifying climate-exposed assets and sectors, calculating expected losses, and understanding the nature of assets like coastal real estate and energy infrastructure. Transition risks are shaped by regulatory changes, carbon pricing, technological advancements, and investor preferences for sustainable products. Additionally, interactions between physical and transition risks, along with interlinkages across financial institutions and industries, complicate assessments. Comprehensive data and consistent assessment methods are lacking, particularly in Liechtenstein, making it difficult to accurately gauge climate-related risks and their financial stability implications. In recent years, international authorities are working to further establish definitions, reporting systems, and methodologies for assessing climate risks. In this context, the EU prioritises the transition to a sustainable economy, with institutions like the European Commission introducing a taxonomy to evaluate economic activities' contributions to climate change mitigation. In addition, the ESRB is analysing systemic risks from climate change, aiming to develop macroprudential tools to address these risks. In 2022, the ECB conducted its first climate stress test with major eurozone banks. Globally, organisations like the Network for Greening the Financial System (NGFS), the IMF, and the Basel Committee on Banking Supervision (BCBS) are working on climate-related financial risks to improve banks' risk management and supervisory practices. The FMA is actively following these developments and enhancing its climate risk assessment.

**In July 2024, the FMA published a supervisory approach and its role and supervisory priorities concerning sustainable finance[14].** The FMA highlights the critical role of the financial sector in supporting the transition to a sustainable economy by directing capital towards environmentally and socially responsible activities. Sustainable finance has gained significant importance, and the FMA emphasises transparency and the prevention of greenwashing, ensuring that investors can make informed decisions based on accurate ESG-related (environmental, social and governance) information. The FMA's supervisory focus includes evaluating risk management practices related to ESG factors, enforcing transparency obligations, and integrating sustainability risks into financial institutions' strategies. Additionally, the FMA prioritises combating greenwashing through detailed product assessments and ensuring compliance with regulations such as the EU's disclosure and taxonomy regulation.

**The FMA adopts a risk-based and proportional supervisory approach concerning sustainable finance.** By employing both internal inspections and audits conducted by qualified external auditors, the FMA effectively manages regulatory compliance. The evolving landscape of data availability, driven by the Corporate Sustainability Reporting Directive (CSRD) and European Sustainability Reporting Standards (ESRS), is anticipated to enhance the implementation of ESG strategies. The FMA recognises that limited data availability poses challenges in implementing ESG investment strategies and managing ESG risks. To address this, the FMA applies a proportional supervisory approach. The FMA's 2023 review of regulatory implementation informs its supervisory priorities, aiming to align oversight with current challenges and data improvements. Looking forward, the FMA is developing guidelines for sustainability audits to be implemented from 2025, integrating these requirements into regular audits. Continuous dialogue with stakeholders is crucial for addressing implementation challenges and optimising regulatory effectiveness, ensuring a balanced approach to maintaining financial stability while adapting to emerging sustainability requirements.

*14 FMA (2024): Sustainable finance.*

BOX 5

## Shifting drivers of growth risks: What's changing?

*by Martin Gächter and Elias Hasler*

**In recent years, predicting growth risks has become a key focus for policymakers**. While forecasting economic growth has always been a priority, the specific emphasis on assessing risks to growth – essentially worst-case scenarios – gained prominence following the seminal work of Adrian, Boyarchenko, and Giannone (2019). Numerous studies indicate that factors such as high financial stress, rapid credit expansion, or rising house prices increase economic growth risks. However, these studies primarily concentrate on the period of the Great Moderation and the Global Financial Crisis. Recent evidence from over 130 years of data suggests that while some of these findings can be confirmed empirically also for a longer observation period – i.e. beyond the context of the Global Financial Crisis – some of them tend to be more specific for certain time periods (Gächter, Hasler and Huber, 2024). Additionally, the relationship between predictors and growth risks can change significantly during times of crisis.

**While financial stress and credit growth appear to influence downside risks consistently since the 20th century, the role of house prices is more complex.** More precisely, rapid house price growth only becomes a significant factor in the latter half of the century, with an unprecedented negative impact before and during the global financial crisis. This highlights that while past crises can inform policymakers about predictors that increase downside risks, they do not necessarily provide a complete picture of current downside risks. State-of-the-art econometric models that are able to capture the evolving relationship between predictors and growth risks are therefore crucial when estimating growth-at-risk. Additionally, even if some predictors, like extreme climate events, have so far not played a major role in shaping aggregated growth risks, the increasing severity of such events due to climate change may suggest they will likely have greater implications for future growth risks. Against this background, policymakers should closely monitor these emerging predictors and incorporate them into their models.

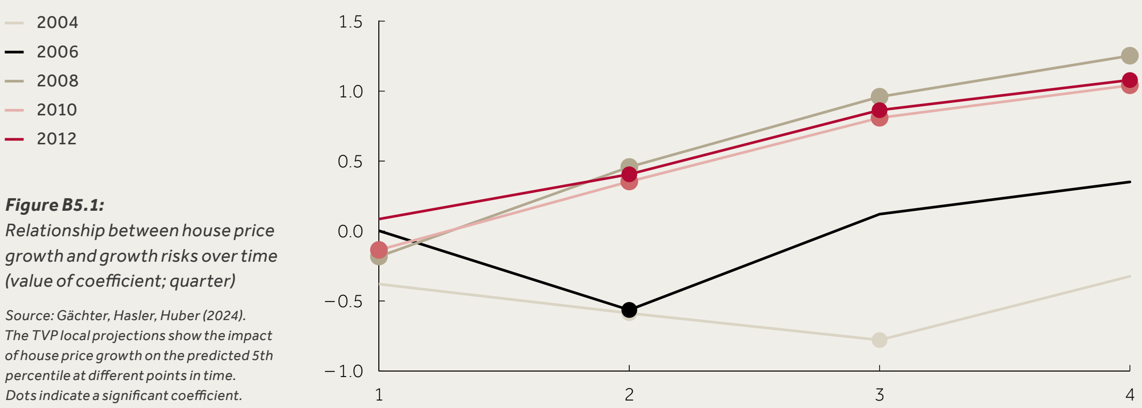



***Figure B5.1:***
*Relationship between house price growth and growth risks over time (value of coefficient; quarter)*

*Source: Gächter, Hasler, Huber (2024). The TVP local projections show the impact of house price growth on the predicted 5th percentile at different points in time. Dots indicate a significant coefficient.*

BOX 5

**The relationship between predictors and downside risks to economic growth can vary significantly during a crisis.** For instance, Figure B5.1 illustrates the relationship between the predicted 5th percentile of economic growth (i.e. the downside risk to economic growth) and house price growth around the global financial crisis. Prior to the crisis, rising house prices contributed to a build-up of vulnerabilities, as shown by the negative relationship between these variables. However, during and after the crisis, this relationship shifted; falling house prices began to increase growth risks, reflected by a positive coefficient. This observation can be linked to the housing wealth effect, which suggests that a decline in house prices can lead to reduced consumption, especially when housing wealth constitutes a substantial portion of households' total wealth – a scenario often seen when house prices have previously risen sharply. Hence, the resulting decline in consumption can exacerbate growth risks.

**Monitoring growth risks requires continuous reassessments.** Recent research emphasises that the relationships between predictors and downside risks to economic growth can change over both long- and short-time horizons. To address this, policymakers should employ flexible models and regularly revise the predictors used within these models. This approach enables more precise forecasting of downside risks and a better grasp of their key drivers. By effectively capturing the dynamic nature of economic relationships, policymakers can more proactively anticipate and mitigate potential threats to growth. While the application of such an approach to the Liechtenstein economy is not feasible in light of limited data availability, the results nevertheless show the necessity to continuously improve risk monitoring frameworks to capture changing drivers of systemic risks over time.

***References***

*Adrian, T., Boyarchenko, N., & Giannone, D. (2019). Vulnerable growth. American Economic Review, 109(4), 1263 – 1289.*

*Gächter, M., Hasler, E., & Huber, F. (2024). A tale of two tails: 130 years of growth-at-risk. Macroeconomic Dynamics, forthcoming.*

## BANKING SECTOR

**The banking sector reported a sustained growth in assets under management (AuM), amid robust capitalisation and high leverage ratios.** Net money inflows remained positive throughout 2023, totalling CHF 31.4 billion (compared to CHF 38.2 billion in 2022). This positive trend, though at a slower pace compared to the previous year, continued into the first two quarters of 2024, with total inflows amounting to CHF 10.6 billion. As a result of these inflows and favourable market developments, AuM reached a new record level of CHF 490 billion (+13.3% y-o-y) in June 2024. Over the same period, total assets remained broadly stable at CHF 105 billion and Common Equity Tier 1 (CET1) capital rose to CHF 8.6 billion (+3.6% y-o-y) in the banking sector on a consolidated level. With a CET1 capital ratio of 20.1% as of Q2 2024 (compared to 20.2% in Q2 2023), Liechtenstein banks remain among the most highly capitalised in the EEA. The upcoming change of risk weights under the Capital Requirements Regulation III (CRR III), which will take effect at the beginning of 2025, is expected to lead to a slight decrease of the CET1 capital ratio of the banking sector. The use of the standardised approach (SA) for calculating credit risk may imply that the banking sector's capitalisation may be underestimated in cross-country comparisons, in particular, relative to banks using the internal ratings-based (IRB) approach[15]. The high capitalisation of the banking sector is also confirmed by the high leverage ratio. In Liechtenstein, all three O-SIIs exceed a leverage ratio of 6.5%, significantly higher than the minimum requirement of 3%.

**Liquidity indicators also highlight the strong funding base of domestic banks.** Liquidity indicators reflect the strong funding base of Liechtenstein banks, with the average liquidity coverage ratio (LCR) amounting to 198% in June 2024. In recent years, the LCR in Liechtenstein has remained relatively stable at a high level. With banks being largely independent from wholesale fundings, the net stable funding ratio (NSFR) of Liechtenstein banks is high, averaging at about 173%, with a range across banks from 109% to 445%. This indicates a stable funding base in ordinary as well as in times of stressed funding markets, reducing the risks of bank runs. The FMA also initiated liquidity stress tests, considering the learnings from the Credit Suisse case (see Section 4.3).

**Profitability indicators lag behind euro area banks as the cost-income ratio (CIR) has further increased.** The CIR, which is structurally high due to the business model of Liechtenstein banks focusing on private banking and wealth management, reached a record high of 78.3% in the second quarter of 2024, up from 74% in the previous year, on a consolidated level. An analysis by KPMG[16] assessed that the CIR for Swiss banks, which have a similar business model, stood at 74% in 2023. The increased CIR of domestic banks is primarily driven by expenses growing at a higher pace (+10.2%) than income (+3.2%). The higher costs have directly impacted earnings before taxes (EBT), which – on a consolidated level – decreased from CHF 450.3 million in Q2 2023 to CHF 378.3 million (–16%) as of Q2 2024. Given that costs have risen more sharply than income, and considering that the national tax system incentivises high equity levels, RoE, based on a four-quarter rolling average, declined from 6.9% in Q2 2023 to 5.6% in Q2 2024. In comparison, the average RoE of euro area banks stood at 10.9% in Q2 2024. Similarly, RoA decreased from 0.70% in the first half of 2023 to 0.54% in the first half of 2024.

