



SWITZERLAND

SELECTED ISSUES

June 2024

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MONETARY POLICY TRANSMISSION IN SWITZERLAND¹

As an open economy with a highly integrated financial system and safe haven status, Switzerland exhibits several unique features in its monetary policy transmission process. This Selected Issue Paper studies the relationship between monetary policy, financial conditions, and real activity during the current monetary policy tightening episode. After a review of various channels through which monetary policy changes affect financial conditions, the paper shows that the transmission of policy rates to market rates has been swift and that the exchange rate is an important channel. The response of real activity to tightening financial conditions has remained broadly in line with past tightening episodes.

A. Background

1. Following the pandemic, numerous countries, including Switzerland, have experienced a significant increase in inflation. A decade ago, in the aftermath of the Global Financial Crisis, Switzerland grappled with the challenges of low inflation and deflation in conducting its monetary policy.² This time, the post-pandemic era brought about a sharp increase in consumer demand and disruptions in supply chains, compounded by an escalation of energy costs due to Russia's invasion of Ukraine. These factors collectively fueled a spike in headline inflation across the world. In Switzerland, headline inflation reached a high of 3.5 percent in August 2022, exceeding the Swiss National Bank's (SNB) price stability range, set at 0–2 percent, yet remaining substantially lower than levels seen in other advanced economies. The initial surge in inflation was primarily attributed to the rising energy costs, marking the onset of imported inflation, although domestic inflation began to rise earlier, over the course of 2022. Following its peak in August 2022, headline inflation experienced a brief escalation at the start of 2023 but subsided to below 2 percent by August 2023, thereby aligning once more with the SNB's price stability criteria.

B. The Monetary Policy Response

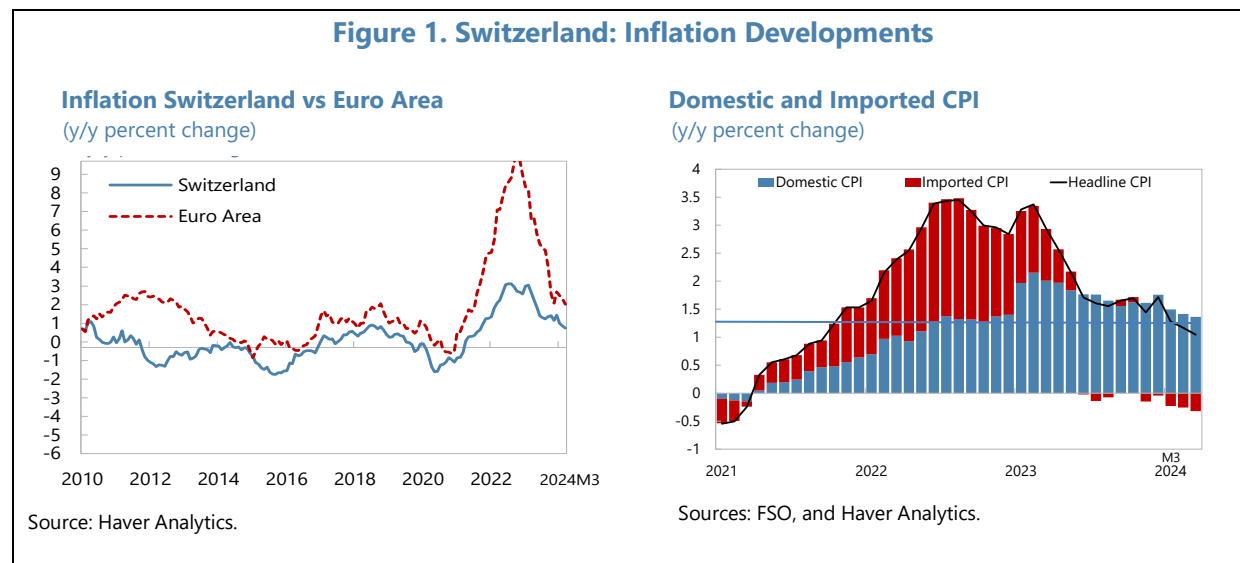
2. The SNB adopted a flexible strategy to fight rising inflation. To fulfill its price stability mandate and in line with its policy strategy (Box 1), the SNB tightened monetary policy by raising the policy rate and allowing the exchange rate to appreciate. In response to the initial buildup of inflationary pressures at the beginning of 2022, the SNB stopped foreign currency purchases and allowed the exchange rate to appreciate given widening inflation differentials. The SNB

¹ Prepared by Salvatore Dell'Erba, Fuda Jiang and Zhao Zheng. The authors would like to thank S. Pelin Berkmen, Mark Horton and seminar participants at the SNB for helpful comments and suggestions.

² See Thomas Jordan (2024), 'The Swiss National Bank's monetary policy response to the post-COVID period of high inflation' in Monetary Policy Responses to the Post-Pandemic Inflation, Centre of Economic Policy and Research.

subsequently raised its policy rate, from -0.75 percent in May 2022 to 1.75 percent in June 2023. From 2022Q4, the SNB started to sell foreign currency, totaling CHF22.3 billion in 2022 and CHF133 billion in 2023. Even so, the franc appreciated in nominal (10 percent cumulatively between 2022 and 2023) and real terms (3.5 percent in 2023). With currency appreciation and its depressing impact on inflation, the SNB increased its policy rate by less than other central banks.

Figure 1. Switzerland: Inflation Developments

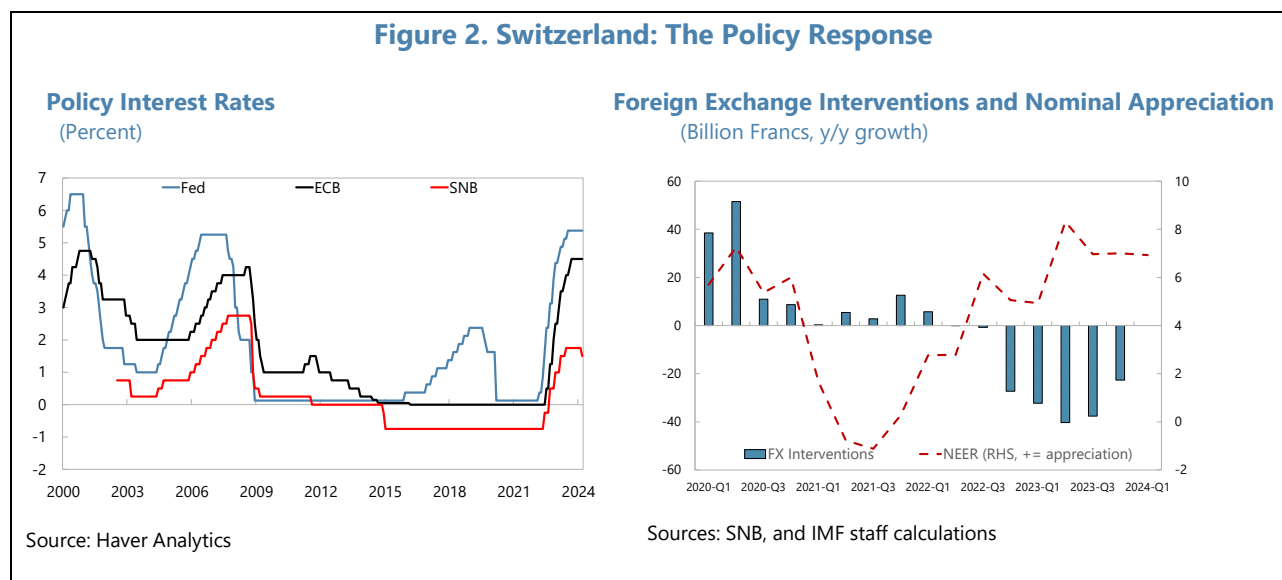


Box 1. Switzerland: The Monetary Policy Strategy 1/

The SNB's constitutional mandate is to ensure price stability while considering economic developments. The SNB equates price stability with a rise in the consumer price index (CPI) by between 0 and 2 percent per annum, with the objective to achieve inflation within this range over the medium-term. To ensure price stability, the SNB aims to maintain appropriate monetary conditions, as determined by the interest rate and the exchange rate.

To influence monetary conditions, the SNB utilizes the policy rate as its main instrument. The SNB sets the policy rate and steers money market rates, of which the Swiss Average Overnight Rate (SARON) is the most important, close to the policy rates, through tiered remuneration of sight deposits and liquidity-absorbing operations. The SNB also communicates policy decisions via the quarterly publication of a conditional inflation forecast. If necessary, the SNB may also use additional monetary policy measures (Foreign exchange (FX) interventions) to influence the exchange rate or the interest rate level.

1/ Source: [The SNB's Monetary Policy Strategy](#)

Figure 2. Switzerland: The Policy Response

3. The SNB adjusted the implementation of monetary policy to steer market rates. In the transition to positive rates,³ the tiering of sight deposits (Box 2) was modified to support interbank transactions.⁴ Furthermore, repos and sales of SNB bills have been used to absorb reserves, resulting in a significant reduction of liquidity. FX sales, used as part of the policy strategy, have also contributed to reduce banks' reserves. Total sight deposits held by banks and other institutions at the SNB decreased by 53 percent between June 2022 and March 2024. As liquidity tightened, the SNB lowered the threshold factor at which it remunerates reserves at the policy rate, from 28 to 25⁵ to affect the amount of reserves available in the interbank market and thus contributing to keep it active.

4. The SNB's balance sheet has changed in response to the new policies. After many years of continuous expansion, the SNB's balance sheet contracted in 2022 and 2023 largely because of sale of FX (totaling of CHF155 billion during 2022–2023). The liability side shifted from sight liabilities to repos and SNB bills over the same period (CHF184 billion of SNB bills and CHF128 billion of repo transactions). The SNB experienced a more limited financial loss in 2023 (CHF3.2 billions) compared to 2022 (CHF132 bn).⁶ In 2023, the financial loss was driven by higher interest payments to banks (CHF8.5 billion), which negatively offset profits on its foreign position

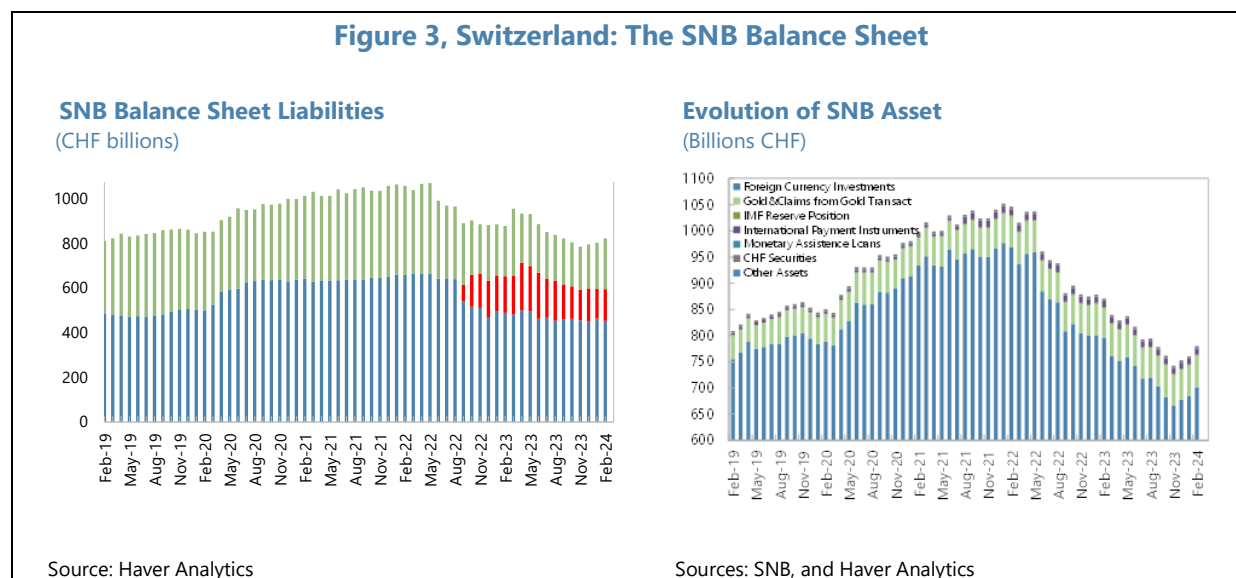
³ See Thomas Moser (2023) "[Implementing monetary policy with positive interest rates and a large balance sheet - first experiences](#)"

⁴ Reserves exceeding the threshold are now paid a punitive rate (the policy rate minus 50 basis points). Conversely, banks below the threshold have an incentive to borrow from other banks instead of the SNB due to the higher punitive rate (the policy rate plus 50 basis points).

⁵ For sight deposit account holders subject to minimum reserve requirements (i.e. domestic banks), the threshold corresponds to the moving average of the minimum reserve requirements over the preceding 36 reference periods, multiplied by the applicable threshold factor. For all other sight deposit account holders, the SNB sets fixed thresholds.

⁶ In 2022, the SNB's financial loss was mostly driven by FX investment losses (CHF131 billion), related to both price and valuation changes from exchange rate movements (see Switzerland, Selected Issue Paper (2023)).

(CHF4 billion). To ensure effective implementation of monetary policy and reduce the cost of tiered reserve remuneration, the SNB stopped remunerating minimum reserves in December 2023, lowered the threshold of the tier that is remunerated at the policy rate, and increased the minimum reserve ratio from 2.5 to 4 percent in April 2024 (effective July 2024).



5. With inflation comfortably within the price stability range, the SNB lowered the policy rate in March 2024. With headline inflation undershooting the initial forecast and remaining well within the price stability range, the SNB first announced it would no longer focus on selling foreign currency in December 2023, and then became the first central bank among major advanced economies to cut the policy rate in March 2024 by 25 bps to 1.5 percent. The latest SNB conditional forecast also indicated that inflation is expected to remain within the price stability range over the medium-term, at 1.1 percent by 2026. In the next sections we first review the transmission of this policy tightening to interest rates, the exchange rate, and broader financial conditions. We subsequently look into the impact of policy tightening on the real economy.

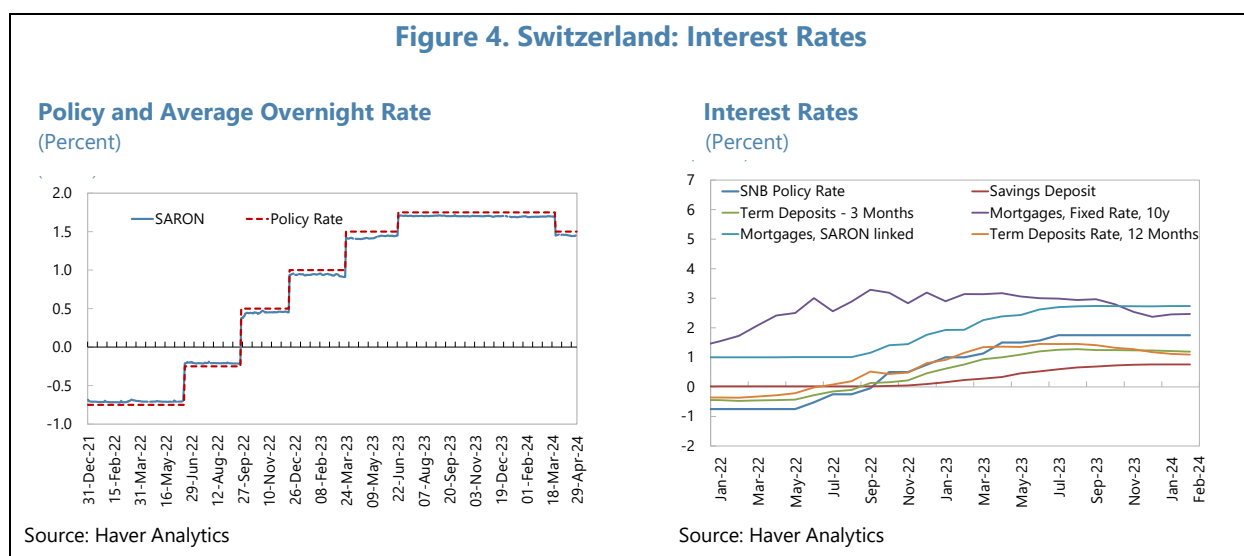
Box 2. Switzerland: Reserve Tiering

During the period of negative interest rates, to alleviate the burden on banks, the SNB introduced a reserve tiering system. This system exempted a portion of banks' deposits from negative interest rates, known as the exemption threshold. Under the old tiering, the remuneration of sight deposits up to the exemption threshold was zero, while reserves exceeding this threshold (a multiple of the bank's minimum reserves) were subject to negative interest rates. By implementing a reserve tiering system, the SNB aimed to prevent excessive pressure on banks' profitability, while encouraging lending.

C. Monetary Policy Transmission in Switzerland

Passthrough to Interest Rates

6. The passthrough of the monetary policy rate to money market rates, as well as deposit and lending rates, has been both quick and significant. In the transition to positive rates, SARON and other money market rates remained close to the policy rate.⁷ In this tightening cycle, the magnitude of passthrough coefficients (how market rates react to policy rate changes)⁸ for most consumer loan rates has ranged between 30 and 70 percent. For term deposits, the transmission rates have been approximately 70 percent for shorter maturities (under 3 years) and about 50 percent for longer maturities. This pattern has held true for fixed-rate mortgage rates as well. SARON-linked mortgages have seen a 70 percent passthrough rate. For savings deposits, passthrough rates have hovered around 30 percent. Overall, the passthrough is both quicker and stronger for mortgages and term deposits, but slower and smaller for savings deposits.⁹ Given the substantial size of savings deposits (311 billion CHF), the relatively low passthrough rate contributed to higher interest margin and profitability of Swiss banks in 2023.



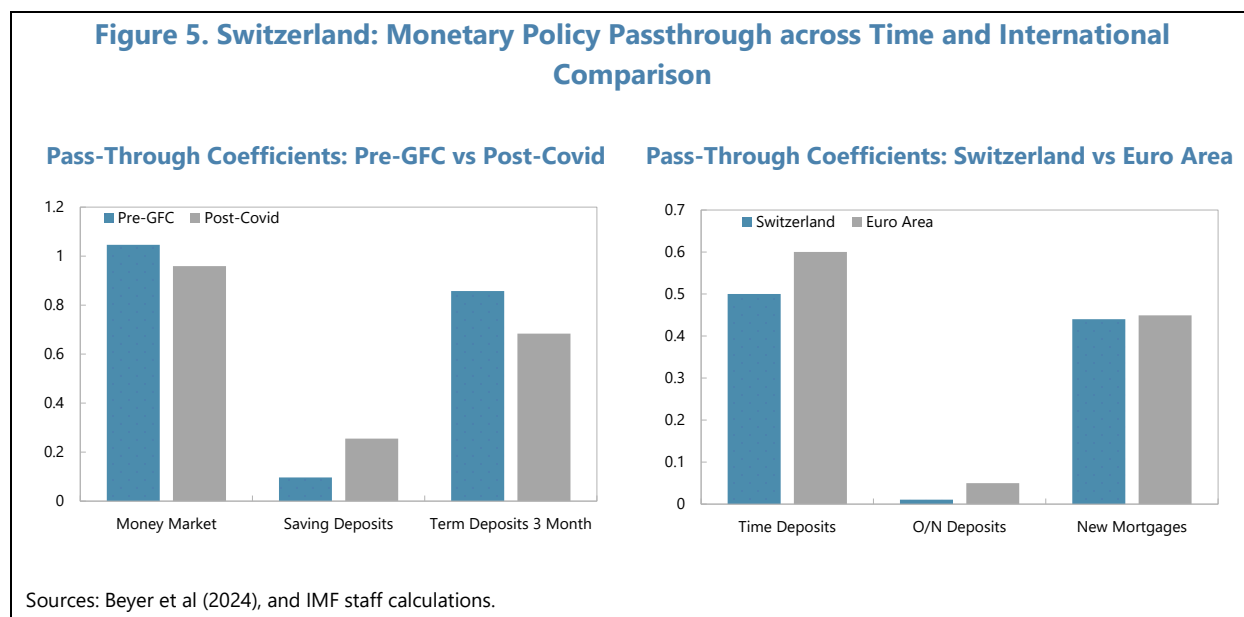
7. **The passthrough has been comparable to the 2005–2008 tightening cycle, and in line with that observed in the Euro Area in this cycle.** In the current cycle, passthrough coefficients in Switzerland are slightly higher for savings deposits (26 percent) but lower for 3-month term deposits (68 percent), compared with 10 percent and 86 percent respectively in the 2005–2008 tightening cycle. Meanwhile, in the current cycle, the passthrough coefficients in Euro Area are on average

⁷ See Antoine Martin and Thomas Moser (2024) [“The implementation and transmission of the SNB’s monetary policy during the recent tightening cycle”](#)

⁸ The passthrough coefficient is calculated as the ratio of the change of market interest rate to the change of SNB policy rate, from the first hike to three months after the last hike for each tightening cycle.

⁹ The SNB started to raise its policy rate in June 2022. Consequently, the interest rates for new mortgages and new term deposits saw an immediate increase in the same month. However, the interest rates for new savings deposits began to rise in October 2022.

60 percent for new time deposits and 45 percent for new mortgages, broadly comparable with the passthrough in Switzerland where 50 percent for time deposit and 44 percent for new mortgages.^{10 11} Notably, the similar passthrough ratios are in line with comparable banking concentration ratios¹² in Switzerland and peer countries (Beyer et al. 2024).



8. The interest rate increase has impacted cash flows for households due to higher mortgage interest expenses. The share of adjustable rate (SARON) mortgages in new originations has increased substantially since 2022. The share has increased from about 15 percent to around 35 percent for owner-occupied properties, and from less than 30 percent to above 70 percent for investment-purpose residential rental properties. In addition, Swiss households also have a high debt level (mostly mortgages) compared with other advanced economies. Given the high level of mortgage debt and the increased share of adjustable-rate mortgages, even a modest uptick in interest rates can lead to a noticeable rise in monthly mortgage payments. Staff estimates suggest that in 2023, mortgage interest expenses rose by approximately 0.5 percent of Swiss GDP.¹³

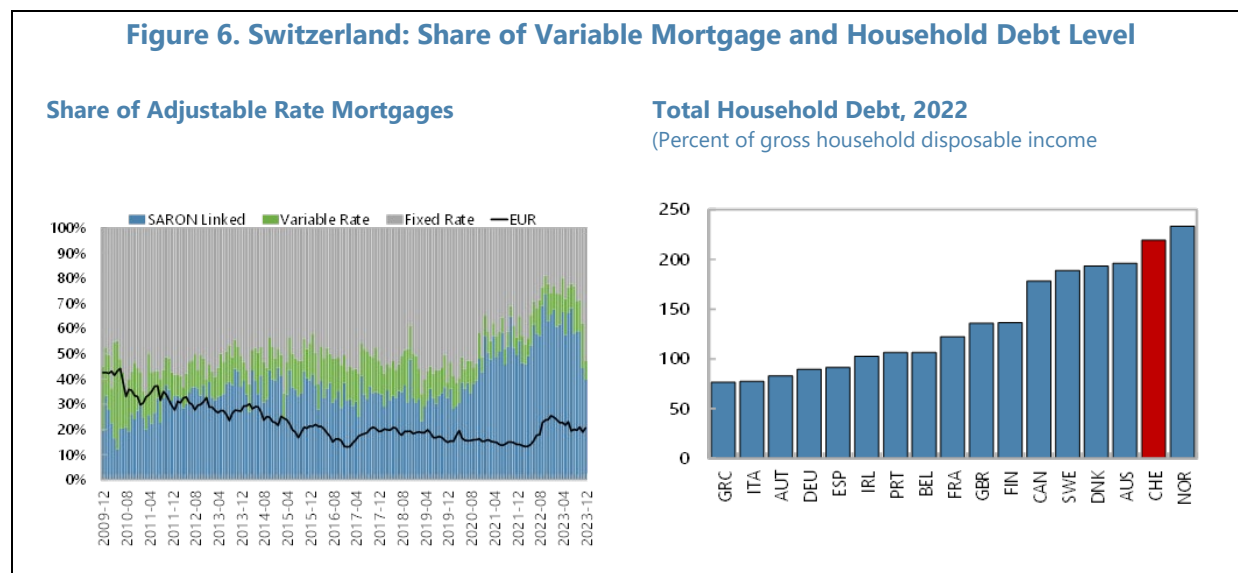
¹⁰ Due to data availability, we use different sets of interest rates for the comparison with the current cycle in Euro Area and the 2005–2008 cycle in Switzerland.

¹¹ The passthrough coefficients in Euro Area are estimated by Beyer et al. 2024 as the volume weighted average across all maturities within the same product category. Due to data availability, the passthrough coefficients in Switzerland are estimated as the equally weighted average across all maturities within the same product category.

¹² Measured by 5-bank asset concentration, which is the assets of five largest banks as a share of total commercial banking assets, from World Bank Databank.

¹³ Similarly, based on data from the Bank of International Settlements, the debt service ratio of the Swiss private non-financial sector increased by 1 percent of GDP between 2022Q4 and 2023Q3.

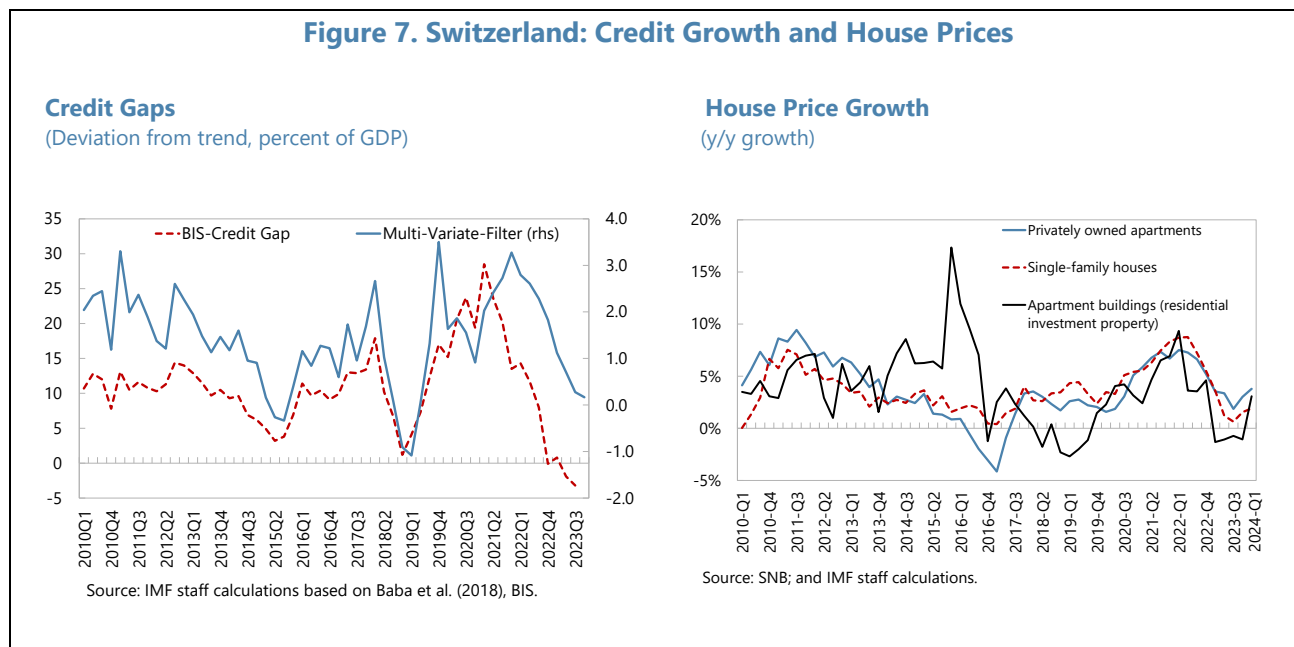
9. Higher interest rates also lead to higher rental cost for non-homeowners. Policy rate adjustments affect the average interest rates of mortgages and thus the mortgage reference interest rate, which is a factor for rent adjustments by Swiss regulation. In 2023, the mortgage reference rate rose in two steps from 1.25 percent to 1.75 percent in June and December. A rent increase of up to 6 percent is possible if the reference interest rate specified in the tenancy agreement is lower than the new reference interest rate. As rents constitute around 20 percent of the CPI basket, this leads to a feedback effect between the SNB policy rate and the CPI. In other words, an increase in the mortgage reference interest rate has a temporary effect on inflation. However, the actual passthrough to rental cost from the first reference rate increase was smaller than anticipated. Rental inflation (y/y) increased from about 1.5 percent before the rise in mortgage reference rate to 2.4 percent after the rise.¹⁴



10. Monetary tightening has contributed to a slowdown of private credit and house-price growth. Growth of mortgage loans, which represent 85 percent of bank lending, moderated to 2.4 percent in 2023 from 3.5 percent in 2022. Growth in other loans contracted in 2023, mainly due to a decline in loans granted in foreign currency. Measures of credit gaps, defined as the deviation of the credit-to-GDP from its trend, have normalized, and currently indicate a broadly neutral credit cycle. Price growth of residential real estate has moderated but with variations across sectors. In 2023, owner-occupied properties (privately owned apartments and single-family houses) experienced positive price growth although slower, while residential-investment properties (apartment buildings) saw slight declines. Indications of a recovery in price growth were observed in 2024Q1.