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*15 For an in-depth analysis between the two approaches please refer to Box 4, in the 2019 FSR.*

*16 KPMG (2024). Clarity on Swiss Private Banks. June 2024.*

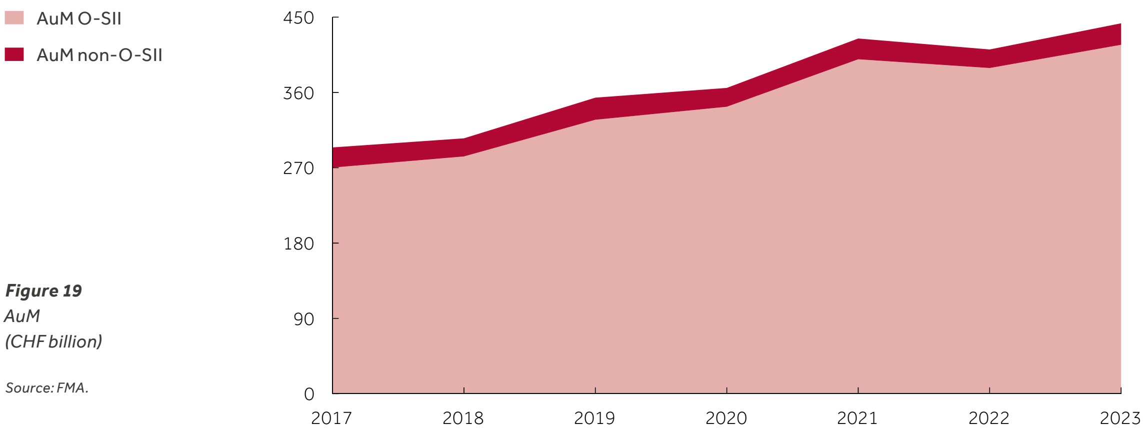



***Figure 19***
*AuM*
*(CHF billion)*

*Source: FMA.*

**Business model risks are materialising as consolidation in the banking sector progresses, with smaller banks experiencing slower growth compared to larger institutions.** During the ongoing consolidation process since 2017, the assets in the Liechtenstein banking sector grew by 28 % on a consolidated basis, while AuM rose by 54 % in the same time period. However, this growth was unevenly distributed across the sector. The three largest banks increased their total assets from CHF 74.7 billion to CHF 95.3 billion (+28 %), whereas the remaining banks saw their balance sheets grow from CHF 7.8 billion to CHF 9.5 billion (+21 %) between 2017 and 2023. The disparity is even more pronounced in AuM growth. The three largest institutions expanded their AuM from CHF 270.2 billion to CHF 417.0 billion (+54 %), while smaller banks experienced a more modest increase, with AuM rising from CHF 24.1 billion to CHF 25.6 billion (+7 %) over the same period, as shown in Figure 19. This divergence in growth has directly impacted the cost and income dynamics within the sector, highlighting the economies of scale that favour larger institutions. Larger banks are able to allocate a smaller proportion of their total costs to non-income-generating activities, while smaller banks must devote a greater share to these areas, limiting their capacity to invest in income-generating activities.

**Profitability risks rise especially for smaller banks, which struggle to find profitable niches amid increasingly complex regulatory requirements and rising costs.** Between 2018 and 2023, the operating expenses of the three largest banks rose by 43 %, while those of smaller banks increased by 40 %. Personnel costs were the primary driver for non-O-SII banks, increasing by over 50 %, compared to a 28 % rise in personnel costs for the three O-SII banks. Material expenses grew by 51% for O-SII banks and 38 % for non-O-SII banks. Despite these rising costs, the larger banks saw a 47 % increase in EBT, while smaller banks recorded a 28 % increase. A breakdown of income and costs drivers, as can be seen in Figure 20, reveals that both O-SII and non-O-SII banks significantly increased profits from financial transactions, by 104 % and 121 %, respectively. In light of rising interest rates and slow pass-through effects, banks experienced growth in profits from interest income, with increases of 54 % for O-SII and 75 % for non-O-SII banks. Notably, only the O-SII banks were able to increase profits in their core private banking segment, with commission and fee-based income growing by 7.7 %, while non-O-SII banks, even with a focus on niche markets, experienced a 15.1 % decline in profits from their core businesses. This underscores the growing pressure on smaller banks to maintain profitability in the face of higher costs, driven, among others, by increasing financial regulations, the market environment and operational risks. The FMA remains vigilant to ensure that the pursuit of margins does not result in excessive risk-taking, especially among smaller banks.

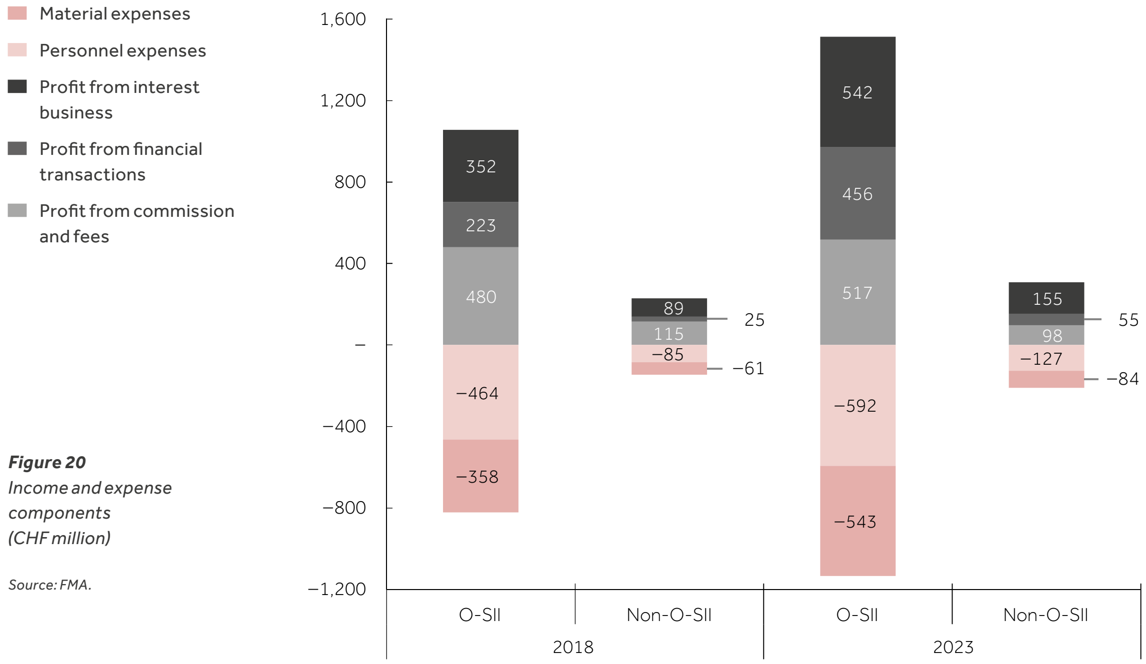



*Figure 20*
*Income and expense components (CHF million)*

*Source: FMA.*

**Operational risks for banks remain elevated, driven by a combination of a quickly changing digital landscape and regulatory pressures.** While the cyber risk landscape remained stable over the last year, outsourcing key operations – especially in IT infrastructure and cloud services – heightens the risk of operational disruptions, as smaller banks are particularly dependent on external partners. The failure or interruption of a critical service provider could lead to severe operational and financial consequences. Compliance risks and financial integrity failures, particularly concerning sanctions and anti-money laundering (AML), also remain prominent. Sanction risks include direct or indirect relationships with sanctioned individuals increasing the potential for reputational damage and legal and operational repercussions. The risk of sanction violations and money laundering increased significantly due to a rapidly changing and increasingly complex regulatory landscape, technological advancements in crime, sophistication of money laundering and sanction evasion schemes as well as multi-jurisdictional operations, making regulatory compliance, especially for smaller banks with limited human and technological resources, more challenging.

## NON-BANK FINANCIAL SECTOR

### Insurance sector

**The challenging macroeconomic environment had varying impacts on the insurance sector over the past year.** Rising interest rates in 2023 had a significant impact on both life and non-life insurers. Insurers, typically facing a negative duration gap on their balance sheets, tend to benefit from rising interest rates, as their liabilities decrease more than their assets. In addition, recent changes in the macroeconomic environment have had a significant impact on insurance products with savings components, particularly boosting the appeal of traditional endowment insurance and unit-linked offerings as interest rates rise. While higher interest rates had a short-term negative impact on interest rate-sensitive investments such as bonds, long-term returns will improve as insurers gain higher returns on their investments, which can improve overall profitability. The rise in inflation also resulted in an increase in technical provisions, as, in particular, non-life insurers had to allocate more capital to cover future claims. This, in turn, increased premiums, as insurances adjusted their pricing models to reflect these new economic realities. To remain profitable, it has become crucial for insurers to establish strong processes that ensure accurate and adequate pricing of products in light of ongoing inflationary pressures and a changing financial landscape. Nonetheless, despite increasing inflation rates and weak economic growth, the non-life insurance sector in Liechtenstein remained resilient, also due to the steady demand for non-life insurance products, particularly in specific business lines, largely unaffected by macroeconomic conditions.


***Figure 21***
*Gross written premiums (billion CHF)*

*Source: FMA.*

**Liechtenstein's insurance sector is highly dependent on foreign markets.** In 2023, 99 % of gross written premiums originated from abroad, with a slight overall increase in premiums from CHF 5.5 billion to CHF 5.7 billion. In total, CHF 3.4 billion stem from the non-life insurance and CHF 2.3 billion from the life insurance sector (Figure 21). Key business lines include unit-linked, fire and other damage to property as well as medical expense insurance. The share of the reinsurance sector has further declined over the past year. Compared to the broader European landscape, as outlined in the EIOPA Financial Stability Report 2024[17], Liechtenstein is more reliant on cross-border premiums.

17 *EIOPA (2024), EIOPA Financial Stability Report. June 2024.*

**Given the heavy reliance of Liechtenstein insurance companies on cross-border activities, there is also a continuous focus on supervising business conduct.** The FMA has made substantial progress in enhancing conduct of business (CoB) supervision over recent years. Through active collaboration and information sharing with EIOPA and other national competent authorities (NCAs), the FMA has bolstered its oversight mechanisms. This ongoing cooperation has further improved supervisory alignment with European standards, reducing risks associated with inadequate CoB supervision. Consequently, the regulatory environment has become more reliable, increasing acceptance and trust among European supervisory peers and reinforcing the reliability of Liechtenstein's insurance sector.

**Profitability of Liechtenstein's insurance sector, as measured by return on equity (RoE), remains below the European average.** In 2023, the profitability of Liechtenstein's insurance sector, as measured by return on equity (RoE), declined from 3.9% to 2.8%, remaining well below the EEA average of 15.5%. This lower RoE is mainly driven by two factors: some insurers are still in a growth phase and have yet to reach profitability, while others are part of larger groups where strategic decisions, such as internal reinsurance, affect their standalone RoE. In these cases, the full profitability picture is not captured by domestic RoE alone, as group-level strategies play a significant role. Additionally, the market's overall profitability is heavily influenced by a few dominant insurers, making broad trends difficult to identify. Notwithstanding the low RoE, investment returns for Liechtenstein's insurers improved in 2023, benefiting from higher yields on investment portfolios.

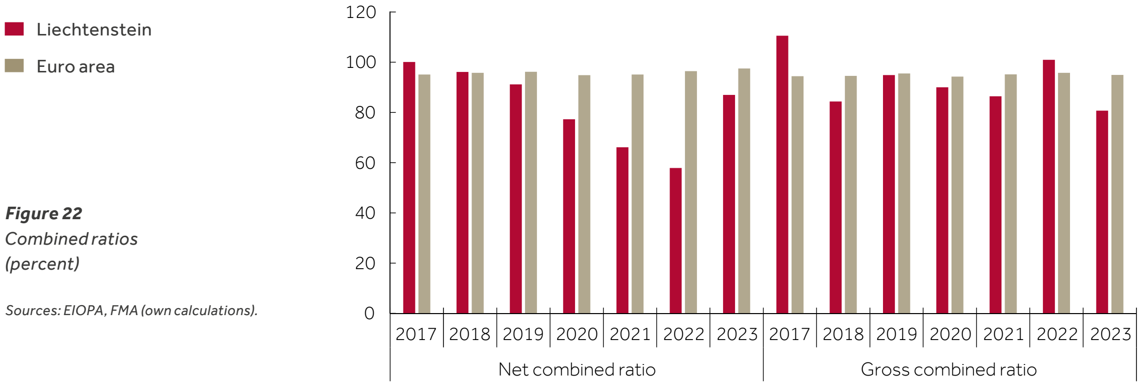



***Figure 22***
*Combined ratios (percent)*

*Sources: EIOPA, FMA (own calculations).*

**When examining underwriting performance through the combined ratio – a key indicator for non-life insurers' profitability – Liechtenstein outperformed the EEA average.** As of end-2023, the combined ratio – calculated as the sum of net claims and expenses incurred divided by net earned premiums – stood at 87% on a net basis (reflecting the insurer's performance after reinsurance) and 81% on a gross basis (before reinsurance). This compares favourably to the EEA averages of 97% and 95%, respectively (Figure 22). The net combined ratio in Liechtenstein rose sharply from 58% in 2022 to 87% in 2023, driven primarily by a strong increase of the claims ratio, which surged from 39% to 64%. The favourable combined ratios reflect strong profitability in Liechtenstein's non-life insurance sector, driven by disciplined underwriting and effective cost management. The figures are significantly influenced by a few large insurers in the highly concentrated market, along with the sector's unique characteristics. These include the specialised business models of captives, which tend to be highly profitable, well-capitalised, and possess substantial equalisation reserves ("Schwankungsrückstellung"), which reduces their overall returns, resulting in low RoE's.

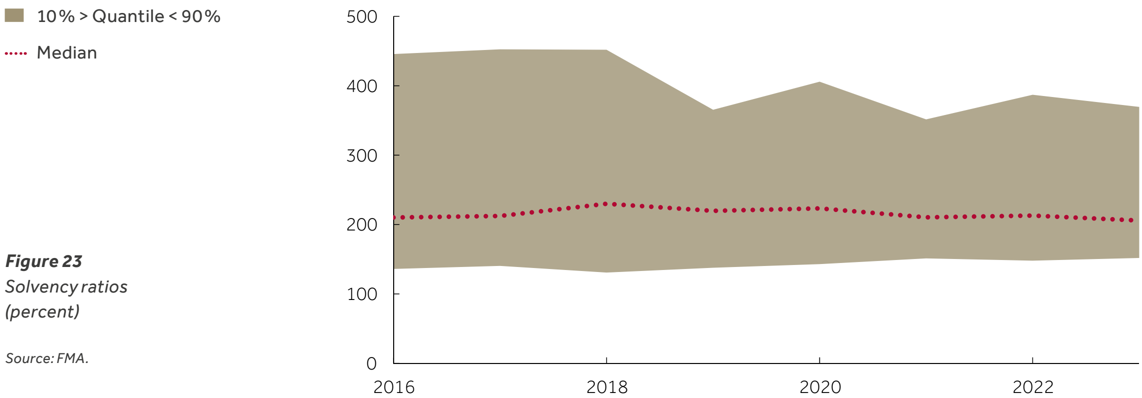



***Figure 23***
*Solvency ratios (percent)*

*Source: FMA.*

**The average solvency ratio of insurance companies in Liechtenstein, remains lower than the EEA average.** As of end-2023, the Liechtenstein insurance sector holds strong capital buffers across all business types, with the median solvency capital requirement (SCR) standing at 205.7%, a slight decrease from 212.9% in 2022 (Figure 23). On the European level, the median SCR ratio for life insurers increased from 232% in 2022 to 243% in 2023, and for composite insurers, it rose from 207% to 225%. Non-life insurers maintained a stable SCR ratio of 215%. While the median SCR ratio for life insurers improved across the EEA, significant variations exist across countries. Liechtenstein's average solvency ratio is slightly lower than that of EEA peers, but still considered satisfactory. It is worth mentioning that well-regarded insurance groups may implement capital efficiency programs that limit the amount of capital allocated to individual insurers, such as those in Liechtenstein. However, these groups have demonstrated their commitment by providing additional capital when needed in the past. Looking ahead, the solvency ratio is expected to remain stable.

## Pension schemes

**Following a challenging 2022, which marked one of the worst annual performances for the public pension system (AHV) since its establishment, 2023 saw a return to positive results.** The return on financial reserves reported a positive performance of +6.2% (−11.5% in 2022). Contributions rose by 11% to CHF 301 million, a notable increase in light of a strong increase in wages after several years of stability, while expenditures grew by 4.6% to CHF 345 million. The structural reform of the public pension system in 2013 reduced the state's contribution, leading to the necessity for the AHV to generate positive investment returns to maintain stable financial reserves. In 2023, this income-expenditure gap (excluding the profit/loss from financial investments, but including the annual ordinary state contribution) amounted to approx. CHF 12.4 million. However, this gap was offset by favourable financial market conditions yielding a positive financial result of CHF 187.7 million, resulting in a total profit of CHF 175.3 million. Sustained positive investment returns are essential to keep the reserves stable.

**The AHV is underpinned by substantial financial reserves, ensuring the stability of the public pension system.** As of the end of 2023, these reserves stood at CHF 3.40 billion, nearly 50% of the country's GDP, providing a solid foundation for the AHV. This robust financial buffer allows the system to cover pension payments for approximately 9.86 years, although this has decreased from 11.35 years in 2021. However, projections indicate that the income-expenditure gap (excluding investment income) is expected to widen over the next 20 years, driven by an increasing ratio of pensioners to employees (i.e. insured individuals). For a more comprehensive analysis, we refer to the annual report published by the AHV administration office.[18]

**In Liechtenstein's second pillar of the pension system, the occupational pension provision, positive investment returns in 2023 led to an increase in coverage ratios.** The significant negative investment returns in 2022 (−12.4%) following a sharp financial market correction had caused a decline in coverage ratios in 2022, defined as the ratio of available assets to liabilities. However, by 2023, the median investment return had recovered to +5.9%, boosting the median coverage ratio from 105% at the end of 2022 to 109% at end-2023. Coverage ratios across different pension schemes ranged from 95% to 116% at the end of 2023.

**Rising interest rates have different effects on pension funds in the short and long run.** For the pension funds sector, the rise in interest rates and decreasing stock prices in 2022 has had a short-term negative impact, as evidenced by the decrease in coverage ratios. However, in the long run, pension funds are expected to benefit from higher returns on fixed-rate instruments, such as bonds, which could ultimately improve the financial health of pension funds. While this long-term outlook offers a positive trajectory for the financial health of pensions, the immediate pressure on coverage ratios may require closer monitoring to prevent any solvency concerns. Additionally, the decline in the number of in-house pension funds has resulted in a concentration of risks within competitive collective pension funds ("Sammelstiftungen"). These concentrated risks require close supervision and monitoring to ensure effective risk management. For a more comprehensive risk assessment of the occupational pension system, please refer to the annual report on pension schemes published by the FMA.[19]

*18 The annual report is available on the AHV website.*

*19 The report is available on the FMA website.*

**To ensure the long-term sustainability of the occupational pension provisions for state employees (SBPVG), the parliament adopted a package of measures for its realignment.** In 2024, the government has presented a report and proposal to parliament regarding the amendment of the law on occupational pension provisions for state employees (SBPVG) to ensure its long-term sustainability. This outlines the measures needed to establish a sustainable solution for the pension benefits for individuals insured with the "Stiftung Personalvorsorge Liechtenstein" (SPL). A key objective of the proposed measures is to eliminate the undesired redistribution from active members to pensioners and to partially compensate for the redistribution that has already occurred. Additional goals include ensuring adequate funding of the pension fund in light of long-term expected investment returns and maintaining the current level of pension benefits. The proposed measures are crucial for eliminating or at least minimising the unwanted redistributions. Against this background, the parliament took a final decision on a policy mix on how to realign the public pension fund in September 2024. The parliament's decision will be put to a public referendum in December 2024.

**At the European level, EIOPA considers the pensions gap a medium- to long-term risk to financial stability; however, it is of lesser significance in Liechtenstein.** This risk arises from declining real wages and the erosion of nominal assets, such as bonds, due to increased inflation rates in recent years. A similar, albeit minor, trend of an increasing pensions gap is also emerging in Liechtenstein. This is largely attributed to decreasing conversion rates ("Umwandlungssatz") and lower asset returns, which result in reduced annuities for retirees. The government is already planning to address these developments, among other issues, as part of its broader strategy for the elderly ("Altersstrategie[20]"), by maintaining the quality of life for all residents into old age, in light of demographic and societal changes.

20 *Only available in German.*

## Funds sector

**The investment fund sector has grown strongly in recent years, mainly driven by Alternative Investment Funds (AIFs).** AIFs have continued their upward trajectory, expanding from CHF 37.4 billion in 2022 to CHF 69.8 billion in 2023, and further increasing to CHF 80.9 billion by mid-2024. This growth is primarily driven by the launch of new funds, particularly evident in the significant jump from 2022 to 2023. In contrast, UCITS (Undertakings for Collective Investments in Transferable Securities) and IU ("Investmentunternehmen"), a national fund regime, have faced stagnation, with assets declining to CHF 29.9 billion and CHF 0.4 billion, respectively, in 2023, a trend that has persisted into 2024. These developments indicate a shift in investor preference towards AIFs, while UCITS continue to stagnate. Despite this mixed performance, the total number of sub-funds saw only a modest decline of 11, reaching 836 by the end of 2023, before rebounding to 845 in 2024.