¹⁴ See [Swiss National Bank 2023 Annual Report](#)

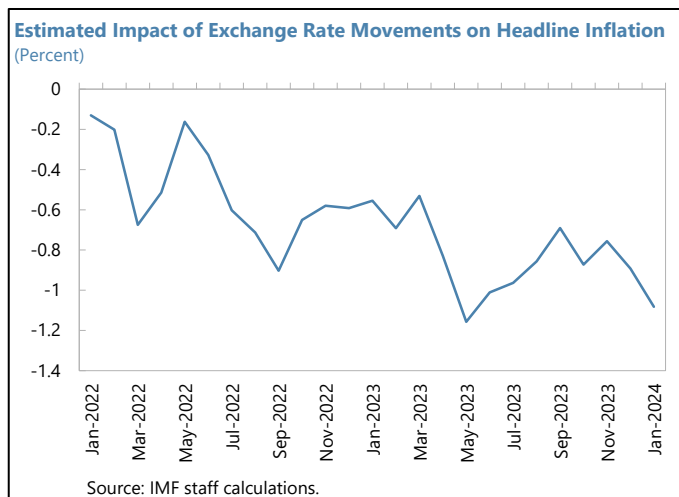
Figure 7. Switzerland: Credit Growth and House Prices



Passthrough to Exchange Rate

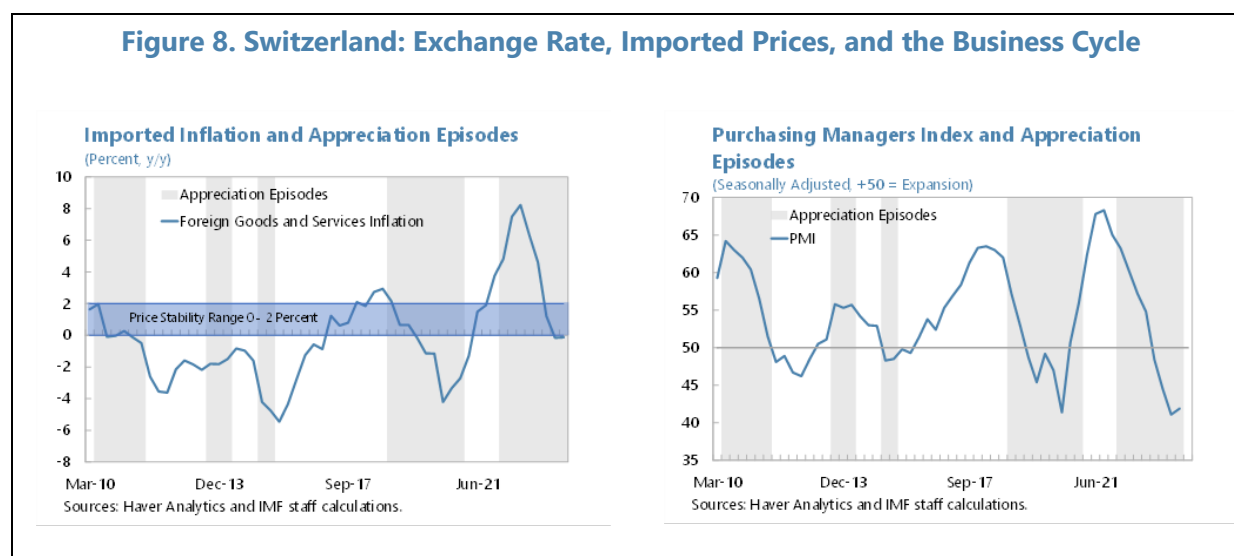
11. In an open economy like Switzerland, the exchange rate plays a key role in the inflation process.

Given that around a quarter of the Consumer Price Index (CPI) basket consists of imports, an appreciation in the exchange rate can significantly influence inflation of foreign goods and services. Furthermore, the role of international trade in Switzerland's economy means that fluctuations in the exchange rate have a substantial impact on the economic cycle.¹⁵ Data since 2010 reveal that periods of currency appreciation¹⁶ have consistently led to a decrease in inflation of imported goods, even causing negative inflation in some episodes. Moreover, there is some evidence of a slowdown in economic activity following appreciation periods, as indicated by contraction of the Purchasing Managers' Index (PMI), including during the most recent cycle of appreciation.



¹⁵ See [Schlegel \(2024\) Interest rates and foreign exchange interventions: Achieving price stability in challenging times.](#)

¹⁶ Appreciation episodes are identified as at least two consecutive quarters of annual appreciation of the nominal effective exchange rate, which is at least above the median value of the entire sample.

Figure 8. Switzerland: Exchange Rate, Imported Prices, and the Business Cycle

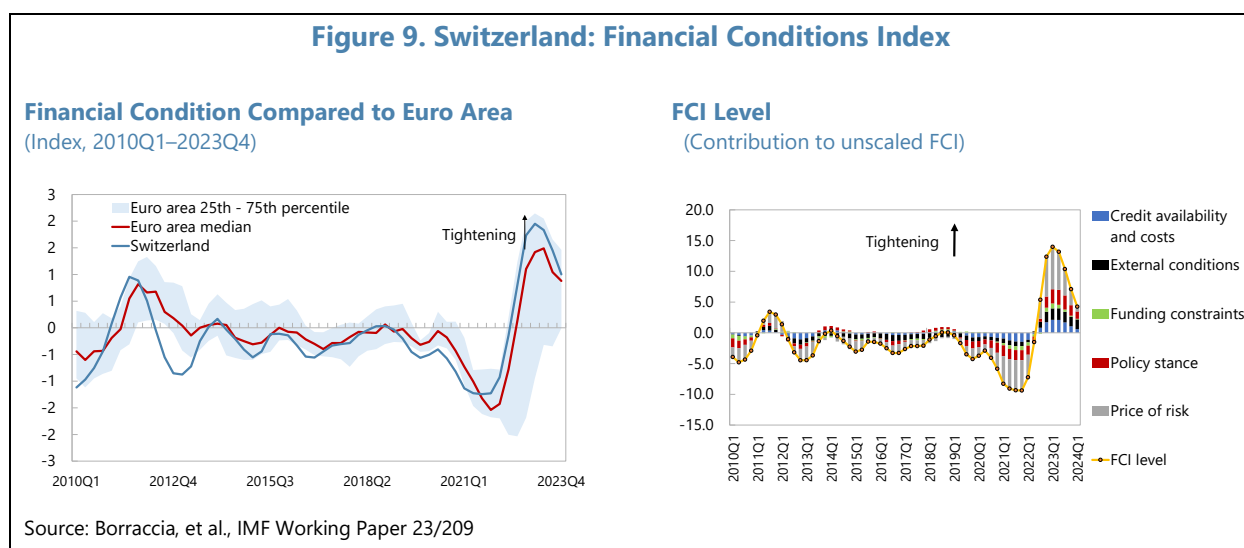
12. The literature shows that historically the exchange rate passthrough was rapid but incomplete in Switzerland. Stulz (2007) using Vector Autoregression (VAR) methods finds that the rate of passthrough to consumer prices over a year averaged 0.17 during the period 1967–2004. Several recent studies have focused on analyzing passthrough during the episode of the sudden appreciation of the franc in 2015. Bonadio et al. (2020) find that the passthrough into unit values is fast, and a passthrough into import prices between 0.4 and 1. Oktay (2022) uses the same episode to study the passthrough into various categories of the consumer price index (CPI). He finds the 1-year headline CPI passthrough is around 0.12, with significant heterogeneity across CPI items.

13. In the recent period, exchange rate appreciation has provided a significant drag on inflation. Staff estimates of the exchange passthrough are broadly in line with the literature (Appendix I). The passthrough rate is 0.12 for the headline inflation and 0.35 for imported inflation at a 12-month horizon. During 2020, the franc appreciated by roughly 6 percent. After a period of stability in 2021, the franc appreciated again, first by 4.2 percent (y/y) in 2022 and then by 6.8 (y/y) percent in 2023. Based on the estimated passthrough coefficients, the direct contribution from appreciation to a decline in headline inflation have fluctuated over the past two years, between -0.5 and -0.8 percent (-1.7 and -2.8 percent for imported inflation).

Impact on Financial Conditions

14. Higher policy rates and the franc appreciation have contributed to a significant tightening of financial conditions. In order to gauge the evolution of financial conditions in Switzerland, we combine several indicators in a synthetic metric following the approach of Borraccia

et al. (2023, Box 3).¹⁷ The Financial Conditions Index (FCI) shows that some tightening started to occur in 2022Q1 driven by price of risk (mainly stemming from global indicators) in response to the war on Ukraine. Subsequently, tightening of monetary policy, external conditions (including the impact of the exchange rate appreciation), and price of risk contributed to a further tightening of financial conditions. The index peaked in 2023Q1. Since then, there has been a gradual easing in overall financial conditions due to lower price of risk and lower credit costs, driven by a decline in longer term rates.¹⁸ Despite this easing, as of 2024Q1, financial conditions remained in tight territory, with the policy stance and external conditions as contributing factors. The policy rate cut in March 2024 and the depreciation of the franc are expected to bring financial conditions toward a more neutral level, although this will also depend on the evolution of external conditions, including the exchange rate.



D. Impact on Output and Inflation

15. We next examine the impact of tighter financial conditions on the real economy. We estimate the response of output and inflation to shocks to financial conditions. We estimate a Bayesian vector autoregressions over the period 2000Q1–2019Q4 including, in this order, real GDP (in logarithms), the headline CPI (in logarithms), the FCI, the policy rate and nominal effective

¹⁷ For an overview of the different techniques and methodologies to construct indices of financial conditions, see discussion in Borraccia et al. (2023).

¹⁸ The FCI measures the contribution of the exchange rate (which falls within “external conditions” category) to a tightening of financial conditions via its influence on the growth of total financial liabilities. While the FCI presented here ensures cross-country comparability, it shows less impact on financial conditions from the franc appreciation than it might be the case for a country like Switzerland. For comparison, the Goldman Sachs Financial Conditions Index, puts higher weights on the interest rates and the exchange rate, of 60 percent and 20 percent respectively, and thus show higher contribution to tightening from the franc appreciation compared to other financial markets variables like credit spreads and equities (Martin and Moser, 2024).

exchange rate. We consider the response of output and inflation to a contractionary financial conditions shock identified recursively.^{19 20} The dashed red lines are the point estimates, while the grey areas are 84 percent confidence intervals. The results are indicative of the linear effect of a tightening of financial conditions: a one standard deviation increase in the financial conditions index is associated with a decline in real GDP from its pre-shock path by 0.35 percent within four quarters, and the effect peaks at around four to five quarters. For inflation, the decline is 0.1 percent within four quarters; the effect peaks within eight to ten quarters. In both cases, the results also suggest a persistent negative effect of financial conditions tightening on the level of output and inflation relative to trend.²¹

Box 3. Switzerland: Index of Financial Conditions

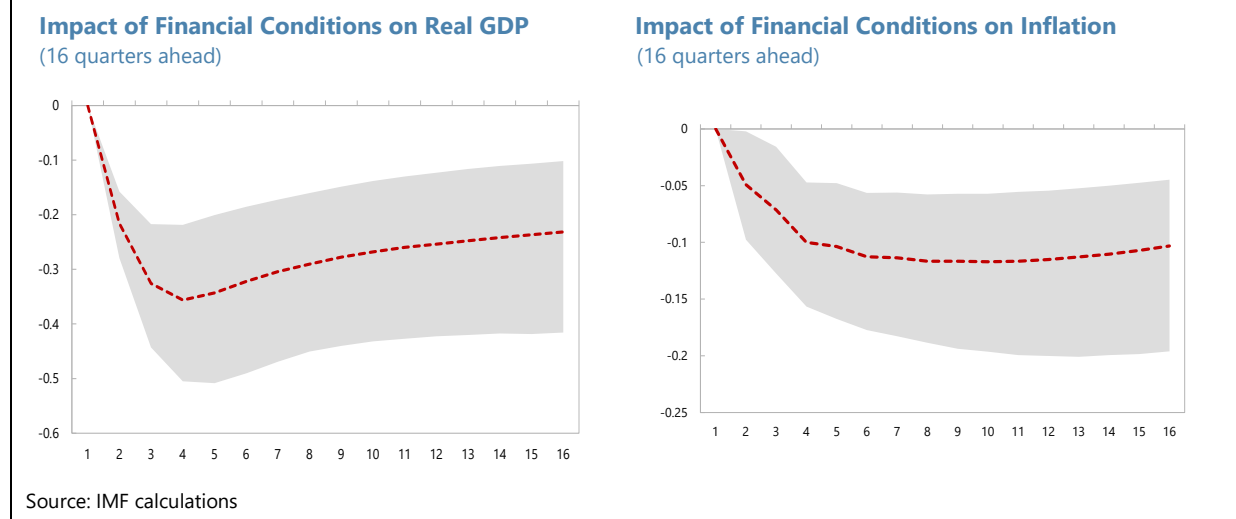
Borraccia et al. (2023), introduced a new indicator of financial conditions, a Financial Conditions Index (FCI), that aims to capture the availability and affordability of financing. Using partial least squares, the paper targets the growth of financial liabilities in the economy due to various drivers including quantity constraints, prices, and market volatility. The index is constructed by aggregating several financial indicators into five main categories, which reflect the various ways in which financial conditions influence the economy and can be classified as:

- *Credit Availability and Costs*; focusing on the accessibility and cost of credit for households and businesses, incorporating factors such as lending rates and asset valuations.
- *External Conditions*: which considers factors external to domestic financial systems, like exchange rates and international financial linkages.
- *Funding Constraints*: which addresses constraints on financial intermediation, covering variables included in the Financial Soundness Indicators (FSI) like non-performing loan ratios and financial sector's market capitalization.
- *Policy Stance*: which reflects the impact of central bank rates and financial policies on various indicators, including deposit rates and monetary aggregates.
- *Price of Risk*: which captures market premia including government and corporate bond spreads and measures of market volatility both in international markets and Switzerland.

¹⁹ The identifying assumption implied by this recursive ordering is the same as in Gilchrist and Zakrajšek (2012), that shocks to the FCI affect economic activity and inflation with a lag, while the policy rates and NEER can react contemporaneously to such a financial shock.