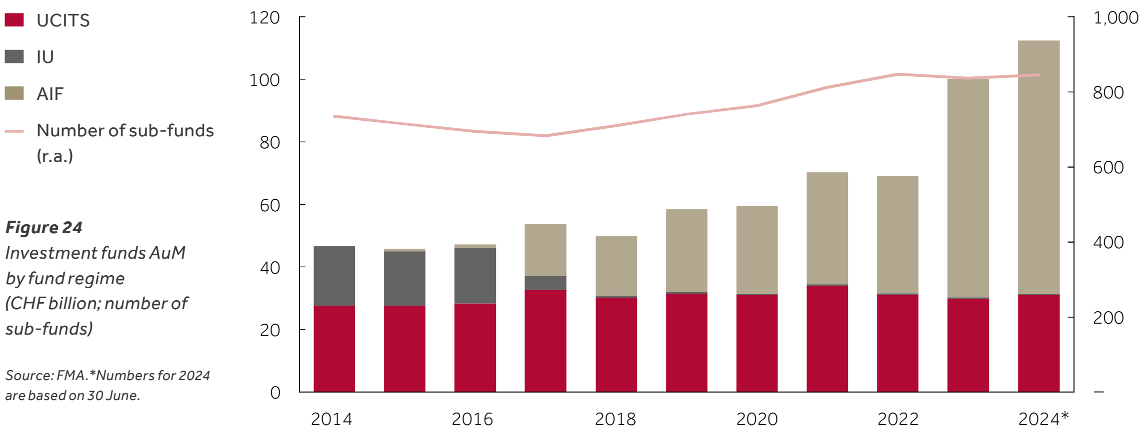



***Figure 24***
*Investment funds AuM by fund regime (CHF billion; number of sub-funds)*

*Source: FMA. *Numbers for 2024 are based on 30 June.*

**In recent years, EU policymakers have increasingly focused on AIFs as a potential source of financial instability.** The structural vulnerabilities of AIFs primarily stem from liquidity mismatches and the use of leverage. Liquidity mismatches can force funds to sell assets when faced with large redemptions during periods of market stress, leading to falling prices and deteriorating liquidity. Leverage can exacerbate selling pressure after market declines through deleveraging, forced asset sales to meet covenants, or margin calls etc. Against this background, the ESRB published an "issues note[21]" outlining policy options to mitigate risks associated with investment funds that invest in illiquid assets or assets that might become illiquid during stress, particularly those focusing on corporate debt and real estate. The ESRB also highlights several existing policy tools within the regulatory framework to enhance the resilience of investment funds and support financial stability.

21 *ESRB (2023). Issues note on policy options to address risks in corporate debt and real estate investment funds from a financial stability perspective. September 2023.*

**Liechtenstein's AIFs are relatively low-risk.** Based on the net asset value (NAV)[22], 62% of Liechtenstein's AIFs are fund-of-funds, 32% are invested in funds, where the predominant strategy is not listed by the European Securities and Markets Authority (ESMA), 2.5% are real estate funds, 2.2% are private equity funds, and 0.9% are hedge funds. Furthermore, the average share of less liquid assets, such as corporate debt, is only 4.3% relative to AuM per fund as calculated according to the ESMA Guidelines on Article 25[23]. Hence, Liechtenstein's AIF sector has minimal exposure to the types of funds most concerning from a financial stability perspective, such as corporate debt and real estate funds.

**Key indicators, such as the liquidity profile and leverage, do not indicate any significant risks to domestic financial stability.** While some funds types, due to their characteristics, are more likely to pose financial stability concerns, liquidity mismatch and high leverage are potential risks independent of the type of fund. Figure 25 shows the liquidity profile multiplied by the NAV summed up over all AIFs. A positive value indicates that more assets can be liquidated in the given time frame than investors can pull out of the fund, while a negative value signals the opposite. The data show that overall there is no liquidity mismatch in the domestic AIF sector, indicating no significant risks to domestic financial stability.

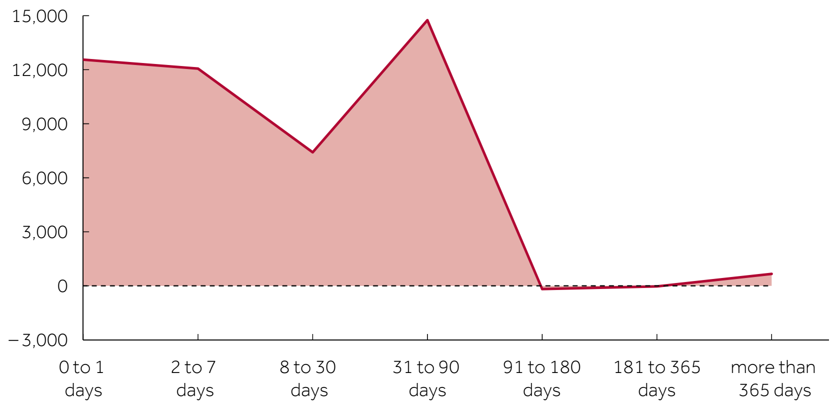



***Figure 25***
*Liquidity Profile multiplied by the NAV*
*(EUR million)*

*Source: FMA.*

**One of the key challenges in monitoring the risks of the AIF sector is the absence of a comprehensive "look-through" approach, particularly concerning fund-of-funds structures.** Although reporting standards for AIFs have seen substantial improvements over the past decade, notably through the implementation of the Alternative Investment Fund Managers Directive (AIFMD) and its associated reporting obligations, gaps persist. A primary concern is the limited transparency resulting from the lack of a full "look-through" approach. Fund-of-funds are currently required to disclose only the investment strategy of the underlying funds in which they invest, without providing further detailed information about the specific assets held by these underlying funds. Consequently, it is impossible to ascertain the actual underlying exposures. Given that a significant portion of Liechtenstein's AIF market consists of fund-of-funds, there is a potential risk that the underlying investments could fall into the higher-risk categories as identified by the ESRB.

*22 Feeder funds are not considered.*

*23 ESMA (2021). Guidelines on Article 25 of Directive 2011/61/EU, ESMA34-32-701, June 2021.*

Hence the risks extend to the fund-of-funds themselves, potentially posing broader risks to financial stability.

## Fiduciary sector

**The fiduciary sector continues to play an important, albeit declining role in Liechtenstein's financial landscape.** The number of Trust and Company Service Providers (TCSPs) continued to decline in 2023 to a total number of 554. This decrease is likely due to the increase in regulatory requirements and the downward trend of trusts and foundations.

**Despite the revision of the Professional Trustees Act (TrHG) in 2020, extending the FMA's prudential supervisory duties, there is still room for selective adjustments in certain areas.** The revision of the TrHG has led to the fiduciary sector now also being largely subject to prudential supervision by the FMA. Among many other elements, legal requirements for governance (corporate management and control), internal control system (ICS), risk management, and a clear separation of internal functions have been introduced. Furthermore, a prohibition of self-dealings, a duty to strictly separate client funds and own funds, including detailed disclosure and documentation requirements, as well as rules to avoid conflicts of interest have been put in place. The FMA has been tasked with supervising all these elements, which used to be subject to self-regulation before the revision of the TrHG in 2020. Another central pillar of the FMA's prudential supervisory duties is the review of financial solidity (i.e. solvency and ability to continue as a going concern) and the introduction of an early warning system. All fiduciary firms and individual fiduciaries are subject to an annual supervisory and financial audit by external auditors authorised by the FMA. While the FMA now receives significantly more supervisory information than prior to the revision of the law, the reporting obligations in the fiduciary sector still lag behind the requirements in other parts of the financial sector. Against this background, selective regulatory adjustments, in particular related to further strengthening the fit & proper requirements, extending the FMA's power to intervene and improving data availability in the sector would be helpful to further reinforce transparency and ensure long-term stability in the sector.

**Recent cases of fiduciary companies and individual fiduciaries licenced under the TrHG listed on the US Treasury's Office of Foreign Assets Control (OFAC) sanctions list have again called to mind the inherent reputational risks in the fiduciary sector.** Although fiduciary companies and trustees must comply with stringent AML and sanctions compliance requirements, the services provided in this sector still carry significant reputational risks (see chapter 3.1 for more details on the associated cross-sectoral risks). Possible regulatory amendments are currently being discussed in this context.

## Token economy

**Registrations under Liechtenstein's Tokens and Trusted Technologies Act (TVTG) have seen steady growth, reflecting the sector's expanding role in the financial market.** Over the past year, 70 companies have applied, with currently 26 registered for 61 services. These entities include both traditional financial intermediaries, such as banks, and newer players like cryptocurrency exchanges. TVTG oversight primarily targets anti-money laundering and event-driven supervision. The upcoming Markets in Crypto-Assets Regulation (MiCAR) will bring broader oversight to some of these service providers across the Single Market, while the OECD's Crypto-Asset Reporting Framework (CARF) seeks to uphold global tax transparency amid the crypto market's rapid expansion.

**Liechtenstein's token economy is now characterised by increasing professionalisation and a moderate risk appetite.** This marks a significant shift from the initial phase where excessive risk-taking was prevalent among start-ups. While information and communication technology (ICT) risks have remained stable, challenges persist, particularly regarding the availability of skilled labour and IT service providers. The introduction of MiCAR is expected to harmonise the regulatory framework across the EEA and increase demand for skilled labour in the fintech sector, potentially intensifying infrastructure constraints. MiCAR will coexist with Liechtenstein's existing Blockchain Act (TVTG), which has already contributed to market stabilisation and the establishment of several small players. Although MiCAR's higher regulatory barriers may temporarily contract the Liechtenstein crypto market, it is anticipated to foster further market maturation and continued diversification within the financial sector.

# POLICY DEVELOPMENTS

## RECENT MACROPRUDENTIAL POLICY DEVELOPMENTS

**Liechtenstein's macroprudential authorities have continued strengthening their policy mix by implementing various measures to reduce systemic risks, enhance the resilience of the banking sector, and address vulnerabilities in the real estate market.** This comprehensive policy framework includes capital-based, lender-based, and borrower-based measures, each designed to mitigate specific risks and improve the overall risk-bearing capacity of the domestic financial sector. Capital-based measures focus on bolstering the resilience of the banking sector, aiming to reduce the likelihood of systemic risks materialising. Borrower-based measures specifically target the borrowers of real estate loans, addressing the accumulation of systemic risks in this area. Meanwhile, lender-based measures require banks to apply higher risk weights to riskier residential real estate exposures, further reinforcing the banking sector's ability to withstand potential shocks. Collectively, these measures are designed to safeguard the stability and robustness of Liechtenstein's financial system.