²⁰ Since the FCI index includes both the policy rate and the nominal effective exchange rate, in a first step we regress the FCI on the policy rate and the effective exchange rate, and we then include the residual in the VAR.

²¹ The results including the FCI in level in the VAR are similar, albeit the impact on GDP is somewhat less persistent, with the decline in GDP equal to 0.05 percent at the 4 years horizon. The results are also very similar when using alternative identification schemes, with FCI ordered last among fast moving variables and identification by sign restrictions and zero and sign restrictions. With sign restrictions, the bulk of the impact on GDP and CPI occurs within the first three quarters, while the peak impact on GDP and CPI occurs around same time as in the recursive identification but increases to -0.6 for GDP, and -0.2 for CPI.

Figure 10. Switzerland: Real Impact of Tightening Financial Conditions

16. According to these estimates, the impact of the tightening has somewhat peaked in the current cycle. The estimated average effects do not account for factors specific to the current cycle, including the pace and the size of tightening,²² but indicate that the bulk of the impact from the tightening has already occurred. Overall, these results are broadly in line with the literature which finds that a tightening of financial conditions tends to affect the economy with lags.²³ It is also consistent with the literature which finds that, among other things, a country like Switzerland, with a high level of financial development, a flexible exchange rate, and central bank transparency has relatively strong monetary policy transmission.²⁴

²² For instance, the cumulative tightening from 2022Q1 is roughly three times larger than the average size of the shock over the estimation sample.

²³ See Martin and Moser (2024), [Avalos et al. \(2023\)](#).

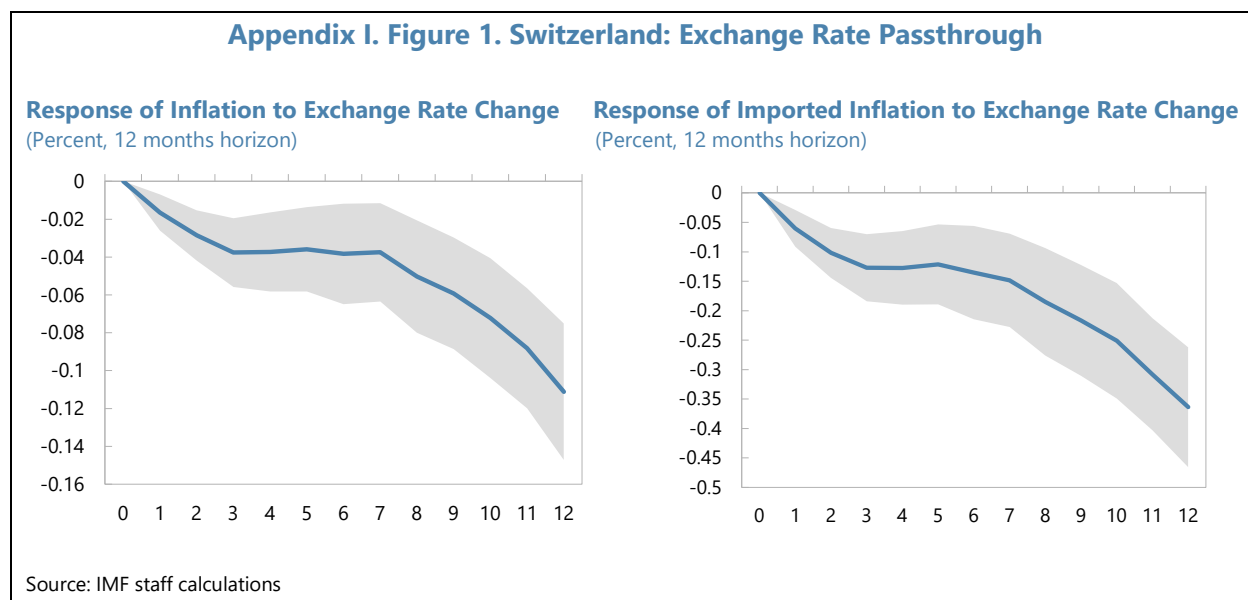
²⁴ See Deb et al. (2023).

Appendix I. Exchange Rate Passthrough

This Appendix provides an updated estimate of the average exchange rate passthrough into prices in Switzerland. We use the [Jordà \(2005\)](#) methodology, following the specification of [Carriere-Swallow et al. \(2023\)](#) and estimate impulse response functions from local projections as follows:

$$p_{t+h} - p_{t-1} = \beta_h \Delta ER_{t-1} + \sum_{l=1}^{12} \theta_h^l M_{t-l} + \varepsilon_{h,t} \quad (1)$$

where p_t is the log price index (consumer price index, consumer price index of imported goods) and ΔER_{t-1} is the lag change in the log effective nominal exchange rate. The coefficient β_h denotes the (percent) response of prices to a one percentage point change in the nominal effective exchange rate at the h months horizon. The vector M_t , following Burstein and Gopinath (2014), controls for the SNB business cycle index, lagged inflation, lagged changes in the exchange rate, as well as the lagged changes in the supply price index (to capture cost-push shocks). Below we present the results estimated over the period 1996M1–2023M12. In line with the literature, we find the cumulative passthrough to a 1 percent of appreciation at one year horizon to be 0.12 for the overall CPI and about 0.35 for the “foreign/imported” CPI.



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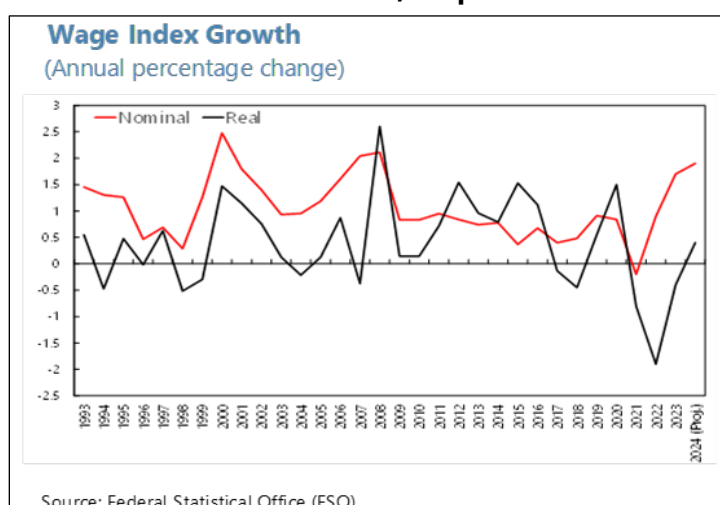
LABOUR MARKETS: THE ROLE OF MISMATCHES¹

In Switzerland, wage growth has remained modest despite a tight labor market. This Selected Issue Paper shows that wage dynamics are driven by fundamentals, in particular labor productivity and inflation expectations. The recent tightening of the labor market and the shift in the Beveridge Curve were driven by higher labor demand but also by structural factors preceding the pandemic, related to skill mismatches. These mismatches are likely to be exacerbated over time due to demographic trends. Better integration and participation of women and older workers and migration could mitigate these effects and promote growth.

A. Wage Developments

1. Nominal wage increases in Switzerland have remained subdued, despite the increase in inflation and tight labor markets.

Annual wage growth was 0.9 percent in 2022 and 1.7 percent in 2023. Real wage growth was negative in 2022 (-1.9 percent) and in 2023 (-0.4 percent). In 2024, nominal wages are expected to grow at 1.9 percent, which is higher than the historical average (1 percent), while real wage growth is projected to be around 0.4.



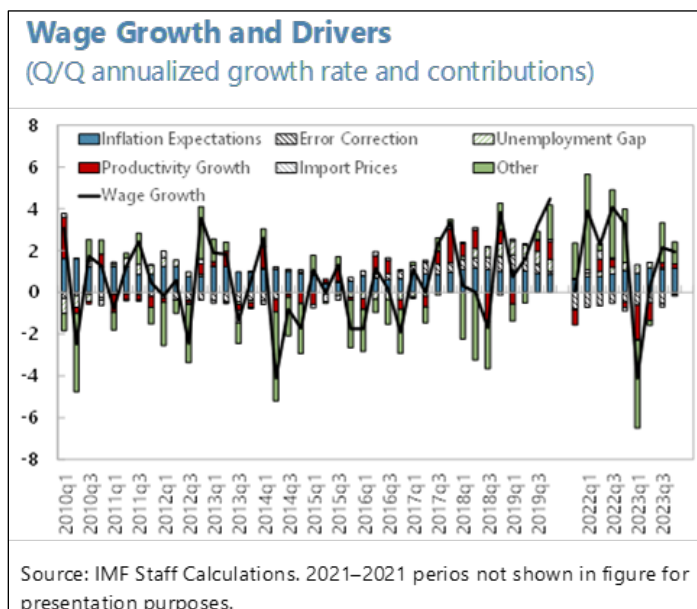
2. To understand dynamics of wage drivers in Switzerland and their implications for wage pressures, we employ a wage Phillips curve framework.

Following [IMF \(2023\)](#), a hybrid wage-Phillips curve is estimated for Switzerland, augmented with an error correction term to reflect wage gaps from long-term trends. The model (estimated for 2000Q1–2019Q4) relates wage inflation (measured by compensation per employee) to the following explanatory variables: Hodrick-Prescott filtered unemployment gap, inflation expectation (proxied by Consensus 2 year-ahead forecasts), import prices, deviation of real wage gaps from trend productivity, and lagged wage growth (to capture persistence unrelated to wage gaps). Estimates show that the slope of the Phillips curve (coefficient of the unemployment gap) is negative; inflation—both lagged and expected—and productivity growth correlate positively with wage growth. The coefficient of the error-correction term is negative, meaning that if real wages are above its estimated long-run relationship with productivity, they put downward pressures on wages and upward pressures if they are below.

¹ Prepared by Salvatore Dell'Erba and Tianxiao Zheng. The authors would like to thank Pelin S. Berkmen, Mark Horton and seminar participants at the Federal Department of Finance for their helpful comments.

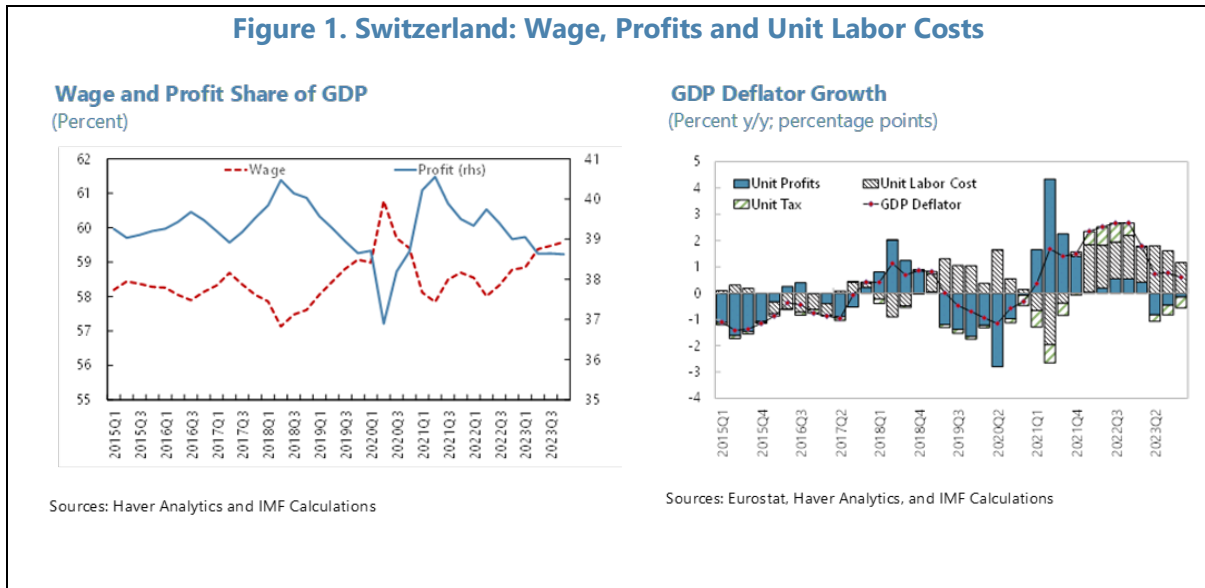
3. Historically, nominal wage growth has been driven by inflation expectations and productivity.

In the run up to the Global Financial Crisis (GFC), on average, inflation expectations contributed around 1 percentage points to nominal wage growth in Switzerland while productivity growth contributed around 0.4 percentage points. Post-GFC, productivity growth declined, but wages continued to grow, reflecting the impact of expected inflation and past wages (“other”) and leading to some misalignment of wages from the estimated long-run relationship with productivity, putting downward pressure on wages. Productivity growth has recovered since 2017 and became the dominant driver of wage growth in the run-up to the Covid-19 pandemic. In the post-pandemic period, lagged inflation and inflation expectations have explained the dynamics of nominal wage growth.



4. The risk of a wage-price spiral remains low. The wage share of GDP in Switzerland has increased since 2021 and is close to 60 percent, while the share of profits has been declining (now slightly lower than its pre-pandemic average). Unlike in other countries, unit profits have declined since 2021Q4. While wage formation since 2022Q1 has taken a more backward-looking element compared to the previous period, with a larger contribution of the unexplained component, the risks that this could lead to a wage-price spiral appear low. First, inflation expectations, a key determinant of wage growth, are low and anchored. Second, with inflation projected to stabilize, purchasing power is expected to recover, limiting wage pressures. Third, the contribution from profit margins to domestic inflation has decreased, while firms’ margins remain under pressure from the strong franc and lackluster growth in trading partners. As a result, firms do not have large buffers to accommodate significant wage increases. Finally, labor markets have started to adjust to the cyclical conditions, with unemployment gradually increasing and vacancies declining, which would further limit the risk of rising wage pressures.