### Capital-based measures

**Since the implementation of the CRD V package in 2021, there have been no adjustments in the macroprudential capital buffer framework for the banking sector in Liechtenstein.** In 2021, macroprudential capital-based measures underwent a comprehensive re-evaluation and recalibration. During this process, the Financial Stability Council (FSC) decided to revise both the systemic risk buffer and the capital buffer for other systemically important institutions (O-SIIs), while maintaining the existing ratio of 0% for the countercyclical capital buffer (CCyB). As of October 2024, the domestic banking sector's capital and buffer requirements apply in accordance with Figure 26.

| Capital and buffer requirements as of October 2024 | | |
|---|---|---|
| Sectoral systemic risk buffer* | 1.0% | |
| O-SII buffer | 2.0% | |
| Countercyclical capital buffer | 0% ** | |
| Capital conservation buffer | 2.5% | |
| Pillar II requirements | X% | |
| Supplementary capital (Tier 2) | 2.0% | Pillar I |
| Additional Tier 1 (AT1) | 1.5% | Pillar I |
| Common Equity Tier 1 (CET1) | 4.5% | Pillar I |

***Figure 26***
*Capital and buffer requirements for Liechtenstein's banks (in percent of risk-weighted assets)*

** applies to loans secured by mortgages on real estate in Liechtenstein*
*** for domestic exposures*

*Source: FMA.*

**In September 2024, the Financial Stability Council (FSC) reaffirmed its countercyclical capital buffer (CCyB) decision for domestic exposures at 0 % of risk-weighted assets.** The CCyB functions as a capital reserve, designed to absorb potential losses during periods of financial stress, particularly when there is heightened credit expansion by financial institutions. The CCyB decision is based on the credit gap, which reflects the deviation of the private sector's debt-to-GDP ratio from its long-term trend (Figure 27). Currently, Liechtenstein's credit gap is negative, indicating that, under the rules-based approach, there is no need for an increase in the buffer rate, as there is no sign of excessive credit growth in Liechtenstein. In addition, the alternative credit gap, covering mortgage lending of Liechtenstein banks for property in Liechtenstein and Switzerland, as well as other indicators show no signs of excessive credit growth or increasing cyclical imbalances. Consequently, the FSC has determined that maintaining the CCyB at 0 % is appropriate. The FSC will continue to regularly analyse and monitor cyclical risks in the financial sector and will recommend an increase in the CCyB if necessary.


***Figure 27***
*Credit gaps in Liechtenstein (percentage points)*

*Source: FMA.*

**The FSC also recommended in June 2024 that the buffer for other systemically important institutions (O-SIIs) be maintained at their current levels of 2 % for the three largest banks in Liechtenstein.** The O-SII buffer is designed to reduce the likelihood of failure of O-SIIs by requiring them to hold additional Common Equity Tier 1 (CET1) capital. This measure helps offset the implicit support these institutions may receive from the government in a crisis while also enhancing market confidence. By increasing the loss-absorption capacity of these banks, the buffer strengthens the overall stability of the financial system. The identification of O-SIIs is conducted annually through a scoring process based on the European Banking Authority (EBA) guidelines (EBA / GL / 2014 / 10). This process evaluates ten indicators across four key criteria: size, importance, complexity / cross-border activity, and interconnectedness. In Liechtenstein, the three largest banks have been identified as O-SIIs due to their systemic relevance to the domestic banking sector, meeting all four criteria. The concentration of the banking sector around these three institutions is highlighted by their combined score of 9,374 out of a possible 10,000 points. Each of these banks individually scored over 1,000 points, far exceeding the O-SII identification threshold of 350 points. Based on this assessment, the FSC recommended maintaining the O-SII buffer rate at 2% of the total risk exposure amount, applicable on both a consolidated and individual basis for all of the three O-SIIs.

**The systemic risk buffer was re-evaluated in 2023, with the next recalibration scheduled for 2025.** The SyRB is designed to address systemic risks not covered by the CCyB or the O-SII buffer, aiming to prevent or mitigate potential adverse impacts on the financial system and the real economy. For Liechtenstein banks, the sectoral SyRB is set at 1% of risk-weighted exposures for loans secured by domestic mortgages. This measure, effective since spring 2022, enhances the resilience of the banking sector against real estate risks. It applies at both consolidated and individual levels to prevent arbitrage and ensure fair competition.

## Instruments targeting the real estate sector

**The high level of household indebtedness makes the real estate sector vulnerable to unexpected macroeconomic shocks.** If interest rates rise, unemployment increases, or household incomes decline, a growing number of households may struggle to service their debt. Additionally, a sharp rise in loan defaults could trigger negative second-round effects, potentially leading to a decrease in property prices due to increased foreclosures. The FMA provides a comprehensive analysis of the residential real estate sector in Liechtenstein in its real estate and mortgage report[24], which assesses the risks to domestic financial stability (refer to Chapter 2.4 for recent developments in the real estate sector). In 2021, the European Systemic Risk Board (ESRB) conducted a Europe-wide systematic and forward-looking assessment of medium-term risks in the residential real estate sector, issuing a risk warning to Liechtenstein (ESRB/2021/14)[25] due to the high household indebtedness. According to the ESRB, the main vulnerability from a macroprudential perspective is the high and increasing household indebtedness in the absence of income-related borrower-based measures to contain the further accumulation of risks in the residential real estate sector. This risk assessment by the ESRB confirms earlier analyses by the FMA.

**In early 2022, a working group was established to develop measures to address the identified risks.** This working group comprised representatives from the FMA, the Liechtenstein Bankers Association (LBV), and the O-SIIs. Based on the group's findings, the FSC recommended that the FMA and the government implement measures in three specific areas: (1) improve data availability in the real estate sector by further developing a nationwide residential real estate and rental price index and by adjusting the existing FMA data collection to evaluate the effectiveness and efficiency of the adapted borrower-based measures; (2) adjust existing borrower-based measures to address the risks of high household indebtedness by providing a concrete quantitative definition for loan affordability and an additional amortisation requirement; and (3) increase risk awareness among both lenders and borrowers by fostering open and transparent communication, by bolstering training programs within banks and by conducting more comprehensive consultations with borrowers[26]. This joint effort aimed to ensure that the risks associated with high household

*24 The report was published by the FMA in October 2021 (available in German only): «Immobilien- und Hypothekarrisiken in Liechtenstein: Risiken aus Sicht der Finanzstabilität». A summary of the main findings of the report can be found in Box 4 of the Financial Stability Report 2021.*

*25 ESRB warning on medium-term vulnerabilities in the residential real estate sector of Liechtenstein (ESRB/2021/14).*

*26 FSC recommendation from 26 June 2023: Recommendation for addressing risks in the residential real estate sector and mortgage market (AFMS/2023/2).*

debt are effectively addressed without imposing unnecessary restrictions on access to the mortgage market for borrowers. In addition, the FSC's recommended measures serve as a policy response to the risk warning issued by the ESRB.

**In response to the FSC recommendation, the FMA has issued specific supervisory requirements for sustainable residential real estate financing.**[27] These measures aim to mitigate the systemic risks associated with high household debt in Liechtenstein. The FMA communication provides not only detailed information on the scope of the adjusted borrower-based measures but also on the new data collection, definitions, and applicability of the communication. The revised banking regulation, which stipulates an adjustment of the amortisation period for the second mortgage (i.e. the amount of the mortgage that exceeds a loan-to-value ratio of 66 2/3%) from 20 years to 15 years, entered into force on 1 November 2023. The FMA communication, which, among other things, governs harmonised standards concerning affordability, generally came into effect on 1 November 2023, with transition periods extending until 1 July, 2024. In this context, banks will first report the new data to the FMA from 1 July 2024 onwards, with the first reference date of September 30, 2024. The FMA will closely monitor the implementation of these measures by the banks using the new data. If the measures are not adequately implemented or if the desired outcomes are not achieved, the FMA will propose additional measures to the FSC as part of its ongoing risk monitoring activities.

**Liechtenstein is currently recalibrating another real estate-related measure concerning the risk weights applied to exposures secured by immovable property.** Under the current Capital Requirements Regulation (CRR II), the risk weights for RRE exposures in Liechtenstein, treated under the standardised approach (SA), are more stringent for domestic banks compared to the standard CRR framework. Specifically, for mortgages with a loan-to-value (LTV) ratio between 66 2/3% and 80%, risk weights in Liechtenstein are set at 50%, higher than the standard 35%. Mortgages with an LTV ratio exceeding 80% remain subject to the risk weightings prescribed under the standard CRR framework.

**Under the new CRR III framework, expected to become applicable on 1 January 2025, countries may opt to further increase risk weights beyond the standard framework.** The standard CRR III framework prescribes a 20% risk weight for exposures secured by residential property as per Article 125(1) up to 55% of the property's value. The remaining portion of the property will be treated as a risk position against a counterparty not secured by real estate. For RRE exposures under Art. 125(2), risk weights are assigned based on the corresponding exposure-to-value (ETV) buckets. Risk weights for CRE exposures, as outlined in Article 126, are similarly related to the property value, and will, in general, increase. If competent authorities in a country consider that the inadequacy of the risk weights could adversely affect current or future financial stability, it may increase risk weights and/or lower the percentages of the relevant property value according to Article 124 of the CRR. The FSC has recently recommended that risk weights for mortgage loans should not be further tightened, as the available data suggests that the risk weights

27 *The "triggers" and the respective scope are outlined in FMA Communication 2023/1.*

for such exposures are already expected to increase under the CRR III framework. Consequently, maintaining the current stance is deemed sufficient without further adjustment. However, the complete impact of these changes will only become evident next year and will be considered in the re-calibration of the systemic risk buffer accordingly.

## INTERNATIONAL COOPERATION

**Liechtenstein's authorities have continuously implemented the recommendations and warnings from the ESRB.** Since the FSC was established in 2019, the country has continued its ambitious efforts in addressing not only the relevant ESRB recommendations, which were issued after Liechtenstein became an ESRB member, but also those issued before. In the past year, Liechtenstein authorities have focused on various areas, including the real estate sector, macroprudential measures and their reciprocity, the calibration of the CCyB, and setting of CCyB rates for exposures to material third countries among others. In January 2023, the ESRB also issued a recommendation addressing vulnerabilities in the commercial real estate (CRE) sector within the EEA[28], underscoring the sector's systemic importance. In response, the FMA continued to improve its risk monitoring framework, promote sound financing practices, and strengthen the resilience of financial institutions. In this context, the FMA also engaged with the O-SIIs in 2024 to discuss their lending practices, risks and developments within the CRE sector. Liechtenstein authorities have effectively implemented the relevant ESRB recommendations and warnings, maintaining close collaboration with the ESRB Secretariat, aiming to protect the country's real economy and financial sector from potential risks.