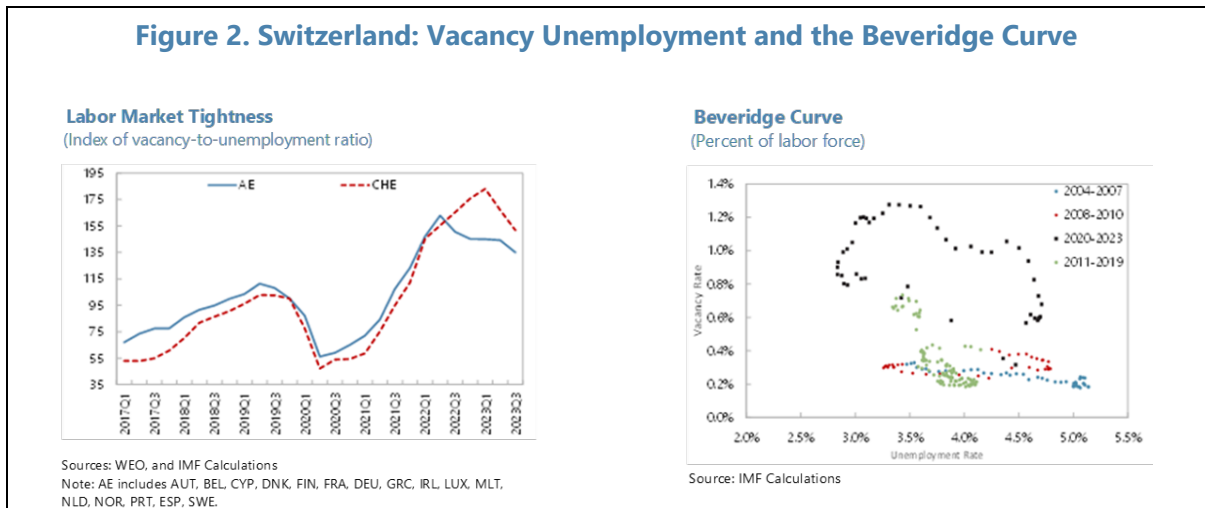
Figure 1. Switzerland: Wage, Profits and Unit Labor Costs



B. Beveridge Curve Dynamics and Mismatches

5. Switzerland has experienced a significant tightening of the labor markets in the post-pandemic period. As in other advanced economies, unemployment declined while vacancies increased, indicating widespread difficulty in recruiting workers amid a large rebound of aggregate demand (IMF, 2022). Recently, with a softening of economic activity, the vacancy rate declined, and the unemployment increased, but remain above and below the pre-pandemic level, respectively.

Figure 2. Switzerland: Vacancy Unemployment and the Beveridge Curve

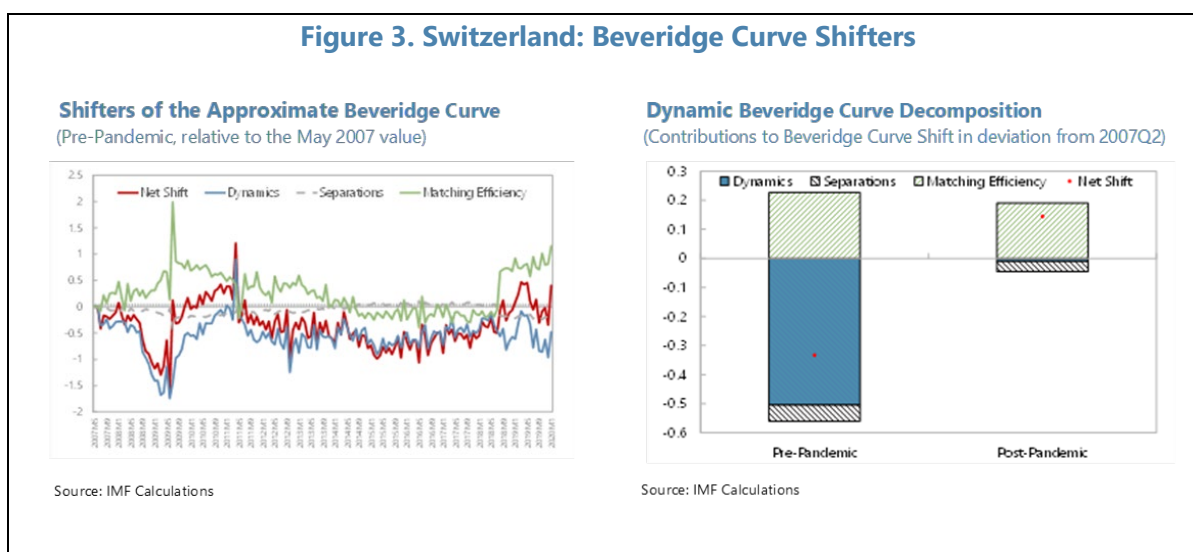


6. The Beveridge Curve has shifted outward. The Beveridge Curve (BC), the graphical representation of the inverse empirical relationship between the unemployment and the job vacancy rates, shifted outward after the pandemic. As unemployment declined, the BC also steepened somewhat, indicating that recruiters started to post more vacancies for the same rate of unemployment. Traditionally, movement along the BC is considered to occur over the business cycle, while shifts of the curve are associated with structural changes in the labor market (i.e., an outward

shift suggesting less efficient matching). Pinning down the exact causes of the BC shift is difficult, but structural factors related to somewhat less efficient labor markets are possible explanations.

7. A decomposition of the shifts in the BC suggests some decline in matching efficiency.

Ahn and Crane (2020) propose a simple method to decompose the shift of the BC (Appendix). The BC shift, according to their model, can be separate into: i) changes in unemployment (“Dynamics”), which lead to a downward shift of the curve since higher unemployment requires fewer job vacancies; ii) changes in the probability of job separations (“Separations”), where a higher value requires higher vacancies in equilibrium; and iii) variations in labor market matching (“Matching Efficiency”), where lower matching requires higher vacancies.² For Switzerland, the decomposition from these three shifters (normalized at their value in the quarter before the global financial crisis), reveals that on average, before the pandemic, movements in unemployment and job separations contributed to shift the BC downward while movements in matching efficiency contributed to a shift in the opposite direction, with the overall BC shifting downwards. In the post-pandemic period, movement in matching efficiency has contributed, on average and almost entirely, to an upward shift in the BC. The most recent rise in unemployment is thus contributing to offset this movement, shifting the empirical BC downward.³

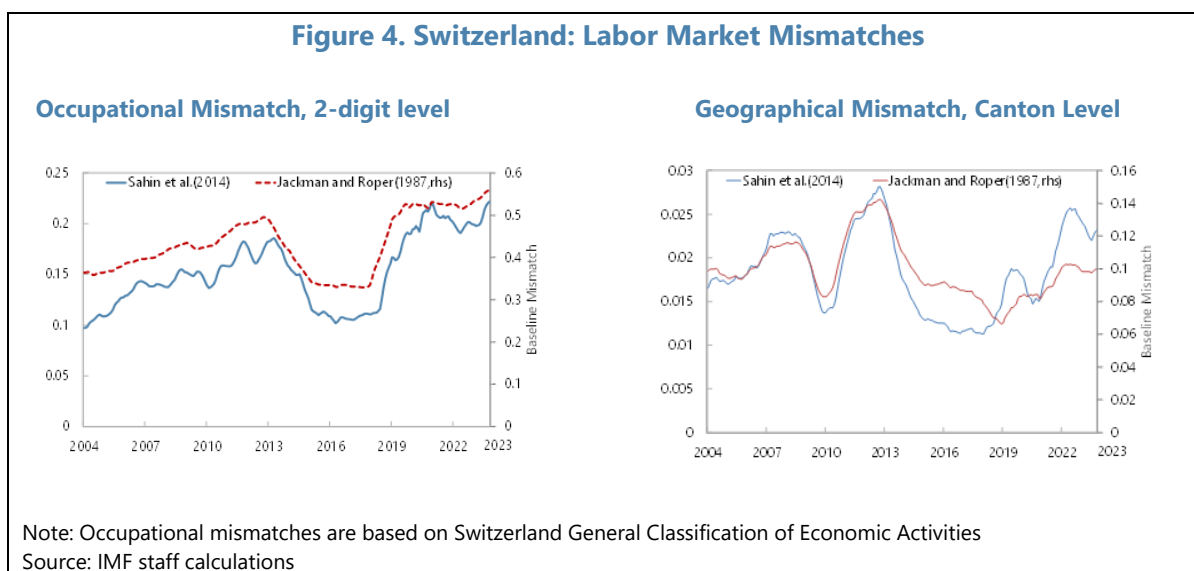


8. There is some evidence of increased labor-market mismatches in Switzerland. Şahin et al. (2014) propose a method for assessing labor-market mismatches. Their approach revolves around the concept of labor markets being divided into regional and occupational segments. In certain markets,

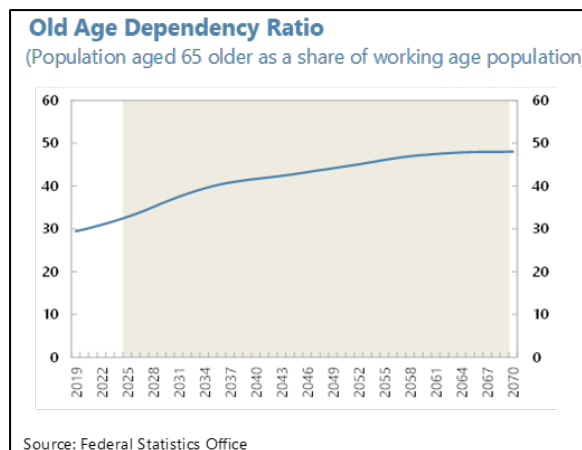
² The concept of matching efficiency in labor markets refers to the effectiveness with which job vacancies are filled by suitable candidates. This efficiency can be influenced by various factors, including the availability and accessibility of job-related information, the mobility of the workforce, and the relevance of job seekers' skills to the job vacancies. Matching efficiency is often analyzed within the context of the matching function, a mathematical representation that describes the relationship between the number of vacancies, the number of job seekers, and the number of matches that occur within a given period.

³ For sake of exposition, the post-pandemic dynamic of the shifters is shown as average contribution on the right chart only.

there could be an excess of job openings compared to the number of job seekers, while in others, the reverse might be true. We build two indices for Switzerland at the regional and occupational level based on Sahin et al. (2014) and compare the results with a similar index (“baseline mismatch”) based on Jackman and Roper (1987).⁴ Three main results stand out: first, while the indices co-move, on average, there appears to be a higher fraction of job losses due to occupational mismatches; second, both measures of mismatches have trended upwards in the aftermath of the global financial crisis, and especially since 2018; third, there seems to have been a further increase after the pandemic, especially for occupational mismatches. Overall, the results suggest that matching efficiency in the labor market somewhat deteriorated in Switzerland before the pandemic, with the pandemic also leading to a more pronounced mismatch, particularly at the occupational level.



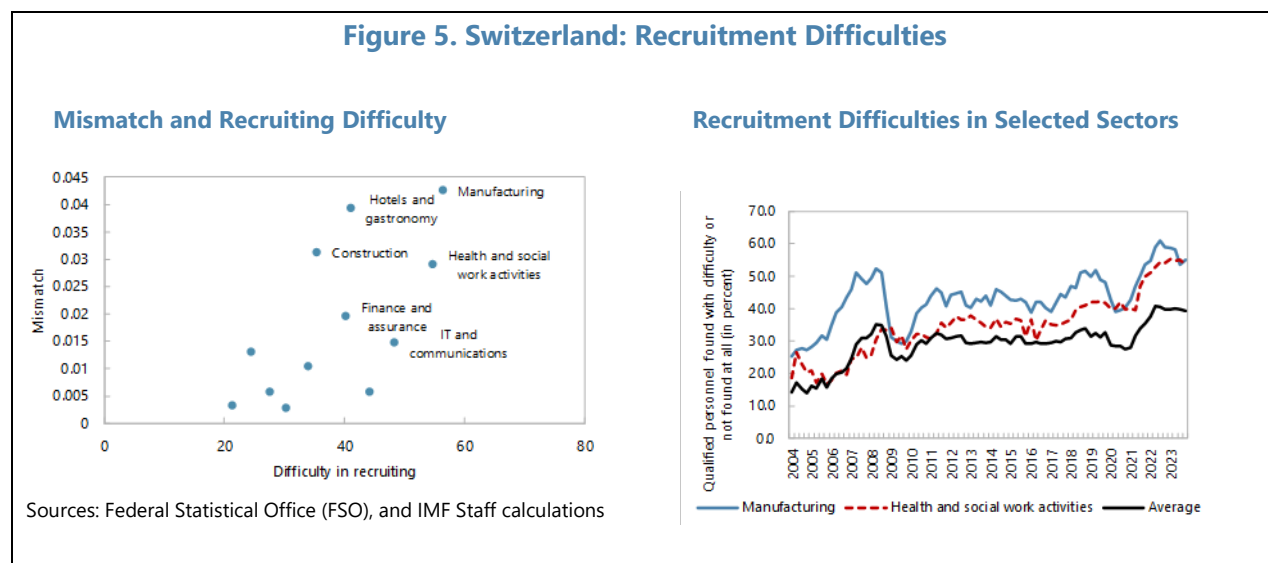
9. At the same time, Switzerland is experiencing higher recruiting difficulty amid adverse demographic trends. There is evidence of greater difficulty recruiting in occupations that have a higher level of skills mismatch. While this can be partly explained by a post-pandemic surge in labor demand, the pandemic also exacerbated difficulties in recruiting in some contact-intensive industries due to challenging working conditions (hotel and accommodations, health care). It is noteworthy that recruitment difficulties have crept up over the past decade across industries; these are likely to worsen over time due adverse demographic trends and skilled



⁴ The index of Sahin et al. (2014), based on an aggregate Cobb-Douglas function of unemployment and vacancies, calculates the fraction of hires lost to due to the mismatches, while index of Jackman and Roper (1987) is more related to measuring the proportion of labor in the wrong sector.

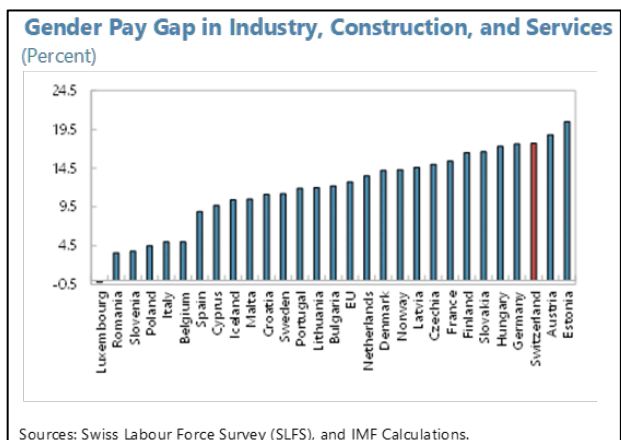
workers leaving the labor market—common across advanced economies. According to the latest population projections by the Swiss Federal Statistics Office, in a baseline scenario, the old age dependency ratio will deteriorate from 30 to about 50 percent by 2070. A rapid increase in the population of retirees is projected over the next decade, while the share of young employees will not be sufficient to replace them. In the next section we explore some options for addressing existing and emerging skill shortages and mismatches by increasing labor force participation of under-employed workers.