**The accession to the International Monetary Fund (IMF) is a crucial step to safeguard financial stability in the long-run.** As Liechtenstein lacks a central bank, the country has no formal lender of last resort, which means that local banks do not have access to emergency liquidity assistance (ELA) from the Swiss National Bank (SNB) during a crisis, as they are not deemed systemically important to the Swiss franc currency area. Membership in the IMF provides Liechtenstein with access to liquidity in times of balance of payments needs, making this membership a crucial step towards maintaining financial stability. Additionally, IMF membership will support institutional capacity building, improve data availability and increase transparency and reputation among international investors.

**The FMA strongly supported the government's proposal and was actively involved in the government's preparatory efforts during the IMF accession process.** In September 2022, the Liechtenstein Parliament endorsed the start of negotiations for IMF membership, marking a significant milestone in the process. In May 2023, the government officially applied for membership. Subsequently, extensive efforts have been made to meet IMF membership criteria, including providing necessary data and information for calculating Liechtenstein's IMF quota. In late 2023, an IMF mission visited Liechtenstein to gather information and engage with local stakeholders. This process led to a unanimous decision by the IMF Executive Board in March 2024 to offer membership to Liechtenstein, setting the terms and conditions for Liechtenstein's membership, including a quota of 100 million Special Drawing Rights (SDR), approximately CHF 120 million. In May 2024, the Parliament endorsed Liechtenstein's membership in the IMF, recognising the significant benefits it offers. Beyond enhancing financial stability,

28 *ESRB (2022), 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). December 2022.*

IMF membership increases reputation, provide access to technical assistance, and deliver financial advantages, all at manageable costs, making it a strategic move for Liechtenstein's economy. A referendum was subsequently initiated against this decision, but on September 22, 2024, the public vote confirmed Liechtenstein's membership in the IMF.

## RECENT DEVELOPMENTS IN MICROPRUDENTIAL SUPERVISION AND POLICY

**The FMA has implemented additional measures to enhance the stress testing framework.** Over recent years, the FMA has increasingly used stress tests to evaluate how well banks can withstand financial and economic shocks, supporting supervisors in identifying and addressing vulnerabilities. Initially, stress tests were conducted only for O-SIIs in Liechtenstein, but last year, the scope was extended to include the entire banking sector, with assessments carried out using various scenarios. The baseline scenario offers a plausible projection of future economic developments (based on the ESRB stress scenario), while other scenarios are designed to simulate adverse conditions, such as a collapse in financial markets or a reputational crisis specific to Liechtenstein and its banking sector. In 2023, the FMA refined its supervisory stress test by rebuilding and refining it. The process now also involves quantifying capital adequacy in terms of Pillar 2 Guidance (P2G) via a top-down approach and establishing an individual dialogue between the FMA and banks to improve overall quality and efficiency. The outcomes of these stress tests indicate that the banking sector remains robust, with stress scenarios needing to be exceptionally severe to significantly impact banks' capital indicators. Moreover, the FMA has initiated a new project for liquidity stress tests, with the conceptual phase underway. The insights gained from these stress tests are of high importance concerning the severity, probability of occurrence, and mitigation of a "bank run" scenario.

**The FMA conducts annual risk assessments for each bank as part of the Supervisory Review and Evaluation Process (SREP).** This process integrates findings from various supervisory activities to provide a comprehensive review of each institution. The SREP evaluates banks' business models, internal governance, and risks related to capital and liquidity. While all domestic banks, e-money firms, and payment providers are reviewed, the O-SIIs in Liechtenstein receive particular attention due to their size, extensive client bases, and more complex operations. Based on the SREP results, the FMA also requires specific banks to hold additional capital under Pillar 2 to address their unique risks (Pillar 2 requirement, P2R), which include those related to cyber threats, anti-money laundering (AML), counter-financing of terrorism (CFT), and environmental, social, and governance (ESG) factors. These measures are intended to enhance the capital, solvency, and liquidity of individual institutions.

## RECENT REGULATORY DEVELOPMENTS

**The national legal framework for banks underwent a complete revision to align it more closely with EEA legal structures.** The current Liechtenstein Banking Act (Bankengesetz, BankG) traces its regulatory structure and system back to the foundational enactment of 1992 and the accompanying fundamental adoption of the Swiss Banking Act. Since Liechtenstein's accession to the EEA, the current BankG has undergone significant changes, leading to a complex and heterogeneous law. A complete revision of the Liechtenstein BankG was therefore discussed and adopted in Parliament to align the national law with the EEA structure, separating prudential supervision for banks (CRR / CRD) and investment firms (IFD / IFR) and distinguishing it from conduct supervision (MiFID II / MiFIR). This revision aims to disentangle the current BankG into separate, coherent laws, focusing solely on prudential supervision and conduct supervision, and to align the concepts and terminology with EEA standards to enhance clarity and legal certainty for all stakeholders.

**The review of EU banking rules, known as CRR III[29] / CRD VI[30] or the "banking package" is also currently in the process of being implemented in Liechtenstein.** The EEA has already implemented the majority of the Basel III global standards from 2017, enhancing the resilience of its banking sector, increasing financial stability, and providing a foundation for stable economic funding. However, some final elements of Basel III still needed implementation in the EEA. This gap is addressed by the Commission's banking rules review proposed in October 2021 (CRR III / CRD VI or the "banking package")[31]. In this context, the CRR III applies directly and will start applying in the EEA – including Liechtenstein – as of 1 January 2025, such that Liechtenstein's banking sector will meet the international Basel III standards and be regulated on par with the rest of the European internal market ("level playing field"). On the contrary, the provision included in the CRD will need to be transposed by Member States into national law before they start applying. The process of implementing CRD VI into Liechtenstein law will start once it is clear when CRD VI will be incorporated into the EEA Agreement.

## BANK RESOLUTION

**In the resolution planning process, the Resolution Authority carefully assesses the "resolvability" of banking groups.** The meaning of resolvability largely depends on the chosen resolution strategy. Since 2022, the Resolution Authority in Liechtenstein has been working with individual banks to develop tailored resolution plans. Due to the structural differences among these institutions, their resolution strategies differ accordingly. Some resolution plans provide for bail-in approaches, while others may include transfer strategies.

**However, for all resolution approaches the availability of adequate data is crucial.** If a bank is failing, the value of its assets and liabilities must quickly be clear. In such a situation, the Resolution Authority (or an independent valuer) shall value the bank's balance sheet at short notice. The valuation serves in particular to assess whether the conditions for resolution are met and what measures need to be taken. Most prominent before applying the bail-in tool, the Resolution Authority has to determine to which extent the liabilities should be written down and / or converted into new shares. On the other hand, the Resolution Author-

*29 Capital Requirements Regulation (Regulation No (EU) 2013 / 575)*

*30 Capital Requirements Directive (Directive 2013 / 36 / EU)*

*31 European Commission (2023), Latest updates on the banking package* ity shall find a "fair" purchase price for a sale of business transaction. Such decisions are only possible on the basis of a state-of-the-art valued balance sheet.

**Therefore, banks shall have an adequate "Management Information System" (MIS) in place.** Such a system may increase its resolvability to a significant extent. Generally, in a crisis situation a bank must be able to quickly deliver relevant data. This means that banks shall maintain appropriate capabilities to provide comprehensive information in a standardised, timely and high-quality manner – even under rapidly changing conditions.

**To facilitate a bank's implementation of an effective MIS, the Resolution Authority established a supervisory guidance concerning data provision for resolution purposes.** The guidance specifies the capabilities required to demonstrate the effectiveness of the underlying MIS. According to the guidance, certain data shall be delivered within 24 or 72 hours of a request by the Resolution Authority. For example, a detailed overview on the regulatory capital or internal reports on the financial development (P&L, balance sheet) must be available at short notice (within 24 hours). In Liechtenstein, the systemically important banks are in the process of maintaining systems and processes to comply with these requirements.

**Quick and robust data provisioning in a crisis is a key element of resolvability.** The Resolution Authority assesses the adequacy of the MIS in the course of the annual resolution planning. In this regard, the authority is working under the principle of proportionality considering different business models, structural challenges and resolution strategies, including both bail-in and transfer approaches, among the banking groups established in Liechtenstein. Furthermore, the MIS will be subject to a mandatory review by independent external auditors. In the near future, the Resolution Authority also aims to test the MIS during crisis simulation exercises. With these activities, the Resolution Authority ensures the availability of traceable data at any time. This supports resolvability of banking groups and financial stability in the Liechtenstein financial market.

# ANNEX: STRUCTURAL BACKGROUND

## LIECHTENSTEIN'S ECONOMY

**Liechtenstein, a small yet highly specialised economy, exhibits unique structural characteristics that differentiate it from other small economies and regional financial centres.** The economy is marked by its robust export-oriented industrial and manufacturing base, high innovation levels, a relatively large financial sector and a unique legal and economic relationship with both Switzerland and the European Union, through its membership in the European Economic Area (EEA).

**A defining feature of Liechtenstein's economy is its strong industrial sector.** As of 2021, this sector contributed approximately 42 % to the country's Gross Domestic Product (GDP), nearly twice the share of the financial services sector, which stands at about 21 % even when including complementary services usually not counted as financial services such as lawyers, auditors and tax advisors. The presence of high-tech manufacturing firms and niche players in global markets underscores the industrial sector's importance. Companies in this sector benefit from substantial investments in research and development (R&D), which drive innovation and economic growth.

**Liechtenstein's economy is characterised by high levels of innovation, driven by substantial private sector investment in R&D.** In 2019, R&D spending, predominantly driven by industrial companies, amounted to 375 million CHF, representing about 6 % of the country's GDP. This investment places Liechtenstein ahead of all OECD countries regarding R&D expenditure relative to GDP. The result is a highly innovative economy, with the number of patent applications per capita far exceeding those in countries like Switzerland and Sweden.

**Liechtenstein's labour market is also unique, with total employment exceeding the number of inhabitants.** In 2023, the total population stood at 40,023, while the number of employed people was 43,060, with a significant proportion being cross-border commuters from Switzerland and Austria. This dynamic is indicative of the country's strong economic activity and its attractiveness as an employment hub in the region.

**The small size of Liechtenstein's economy contributes to high volatility in GDP growth.** Single transactions by large firms can significantly impact macroeconomic indicators, making the economy susceptible to abrupt changes in economic performance. Data availability is a challenge, with many economic indicators either unavailable or published with considerable delay. Despite this, Liechtenstein maintains a range of statistical indicators that help policymakers monitor economic developments and respond accordingly.

**Liechtenstein benefits from a unique legal and economic relationship with Switzerland and the EEA.** The customs union with Switzerland, established in the 1920s, and the adoption of the Swiss franc in 1924, provide economic stability and integration with the Swiss market. Membership in the EEA since 1995 allows Liechtenstein full access to European's Single Market, aligning its regulatory framework with EU standards. This integration is vital for the country's economic success, facilitating trade and economic collaboration with both Switzerland and the EU, as well as with all countries through which Liechtenstein has free trade agreements through its membership in the European Free Trade Area (EFTA).