Figure 5. Switzerland: Recruitment Difficulties



C. Options for Addressing Skill Shortages and Mismatches

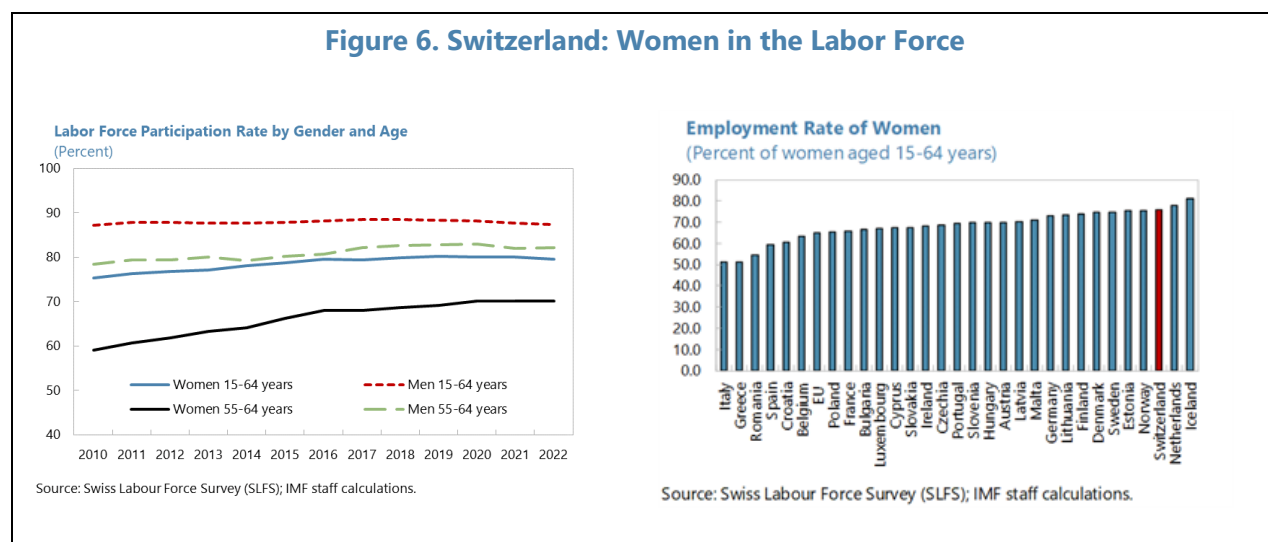
10. The labor-market participation rate of women is high overall, but this reflects a high incidence of part-time work. The labor force participation rate of women has been increasing over time and the gap with the rate for men has been shrinking. The participation rate of working age women in Switzerland has increased from 75 percent in 2010 to around 80 percent in 2022. The employment rate of working-age women in Switzerland stands at around 80 percent and is the third highest among European countries. However, a high proportion of employed women, around 60 percent, is in part-time jobs. Consequently, the gender pay gap in full-time equivalent employment rates is high when compared to other European countries. High part-time work arrangements also have a long-term impact on careers and pensions of women. Part-time jobs offer less favorable employment conditions in terms of social security, access to continuing education, and career progression. Higher activity rates of women would therefore raise equity, support incomes and ease labor shortages.



11. Changes in tax benefits and incentives might help boost female full-time labor participation. Following a Parliament request, the Federal Council has submitted a comprehensive legislative reform proposal to move from joint to individual taxation both at the federal and the cantonal level. Joint taxation generally involves higher marginal tax rates for second earners in married couples, often the female partner, compared to individual taxation. Given that second earners in married couples display higher responsiveness to marginal tax rates than first earners, switching to individual taxation is likely to increase employment incentives for second earners and hence the labor supply.

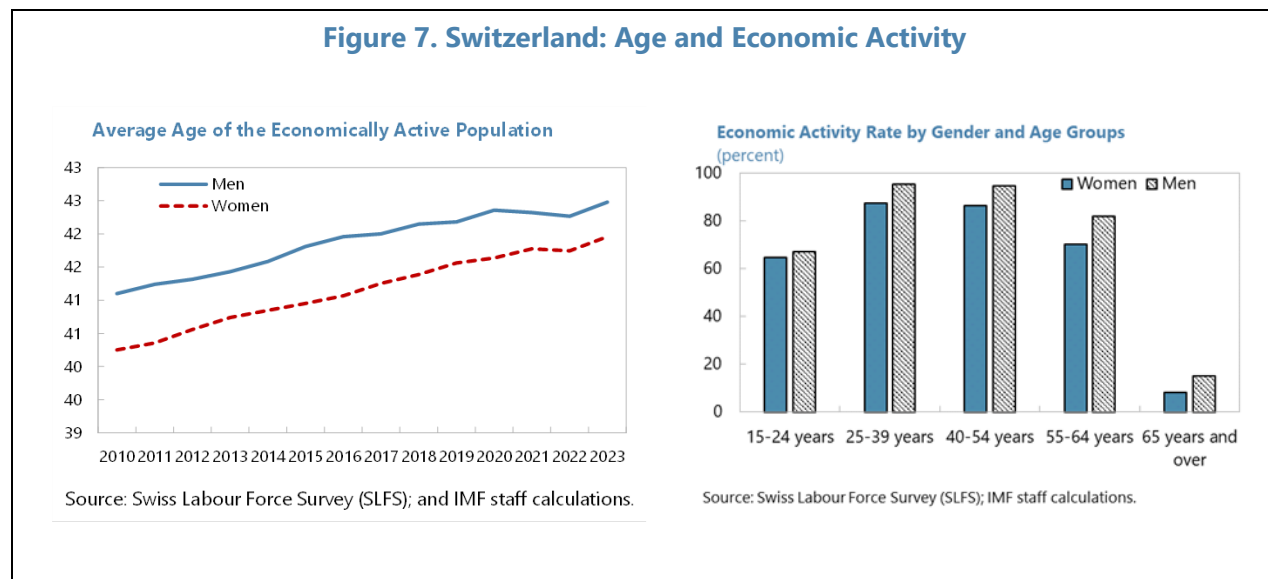
12. High childcare costs create disincentives for work. There is a large gap in the use of childcare between low- and high-income households. According to the OECD Family Database, just 20 percent of children aged 0–2 years from lower-income households attend childcare compared to 60 percent from higher-income households. Policies have been developed to reduce high childcare costs, including increasing the childcare deduction from federal personal income tax. Since January 2023, the childcare costs deduction has been increased from CHF 10,100 to now 25,500 for federal direct tax purposes, with a tax deduction of CHF 6,700 per child irrespective of declared childcare costs. However, given that more than 40 percent of Swiss families do not pay federal income taxes, this reform is likely to have a relatively limited impact, especially for low-income households. Increasing the supply of childcare and providing target support, including fee reductions, childcare benefits, or tax credits might help improve childcare affordability and increase participation, especially of women.

Figure 6. Switzerland: Women in the Labor Force



13. The average age of economically-active individuals is increasing but the activity rate remains low among older aged groups. The average age of people actively engaged in economic activities increased by around 2 years between 2010 and 2023, reflecting higher participation of older people in the labor market. However, the economic activity rate remains much lower among older-aged groups, declining from 70–80 percent among the 55–64 year-old group to 10–20 percent in the age group of 65 years and older. The unemployment rate for older workers (age 55–64) is 3.9 percent,

slightly lower than 4.1 percent of prime-age workers (age 25–54).⁵ But once unemployed, it is more difficult for older workers to reintegrate into the job market (OECD 2024).



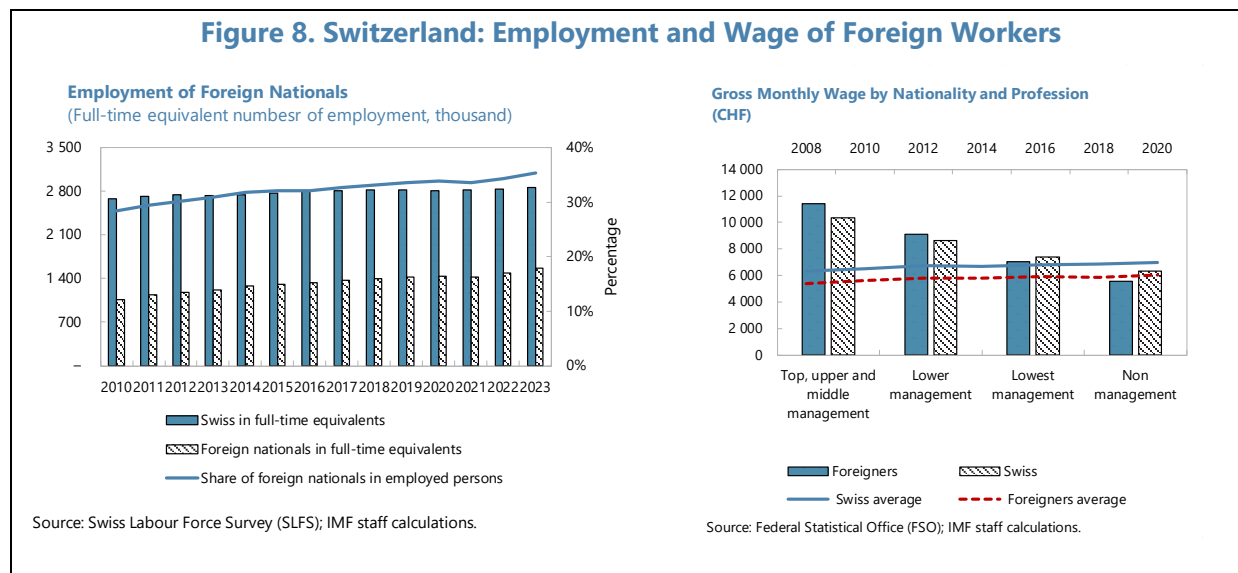
14. Increasing participation of older workers would allow for retention of experience and expertise and help improve labor dynamics facing the structural change of population aging. In order to promote re-integration of jobseekers aged 50 years or over, targeted professional advice and training services have been created. A longer grace period to draw unemployment insurance benefits is also granted for those aged over 55 years. Lengthening working lives may also be achieved through incentives within the pension system, including the flexibility to combine retirement and work. Other options include increasing the retirement age and aligning pension incentives (e.g., by reducing progressivity in second-pillar contribution rates). The ongoing increase of the retirement age for women to 65 years is an important step. However, early retirement in the first pension system pillar is still possible, possibly starting from age 63 years, and further policies could be taken to incentivize older individuals to participate in the labor market.

15. Immigration has contributed to Swiss labor force growth and to coping with demographic changes. Switzerland remained among one of the most attractive OECD countries for skilled migrants in 2023 (OECD 2024). A strong labor market and high wages have helped attract and absorb skilled workers from abroad. The share of employed persons with foreign nationality has been increasing over time, and the gap in full-time equivalent numbers of employment between the foreign workers and Swiss nationals has been narrowing. However, the unemployment rate of workers with a migration background has been persistently higher, and immigrants work disproportionately in non-management jobs, with an average income lower than Swiss nationals. Active policies to attract, retain,

⁵ Data as of 2022.

and integrate migrants into the labor force,⁶ could therefore contribute to addressing labor shortages and skills mismatches, particularly in the medium-term.

Figure 8. Switzerland: Employment and Wage of Foreign Workers



⁶ This might include language and citizenship training, matching migrants' skills with job opportunities (e.g., routinely advised job opportunities, tailored job platforms for migrants based on their needs and experiences, and private sector outreach programs), and providing targeted assistance with housing, access to health care and schooling. The authorities have planned a package of measures to better integrate refugees into the labor market, including improving qualifications reorganization, more targeted services provided by regional employment centers, and strengthening cooperation between the federal and cantonal governments on integration programs.

Appendix I. Beveridge Curve Decomposition

To better understand these dynamics, we decompose the shift of the BC using the method of Ahn and Crane (2020). The method entails two steps. In a first step, we estimate the parameters of a matching function, which represents the way new hires are formed, based on the following formula:

$$H_t = \sigma_t U_t^{1-\alpha} V_t^\alpha \quad (0.2)$$

where H_t is the flow of new hires, U_t and V_t are the unemployment and vacancy rates (normalized by the labor force), α is the elasticity of the matching function and σ_t is the time varying matching efficiency. From (1.1) we obtain the job-finding probability given by:

$$f_t = \sigma_t \left(\frac{V_t}{U_t} \right)^\alpha \quad (0.3)$$

which we then use to obtain the two parameters of the matching function. In the second step, these parameters are used to decompose a linearized version of the BC around its steady state into three components that act as “shifters” of the intercept of the curve:

- Matching efficiency: conditional on a given unemployment path, lower matching efficiency requires more vacancies to offset lower hirings, thus shifts the curve up;
- The job-separation probability: although less intuitive, a higher job separation will also shift the curve up, as higher inflows into unemployment, conditional on a given unemployment path, require more vacancies to absorb extra workers;
- Out-of-steady unemployment dynamics: when unemployment rises, the curve will shift down as less vacancies are needed due to low job finding rate.

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REAL ESTATE MARKETS AND VULNERABILITIES: THE CASE OF SWITZERLAND¹

This Selected Issues Paper studies the recent developments and potential vulnerabilities of Switzerland's real estate market from the perspective of households, real estate companies, banks, and non-bank financial institutions. While real estate prices in Switzerland adjusted in 2023, the adjustment has been more modest than in peer countries. Despite high housing costs and mortgage debt, household balance sheets remain liquid and robust. Real estate companies face challenges, having experienced declines in property value and interest rate coverage ratios due to higher interest rates. The banking system is heavily exposed to the real estate market, mostly through mortgages; direct exposure to commercial real estate is limited. Non-mortgage exposure through credit lines and corporate bonds is difficult to assess due to data limitations. Non-bank financial institutions, including pension funds and insurance companies have nontrivial exposures to real estate assets. Overall, data gaps limit a comprehensive view of direct and indirect exposures including to cross border markets and interlinkages across financial institutions.

A. Recent Developments

1. Real estate price growth in Switzerland moderated in 2023 but with different trends across segments. Owner-occupied properties continued to experience increases in prices (by 3 percent for apartments and by 1 percent for single family houses), albeit at a moderated pace, while prices of residential investment properties declined by 2 percent. Commercial real estate (CRE) prices declined by 4 percent for office and industrial spaces and stagnated for retail space. Overall, the price adjustments—between -4 percent and 3 percent across all segments—are smaller than elsewhere in Europe. From a longer-term perspective, price increases since 2007 are aligned with those in other advanced economies.

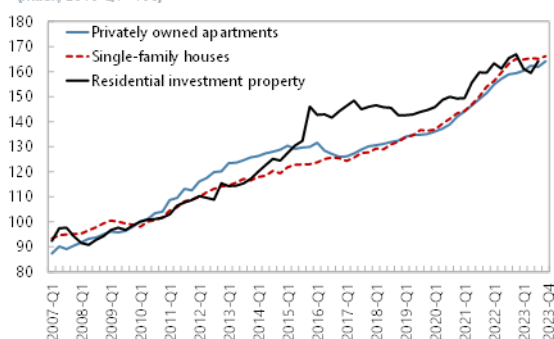
2. The housing market is tight, driven by ongoing demand pressures and stagnant supply. As of 2023, vacant dwellings constituted only 1.2 percent of the total dwelling stock, one of the lowest vacancy rates among OECD countries. Over the last decade, the Swiss population grew by 10 percent, one of the highest growth rates among European countries. The supply of housing did not match demand pressures, with declining building production and significant reduction in new building permits for residential dwellings since a peak in 2018. Various models indicate an overvaluation of house prices by 15 to 40 percent,² but these estimates may be biased upwards due to challenges in accounting for supply constraints ([Saiz, 2010](#); [Baum-Snow and Han, 2024](#)).

¹ Prepared by Zhao Zheng. The author would like to thank S. Pelin Berkmen, Salvatore Dell'Erba, Mark Horton, and seminar participants at the FINMA and the SNB for helpful comments and suggestions.

² See [Swiss National Bank 2023 Annual Report](#).

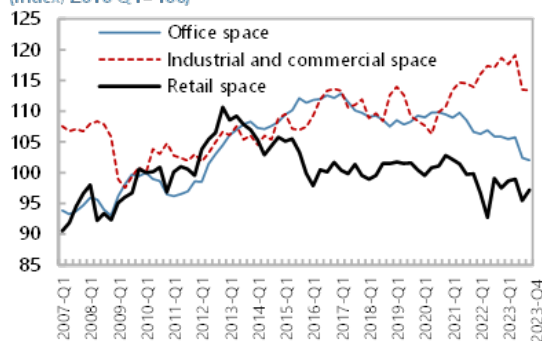
Figure 1. Switzerland: Real Estate Price Developments

Residential Property Transaction Prices
(Index, 2010 Q1=100)



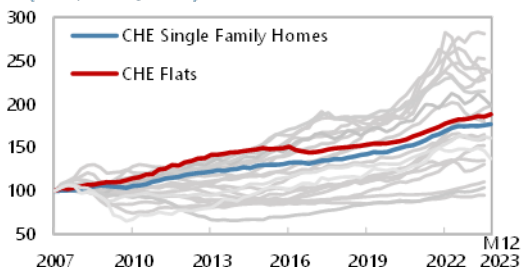
Sources: Swiss National Bank; Wuest Partner; IAZI; and IMF staff calculations.

Commercial Real Estate Asking Prices
(Index, 2010 Q1= 100)



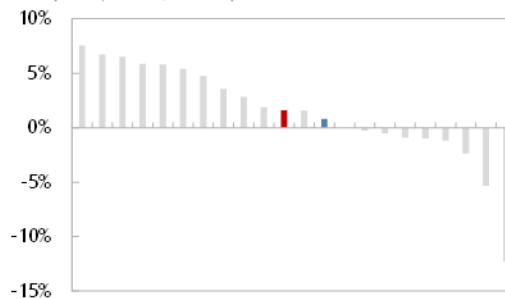
Sources: SNB; Wuest Partner; and IMF staff calculations.

House Prices In Advanced Economies
(Index, 2007 Q1= 100)



Note: Shown in the chart are selected EU members and other advanced economies, including AUT, AUS, BEL, CAN, CHE, CYP, DEU, DNK, ESP, FRA, GBR, HRV, HUN, ITA, LTU, LUX, NLD, NZL, SWE, SVN, SVK, and USA.

House Price Changes Since 2022
(Index, 2022Q4 = 100)



Sources: BIS; and IMF staff calculations.

3. New mortgage origination has slowed. The volume of origination declined by 2.9 percent in 2023. The main source of the slowdown came from mortgages for households, which represent the largest sector in terms of market share, with decreases of 9.8 percent for owner-occupied properties and 6.8 percent for rented out residential properties. Conversely, origination volume for residential property mortgages to company borrowers experienced a growth of 16.7 percent.³ The annual growth rate of the stock of mortgages, which account for around 85 percent of lending by all domestic banks, fell from 3.5 percent in 2022 to 2.5 percent in 2023. Compared with other European countries, the adjustment in Swiss mortgage growth remains modest (Figure 3).

³ The 16.7 percent growth was mostly driven by an increase in the size of jumbo mortgages to companies. Although there was not a notable rise in the number of residential property mortgages for companies or the median size of mortgages, the size of the largest mortgages for companies, denoted by the 90th percentile, experienced an 18 percent increase.

Figure 2. Switzerland: Vacancy Rate and Housing Construction

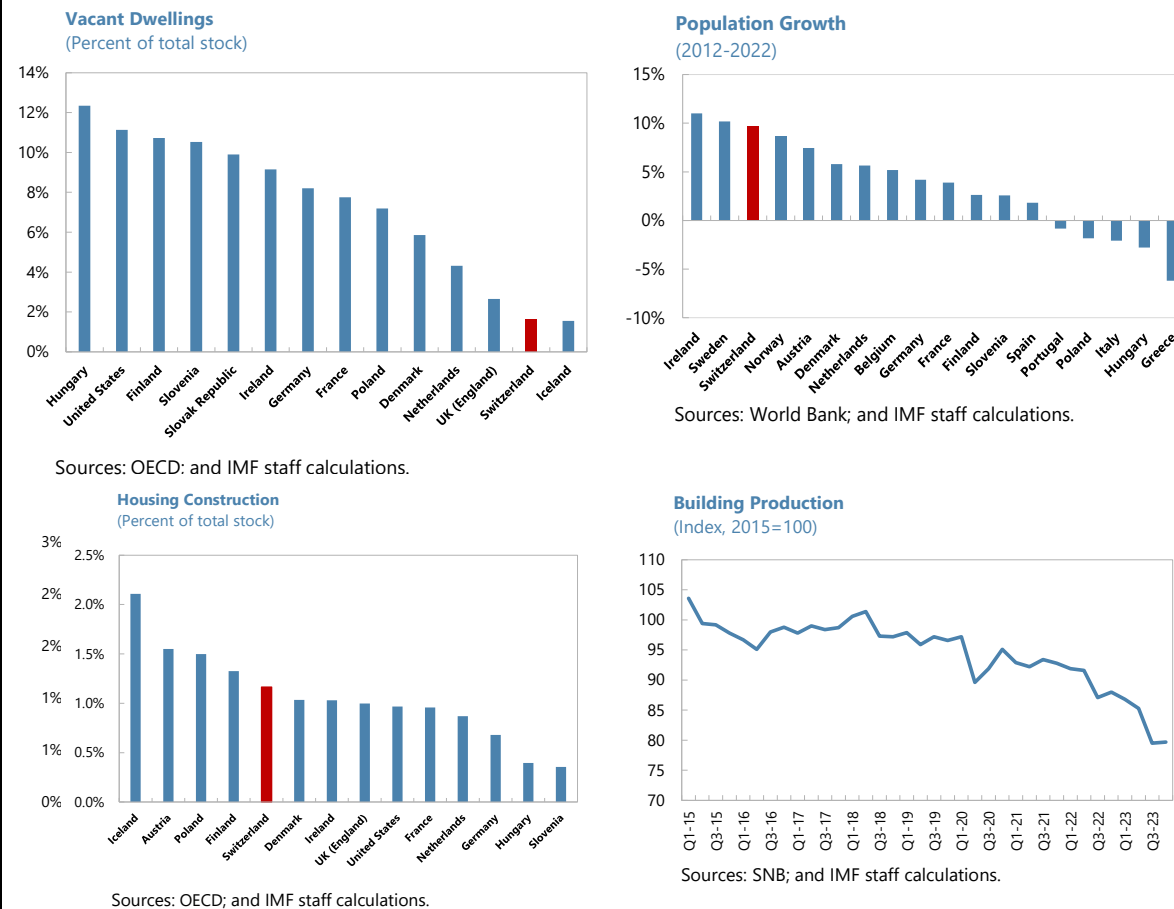
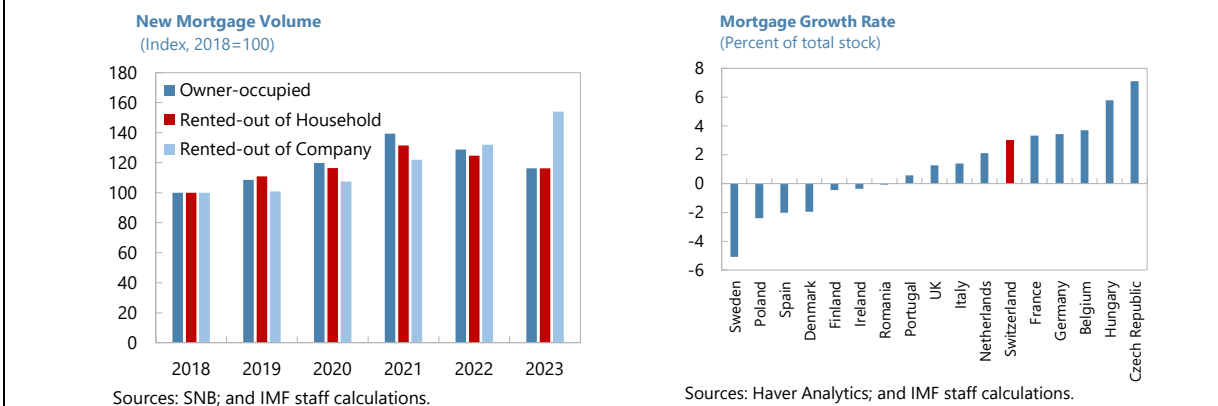


Figure 3. Switzerland: Mortgage Price and Volume



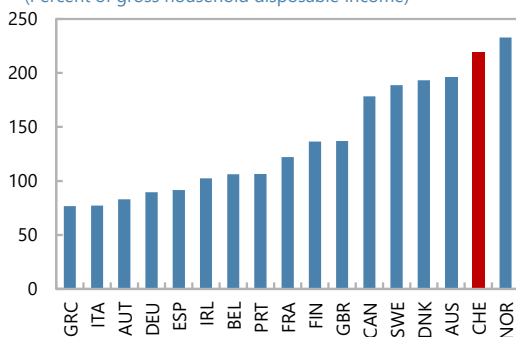
B. The Owner-Occupied Residential Real Estate Market

4. The level of household debt in Switzerland is high, but balanced by robust and liquid assets holdings. Switzerland has a higher household debt-to-income ratio compared to many other countries, predominantly due to mortgage debt. Given high prices of real estate, many Swiss households take on substantial mortgage debt to finance home purchases. Notably, Swiss law does not mandate the amortization of mortgages below two thirds of the underlying property value, contributing to the high debt level (Koeniger, Lennartz, and Ramelet, 2022). At the same time, Swiss households have high net wealth relative to their disposable income, which acts as an important mitigating factor against potential risks associated with elevated debt levels. Two additional characteristics further mitigate risks. First, average household mortgage leverage declined from CHF 0.42 per CHF 1 of real estate assets in 2011 to around CHF 0.36 in 2022. Second, households maintain a significant amount of liquid financial assets. The ratio of cash and deposits to mortgage debt rose from 95.4 percent in 2011 to 101.2 percent in 2022. This implies that, collectively, Swiss households could immediately cover their mortgage obligations with liquid assets. Overall, despite the high debt-to-income ratio, the balance sheet of Swiss households remains sound and liquid.

Figure 4. Switzerland: Housing and Household Balance Sheet – Cross-Country Comparison

Total Household Debt, 2022

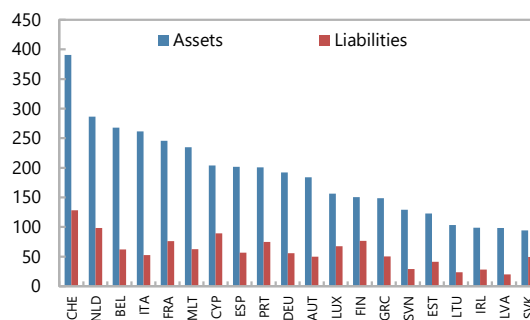
(Percent of gross household disposable income)



Sources: Haver Analytics; and IMF staff calculations.

HH&NPISH Financial Assets and Liabilities, 2022

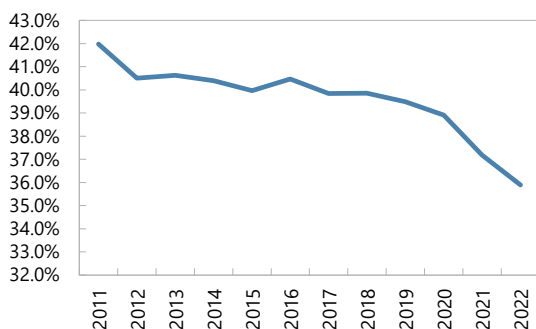
(Percent of GDP)



Sources: Haver Analytics; and IMF staff calculations.

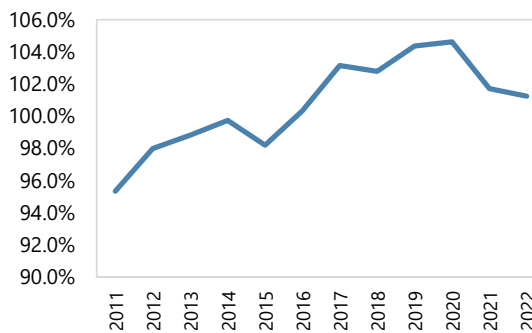
Notes: HH&NPISH represents households and non-profit institutions serving households

Mortgage / Real Estate Asset



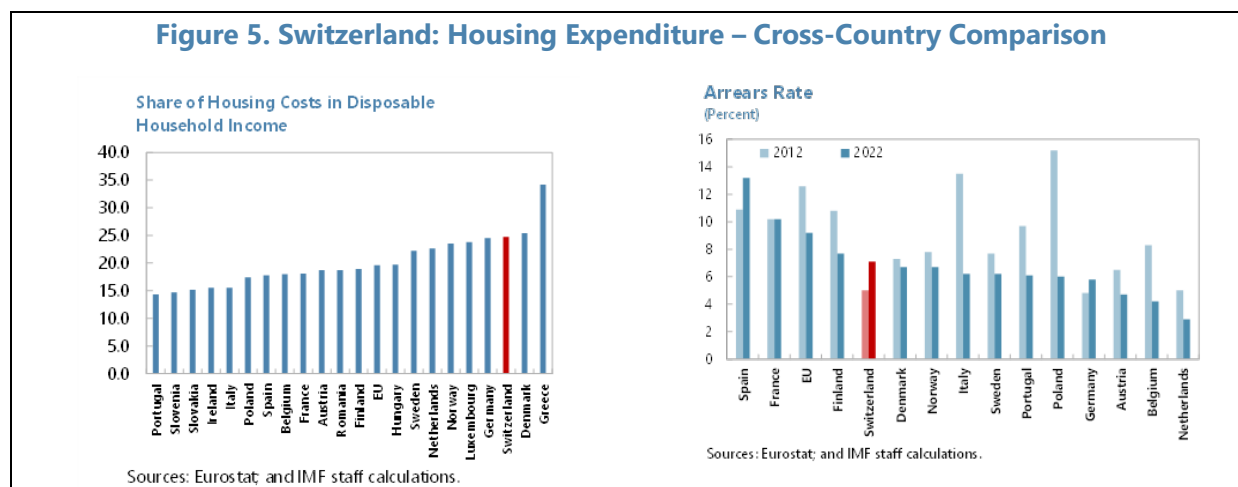
Sources: SNB; and IMF staff calculations.