## LIECHTENSTEIN'S FINANCIAL SECTOR

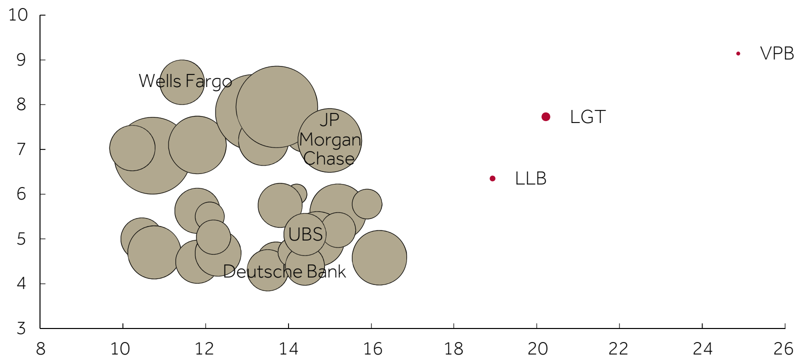
### Banking sector

**The banking sector, characterised by its high level of capitalisation and liquidity, plays a significant role in Liechtenstein's financial system.** The total assets of Liechtenstein's predominantly domestically owned banking sector stand above CHF 100 billion on a consolidated level, which is roughly 15 times the country's GDP. This substantial size, coupled with a high concentration – where three O-SIIs account for over 90 % of total assets – highlights the critical need for robust macroprudential measures to manage systemic risks effectively.

**With capital ratios well above regulatory minimum requirements, Liechtenstein's banks are well-positioned to absorb economic and financial shocks.** This robust capitalisation, along with low non-performing loan (NPL) ratios, reflects prudent risk management and contributes to the sector's overall resilience. Since domestic banks apply the standardised approach (SA) to measure credit risks, the ratio of risk-weighted assets (RWA) to total assets is relatively high, in comparison to banks using the internal ratings-based (IRB) approach. The application of the SA implies that the banking sector's capitalisation may be underestimated in cross-country comparisons, particularly relative to banks using the IRB approach[31]. Consequently, the difference between Liechtenstein banks and those in the EU and Switzerland is even more pronounced when comparing leverage ratios, as can be seen in Figure 28.

*Figure 28*
*Banks' size and capitalisation (y-axis: Leverage ratio; x-axis: CET1 ratio; Size of datapoint: total assets in CHF)*

*Sources: Bloomberg, banks' annual reports, FMA, Eurostat. Sample: Besides Liechtenstein (where all three O-SIIs are shown), the global systemically important institutions (G-SII) across the globe are considered. Data is based on year-end 2023.*




**Liechtenstein's financial sector is highly interconnected with global financial markets.** Thanks to its membership in the European Economic Area (EEA), banks have full access to the European Single Market. Additionally, some banks operate outside the EEA with subsidiaries and branches in Switzerland, the Middle East, and Asia. After facing challenges following the global financial crisis, AuM have been on an upward trajectory in recent years, driven by net money inflows, acquisitions abroad, and positive market developments. The AuM of Liechtenstein banks are well diversified across the globe, underscoring the international interconnectedness of the domestic banking sector. Moreover, Liechtenstein banks benefit from the safe-haven status of the Swiss franc, which attracts increasing net new money flows during global crises.

31 *For an in-depth analysis between the two approaches please refer to Box 4, in the 2019 FSR.*

**Liechtenstein's banks focus on private banking and wealth management services, which are central to their revenue structure.** After the global financial crisis, EBT remained below pre-financial crisis levels, with roughly two-thirds of total revenues for O-SIIs derived from fee and commission income, while only one-third came from interest income. This revenue composition highlights the sector's reliance on wealth management and private banking activities, setting it apart from larger global banks with more diversified income streams. In recent years, EBT has recovered significantly but still lags behind the numbers recorded in 2007. Profitability remained subdued for some years after the crisis, not only due to the sluggish global recovery but also because of increasing international regulatory pressure, which led to additional expenses for banks. While domestic banks' profitability has improved substantially in recent years, the contribution of foreign group companies has also become increasingly important, although this trend has reversed somewhat in 2023 and the first half of 2024 in light of the reversal of interest rates.

**Profitability within the banking sector is a key focus, with performance indicators remaining stable but not particularly outstanding compared to European peers.** The high cost-income ratios (CIR) reflect the sector's operational challenges, driven by a staff-intensive business model and stringent regulatory requirements. Enhancing operational efficiency and managing administrative costs are essential for sustaining profitability over the medium to long term. High regulatory pressure has been particularly challenging for smaller banks, with related expenses – such as compliance costs – pushing the CIR upward. Staff costs in compliance, particularly in anti-money laundering and regulatory units, internal audit, and risk management, have increased significantly in recent years. Global competition will remain challenging, and efficiency indicators suggest further room for improvement. A sustained reduction in the CIR and a strengthening of structural efficiency in the banking sector will remain key challenges in the coming years.

**The liability side of Liechtenstein banks' balance sheets relies primarily on deposits.** Due to the banks' focus on private banking activities, the sector is relatively abundant in deposits, which account for more than 80 % of total liabilities. As a result, market-based funding plays a minor role, representing less than 6 % of total liabilities. The stable funding base is further evidenced by the loan-to-deposit ratio, which hovers between 65 % and 75 %, indicating low funding risks for the banking sector.

**Asset quality is stable despite the increase in interest rates, with non-performing loans (NPLs) remaining at low levels.** As of mid-2024, the NPL ratio of the banking sector on a consolidated level amounted to 0.9 %, placing it among the lowest values across European countries. The low level has to be seen in light of the stable development of Liechtenstein's economy in the past few decades despite the global financial crisis, the COVID-19 pandemic and the recent hike in interest rates. While Liechtenstein's GDP features significant volatility in light of the tiny size of the economy, Liechtenstein never experienced a severe economic crisis, with the housing market even remaining stable during the housing crisis in Switzerland at the beginning of the 1990s.

**Furthermore, the currency treaty between Liechtenstein and Switzerland ensures the equivalence of Liechtenstein and Swiss banks regarding central bank funding from the Swiss National Bank (SNB).** Despite the comfortable liquidity position of Liechtenstein banks, ensuring access to liquidity in the unlikely event of a crisis remains important. Since

Liechtenstein is part of the Swiss franc currency area under an intergovernmental treaty, monetary policy is conducted by the SNB. The SNB has designated four Swiss banking groups – none of which are headquartered in Liechtenstein – as systemically important. SNB guidelines on monetary policy instruments explicitly state that emergency liquidity assistance (ELA) requires certain conditions, including that the bank or banking group seeking credit must be important for the stability of the financial system. While Liechtenstein banks have access to SNB funding on the same terms as their Swiss counterparts, the SNB guidelines suggest that ELA access for Liechtenstein institutions would be limited compared to the largest Swiss banks or banking groups. Therefore, the availability of highly rated securities on banks' balance sheets that can be used as collateral in monetary policy transactions is essential for ensuring liquidity in a crisis. Along with their Swiss peers, Liechtenstein banks can also use the SNB's liquidity-shortage facility and emergency deposit depot, ensuring access to liquidity even in periods of severe shortage. Thus, the banking sector benefits from being part of one of the world's most stable currency areas, with central bank funding guaranteed by an intergovernmental treaty. Additionally, some banks have access to central bank funding in other countries (e.g., the euro area) through their foreign subsidiaries. To address the issue of a lack of lender of last resort, Liechtenstein has recently joined the IMF as its 191st member, ensuring access to additional liquidity in a crisis under certain circumstances.

## Insurance sector

**Liechtenstein's insurance sector is highly concentrated.** The insurance sector in Liechtenstein include 32 companies operating across three key areas: 15 in life insurance, 15 in non-life insurance (of which 6 are captives), and 2 in reinsurance as of end-2023. The market is dominated by a handful of major players, with four companies accounting for 61% of total premium income across the entire sector. In the non-life segment, this concentration is even more pronounced, as three companies generate 79% of premiums, highlighting significant market dominance.

**A substantial share of premium income originates from international markets thanks to direct market access to EEA countries and Switzerland.** Liechtenstein's insurance sector exhibits a significant level of dependence on international markets, with a notable concentration in neighbouring countries. More than 99% of gross written premiums (GWP) earned by Liechtenstein insurance companies are generated abroad, underscoring the sector's reliance on foreign markets. Among these markets, Switzerland and Germany stand out as the most important, contributing the majority of these international premiums. This heavy reliance on premiums earned in Switzerland and Germany reflects the interconnected nature of the Liechtenstein insurance industry within the broader European market.

**In recent years, Liechtenstein's insurance sector has experienced contrasting trends between its life and non-life segments.** Premiums in the life insurance sector have declined, reflecting ongoing market diversification and challenges posed by the prolonged low interest rate environment. Meanwhile, since 2017, GWP in the non-life sector have consistently exceeded those in the life sector. Reinsurance remains a minor component of the market, contributing less than 1% to total GWP in Liechtenstein as of end-2023.

**Premiums of unit-linked products have experienced a significant decline in the last decade, with a notable uptick in the past year.** The non-life business in Liechtenstein is primarily driven by fire and other damage to property insurance, medical expense insurance, and health insurance, while the life business is dominated by index-linked and unit-linked insurance and other life insurance products. Since 2016, the share of premiums from unit-linked products has been steadily decreasing from 80 % to 44 % in 2022. However, in 2023, this development reversed, with unit-linked premiums showing an upward trajectory.

**Due to special structural characteristics, the insurance sector in Liechtenstein shows relatively low profitability, yet it maintains a relatively high solvency capital requirement (SCR) ratio.** The overall SCR ratio for Liechtenstein's insurance companies surpasses the 200 % threshold, its median standing at 206 % as of end-2023. This indicates a robust capitalisation despite the pressures of low profitability, with the return on equity (RoE) across the entire insurance industry further decreasing to 2.8 % in 2023 from 3.9 % in 2022, which is significantly below the EU average. However, a comparison with other peer countries is difficult, as many Liechtenstein insurance companies are part of international insurance groups, with domestic profitability not showing the complete picture of intra-group risk management strategies.

## Pension schemes

**Liechtenstein's pension system is built on three pillars.** The first pillar consists of old age, disability, and survivors' insurance (AHV/IV), managed by the state. This public insurance program is supplemented by mandatory occupational pension schemes (pillar two) and voluntary private pension plans (pillar three). The first pillar's primary goal is to secure the financial well-being of insured individuals and their families in cases of old age, disability, or death. The second pillar is designed to maintain the individual's standard of living after retirement, while the third pillar offers voluntary, individual pension options to address any financial gaps not covered by the first two pillars.

**The second pillar of Liechtenstein's pension system plays a crucial role in maintaining the standard of living after retirement, holding significant economic importance for the country.** This component comprises autonomous legal entities in the form of foundations, which are subject to the Occupational Pensions Act (BPVG) and are under the supervision of the FMA. Funding for occupational pension provision is derived from contributions made by both employers and employees. Over the past years, there has been a consolidation trend, with the number of such entities decreasing from 33 in 2010 to 16 in 2023. This trend is expected to persist in the near future, as larger pension funds benefit from scale effects. As of year-end 2023, total assets (i.e. the sum of provision capital and technical reserves) in the pension scheme amounted to CHF 7.87 billion, approximately 112 % of Liechtenstein's GDP. This not only reflects the robustness of Liechtenstein's retirement system but also underscores the pivotal role of the second pillar in pension provision.

## Investment funds and asset management companies

**The asset management sector in Liechtenstein remains a key component of the country's financial landscape.** By the end of 2023, 18 management companies (ManCos) were authorised to manage investment funds, with the ManCos of the three largest banks controlling the majority of Assets under Management (AuM). In contrast, the remaining independent ManCos are significantly smaller, underscoring the dominance of banking-affiliated ManCos within the sector. Additionally, asset management companies continue to play a vital role in Liechtenstein's financial industry, overseeing approx. CHF 57 billion in assets in 2023, with approximately half of these assets managed by domestic banks.

**The fund sector's connection to domestic banks is substantial, with most of the largest sub-funds managed by ManCos tied to Liechtenstein's three largest banking groups.** This symbiotic relationship underscores the integration of investment fund management within Liechtenstein's broader financial system, where the sector acts as a complement to the banking sector.

## Fiduciary sector

**The fiduciary sector continues to play an important, albeit declining role in Liechtenstein's financial sector, as it faces ongoing regulatory and structural challenges.** The number of Trust and Company Service Providers (TCSPs) continued to decline during 2023 to a total number of 554, likely due to the increase in regulatory requirements and the continued downward trend in the number of trusts and foundations. The total number of foundations and trusts (the main product of the fiduciary sector) in Liechtenstein has seen a further significant decline, dropping from more than 53,000 in 2009 to about 15,000 in 2017, and further to approx. 11,000 in 2023. Still, the sector plays a significant role in the financial sector, with Liechtenstein's company law offering a secure and stable legal framework for dedicating assets to specific purposes, enabling clients to find customised, internationally-oriented solutions. In this context, the significance of non-profit / public benefit foundations has increased substantially in recent years.

## Token economy

**The token economy in Liechtenstein is governed by the legislation on service providers for Tokens and Trusted Technologies (TVTG), effective since January 2020.** This legal framework aims to support the development of the token economy by providing clear regulations for new and unconventional business models. The FMA oversees the registration of service providers, including token generators and those verifying legal requirements for token transactions, with a strong focus on anti-money laundering (AML) compliance.

**MiCAR will create a harmonised legal framework across the EEA, including passporting.** MiCAR will coexist with the TVTG, which already gave a clear legal foundation for the Liechtenstein crypto-market and led to the establishment of several small players. While MiCAR's higher regulatory barriers may temporarily decline the Liechtenstein crypto-market, the sector is expected to mature further and increase demand for skilled labour in the fintech sector. Despite concerns about infrastructure shortages and diminishing location advantages, service providers are likely to remain in Liechtenstein not least due to the FMA's licensing expertise from almost 5 years of in-depth experience in the sector. MiCAR and TVTG will have mutually exclusive applications, such as non-fungible tokens (NFTs) falling under the TVTG. Liechtenstein's leadership in blockchain and cryptocurrency continues to attract companies and start-ups, diversifying the financial sector.

## MACROPRUDENTIAL POLICY FRAMEWORK

**The responsibilities for macroprudential policy and supervision in Liechtenstein are divided among the FMA, the Financial Stability Council (FSC) and the government.** In accordance with the recommendation of the European Systemic Risk Board[32], the primary aim of macroprudential supervision in Liechtenstein is to actively contribute to the overall stability of the financial system. Only a stable financial system can efficiently fulfil its macroeconomic functions and thus contribute sustainably to the economic development in Liechtenstein. Acting as the central body for macroprudential policy and supervision in Liechtenstein, the FSC is comprised of members from the Ministry of General Government Affairs and Finance (MPF) and the FMA. Quarterly meetings are held since its establishment in 2019 to discuss financial stability issues and to take necessary actions to safeguard the stability of the country's financial system. The FSC primarily aims to enhance collaboration on macroprudential issues among the institutions and regularly discusses matters crucial for financial stability. The macroprudential strategy outlines essential aspects in implementing macroprudential supervision in Liechtenstein, serving to promote the decision-making process, communication, and accountability to the public. According to the ESRB, this strategy should be reviewed and updated at least every 3 years. In line with this recommendation, the strategy was evaluated and slightly revised at the end of 2022.

**The FMA, as the competent authority for macroprudential supervision, is legally mandated to ensure financial stability according to Article 4 of the FMA Act.** The FMA can apply various macroprudential instruments for this purpose. Additionally, the FMA serves as the Secretariat to the FSC and provides financial stability analyses to support its work. Based on these assessments, the FSC proposes macroprudential measures by issuing recommendations and warnings to the government, the FMA or other domestic authorities. Decisions on implementing macroprudential instruments are made by the government or the FMA within the existing legislative framework.

**On the European level, both the FMA and the MPF are represented in the European Systemic Risk Board (ESRB).** Since 2017, Liechtenstein has been an active member of the ESRB. While both the MPF and the FMA are members of the General Board, the decision-making body of the ESRB, the technical work in its committees is carried out by FMA staff, in line with its role as the competent authority for macroprudential supervision in Liechtenstein. The ESRB can issue warnings and recommendations to member states or national supervisory authorities if significant risks to the financial system are identified. In this context, Liechtenstein's macroprudential authorities are diligently working on implementing the list of macroprudential recommendations and warnings to contribute to the financial system's stability both at the domestic and the European level.

*32 ESRB recommendation ESRB/2011/3*

# LIST OF ABBREVIATIONS

| | |
|---|---|
| AHV / IV | Public pension system |
| AIF | Alternative Investment Fund |
| AIFMD | Alternative Investment Fund Managers Directive |
| AML / CFT | Anti-money laundering / Combating the financing of terrorism |
| AMS | Labour Market Service |
| AuM | Assets under management |
| bp | Basis points |
| BankG | Banking Act |
| BCBS | Basel Committee on Banking Supervision |
| BIS | Bank for International Settlements |
| BPVG | Occupational Pension Act |
| CAPE | Cyclically-adjusted price / earnings |
| CCyB | Countercyclical capital buffer |
| CDS | Credit default swap |
| CET1 | Common equity Tier 1 |
| CHF | Swiss franc |
| CIR | Cost-income ratio |
| CoB | Conduct of business |
| CRD | Capital Requirements Directive |
| CRE | Commercial real estate |
| CRR | Capital Requirements Regulation |
| CSRD | Corporate Sustainability Reporting Directive |
| DAX | German stock index (Deutscher Aktienindex) |
| DSCR | Debt-service-coverage ratio |
| EBA | European Banking Authority |
| EBT | Earnings before taxes |
| ECB | European Central Bank |
| EEA | European Economic Area |
| EFTA | European Free Trade Area |
| EIOPA | European Insurance and Occupational Pensions Authority |
| ELA | Emergency liquidity assistance |
| ESA | European Supervisory Authority |
| ESFS | European System of Financial Supervision |
| ESRS | European Sustainability Reporting Standards |
| ESG | Environmental, social and governance |
| ESMA | European Securities and Markets Authority |
| ESRB | European Systemic Risk Board |
| ETV | Exposure-to-value |

| | |
|---|---|
| EU | European Union |
| FI | Financial integrity |
| FMA | Financial Market Authority |
| FMI | Financial market infrastructure |
| FOMC | Federal Open Market Committee |
| FSC | Financial Stability Council |
| FTSE100 | Financial Times Stock Exchange 100 Index |
| GaR | Growth-at-risk |
| GDP | Gross domestic product |
| G-SII | Global systemically important institution |
| GWP | Gross written premium |
| ICT | Information and communication technology |
| ICS | Internal control system |
| IFD / IFR | Investment Firms Directive / Investment Firms Regulation |
| IMF | International Monetary Fund |
| IRB | Internal ratings-based approach |
| JPY | Japanese Yen |
| LBV | Liechtenstein Bankers Association |
| LCCI | Liechtenstein Chamber of Commerce and Industry |
| LCR | Liquidity coverage ratio |
| LSTI-O | Loan-service-to-income (at origination) |
| LTI | Loan-to-income |
| LTV-C | Loan-to-value (current) |
| LTV-O | Loan-to-value (at origination) |
| ManCos | Management companies |
| MiCAR | Markets in Crypto-Assets Regulation |
| MiFID / MiFIR | Markets in Financial Instruments Directive / Markets in Financial Instruments Regulation |
| MIS | Management Information System |
| MPF | Ministry for General Government Affairs and Finance |
| NAV | Net asset value |
| NCA | National competent authority |
| NEER | Nominal-effective exchange rate |
| NFC | Non-financial corporations |
| NFTs | Non-fungible tokens |
| NGFS | Network for Greening the Financial System |
| NPL | Non-performing loans |
| NSFR | Net stable funding ratio |

| | |
|---|---|
| OECD | Organisation for Economic Co-operation and Development |
| OFAC | US Treasury's Office of Foreign Assets Control |
| O-SII | Other systemically important institution |
| P2G | Pillar 2 guidance |
| P2R | Pillar 2 requirement |
| P&L | Profit and loss |
| PMI | Purchasing manager indices |
| q-o-q | Quarter-on-quarter |
| R&D | Research and development |
| REER | Real-effective exchange rate |
| RoA | Return on assets |
| RoE | Return on equity |
| RRE | Residential real estate |
| RWA | Risk-weighted assets |
| S&P 500 | Standard & Poor's 500 |
| SA | Standardised approach |
| SBPV | Occupational pension provisions for state employees |
| SCR | Solvency capital requirement |
| SDGs | Sustainable development goals |
| SEC | US Securities and Exchange Commission |
| SMI | Swiss Market Index |
| SNB | Swiss National Bank |
| SPL | "Stiftung Personalvorsorge Liechtenstein" |
| SREP | Supervisory review and evaluation process |
| SyRB | Systemic risk buffer |
| TCSP | Trust and company service providers |
| THK | Liechtenstein Institute of Professional Trustees and Fiduciaries |
| TrHG | Professional Trustees Act |
| TVTG | Tokens and Trusted Technologies Act |
| UCITS | Undertakings for collective investments in transferable securities |
| US | United States |
| y-o-y | year-on-year |
| 3m-o-3m | 3-months-on-3-months |

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