Cash and Deposits / Mortgage



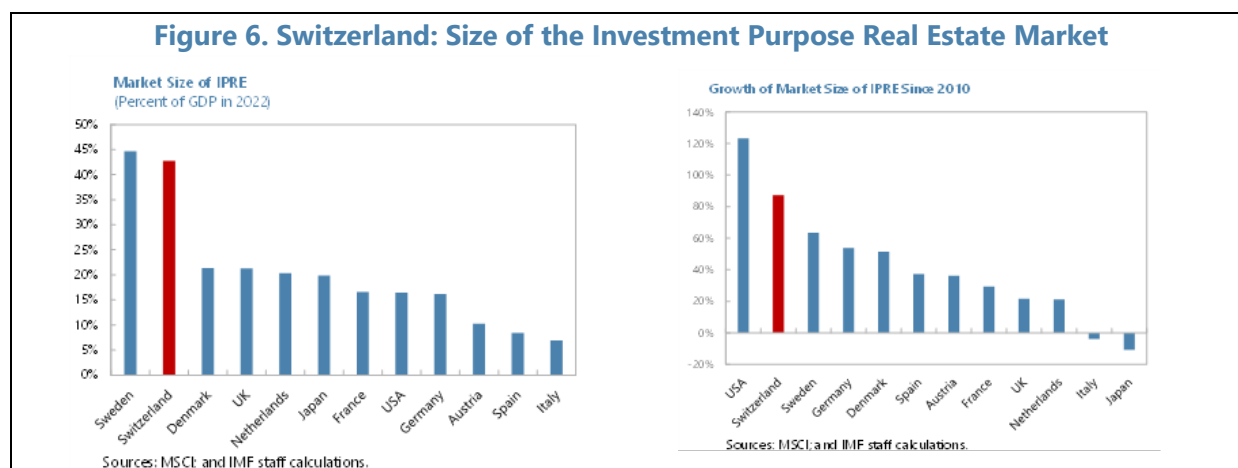
Sources: SNB; and IMF staff calculations.

5. However, there are some tensions in household cashflows. Housing expenditure as a share of income is high. In 2022, Swiss households allocated 24.7 percent of their disposable income to housing-related costs, exceeding the EU average of 19.6 percent. This highlights the challenge of housing affordability. While the arrears rate related to housing⁴ is lower than the EU average, it has increased from 5.0 percent in 2012 to 7.1 percent in 2022, signaling a growing financial strain due to housing expenses.

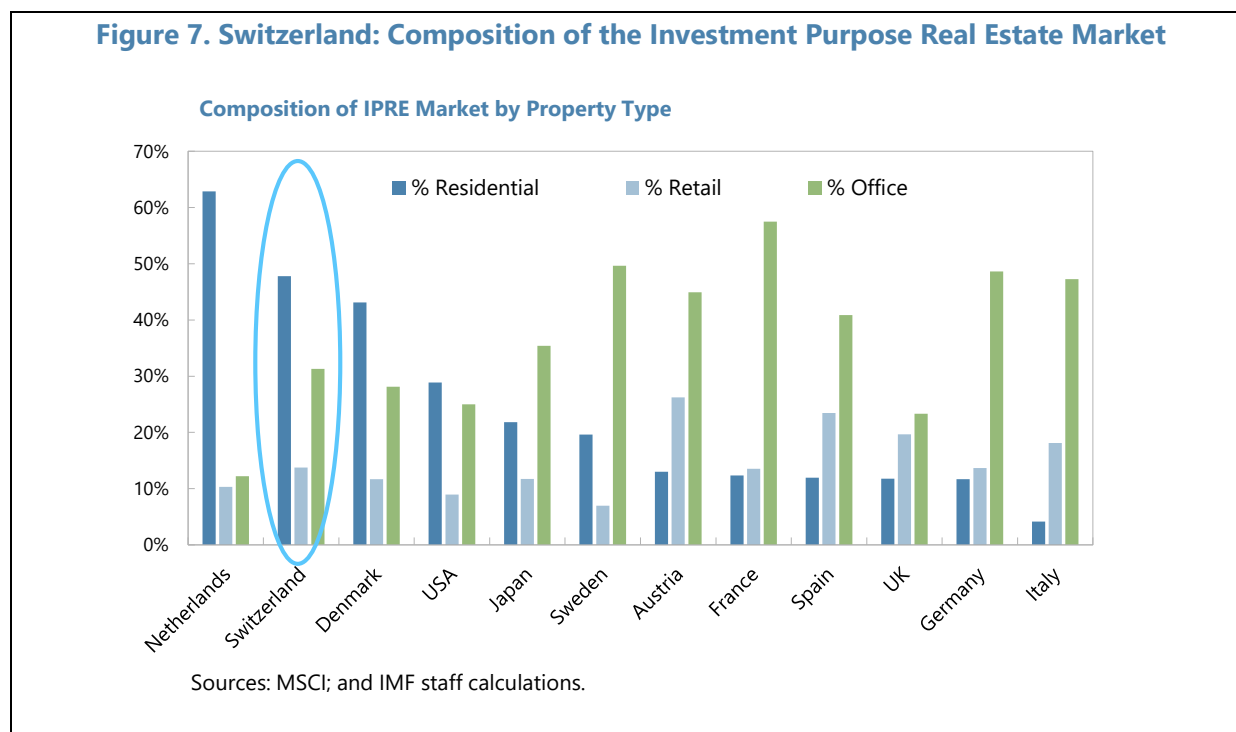


C. Investment-Purpose Real Estate Market

6. The investment-purpose real estate (IPRE) market is large and growing in Switzerland. The estimated size of the professionally-managed real estate market was 43 percent of GDP in 2022, ranking second among major advanced economies. Since 2010, the estimated market size has grown by 87 percent, also second among major advanced economies. Within the IPRE market, residential properties contribute to 48 percent of the total market size, followed by office properties (31 percent) and retail properties (14 percent). The size of IPRE market suggests significant macro relevance and importance to financial stability.



⁴ Including mortgage, rent, utility bills or hire purchase.

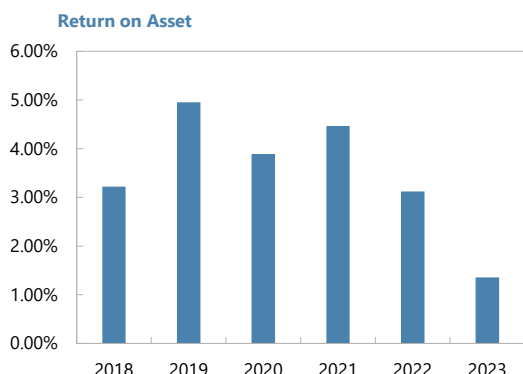
Figure 7. Switzerland: Composition of the Investment Purpose Real Estate Market

7. Profitability of IPRE firms declined in 2023 because of the devaluation of IPRE properties.⁵

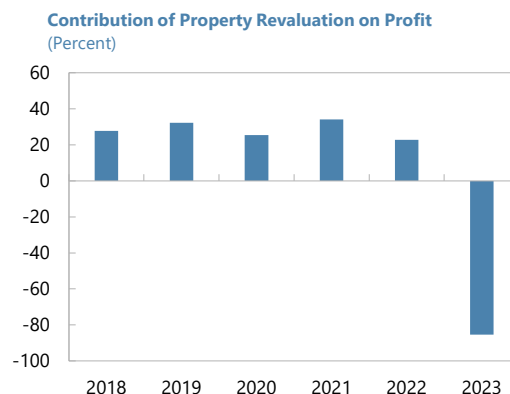
In the first half of 2023, CRE companies faced a decline in return on asset (ROA) from above 3 percent in 2022 to around 1 percent in 2023 H1. The decline was driven by devaluation of real estate properties on their balance sheets, likely the result of higher interest rates ([Amaral et al., 2024](#)). Between 2018 and 2022, property revaluation gains, on average, contributed to 28 percent of operating profits. However, in the first half of 2023, revaluation losses reached as high as 85 percent of operating profits. These losses are noteworthy even when compared to total rental income. From 2018 to 2022, property revaluation gains accounted for 48.1 percent of total rental income, whereas in the first half of 2023, revaluation losses amounted to 27.7 percent of the total rental income. Additionally, the revaluation loss constituted 0.5 percent of the total book value of assets. In contrast, between 2018 and 2022, the revaluation gain from properties was positive, averaging about 1.7 percent of the total book value of assets every year.

⁵ Due to data limitations, the analysis in this section is based on the annual reports of the four largest listed IPRE companies in Switzerland from 2018 to 2023 H1. As of the end of 2023, the combined market value of these top four CRE companies amounted to over 65 percent of the value of all listed CRE companies in Switzerland. Additionally, the book value of assets managed by the leading four CRE companies represented approximately 4.5 percent of Swiss GDP in 2022. On average, residential properties constitute 20 percent of the properties managed by the four CRE companies, while office and retail properties make up the remaining 80 percent.

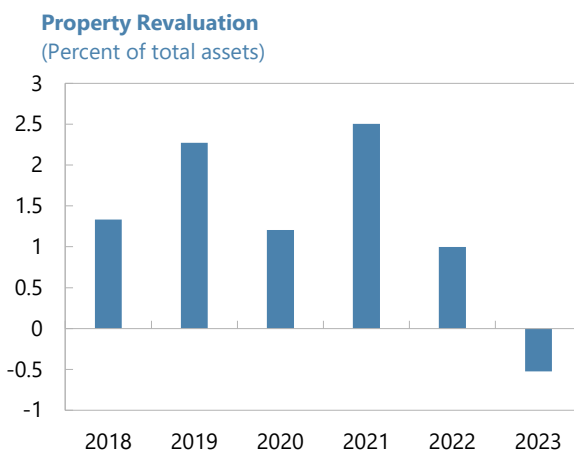
Figure 8. Switzerland: Market Valuations of Commercial Real Estate Companies



Sources: Real Estate Company Annual Reports, and IMF staff calculations.

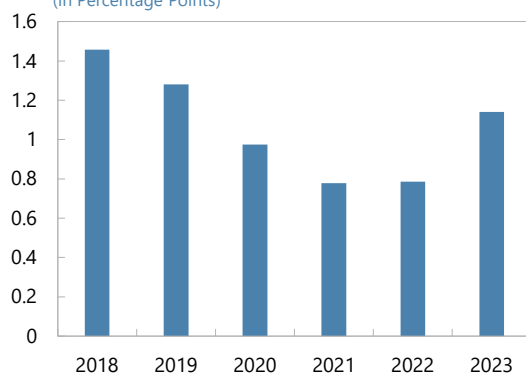


Sources: Real Estate Company Annual Reports, and IMF staff calculations.

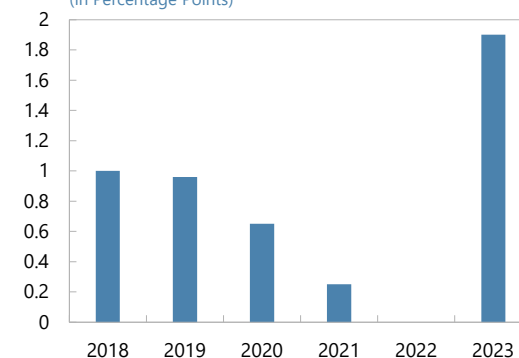


Sources: Real Estate Company Annual Reports, and IMF staff calculations.

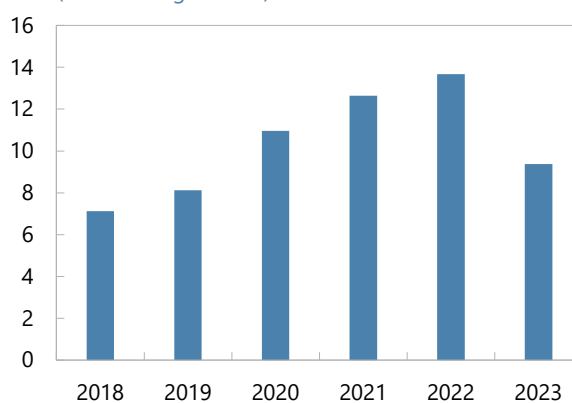
8. Higher interest expenses have added stress to IPRE firms’ cash flow. The increase in interest rates led to a significant increase in financing costs for IPRE companies and a decline in the interest expense coverage ratio. From 2018 to 2021, there was a 0.7 percentage point decline in the average interest rate paid on financial liabilities, representing the average cost of financing for both new and existing CRE debt. However, the average interest rate paid on financial liabilities has increased by 0.4 percentage points since 2022. Specifically, for newly-issued corporate bonds, the average interest rate surged from 0.25 percentage points in 2021 to 1.90 percentage points in 2023H1. Consequently, the interest-coverage ratio decreased from 13.7 to 9.4, over the same period. This indicates that in 2022, the average annual rental income could cover financial expenses for up to 13.7 years, but by 2023H1, it could only cover up to 9.4 years, highlighting increased risks to cash flow.

Figure 9. Switzerland: Financing Costs of Commercial Real Estate Companies**IPRE Firms: Average Interest Rate on Financial Liabilities**
(in Percentage Points)

Sources: Real Estate Company Annual Reports, and IMF staff calculations.

IPRE Firms: Average Interest Rate on Newly Issued Bonds
(in Percentage Points)

Sources: Real Estate Company Annual Reports, and IMF staff calculations.

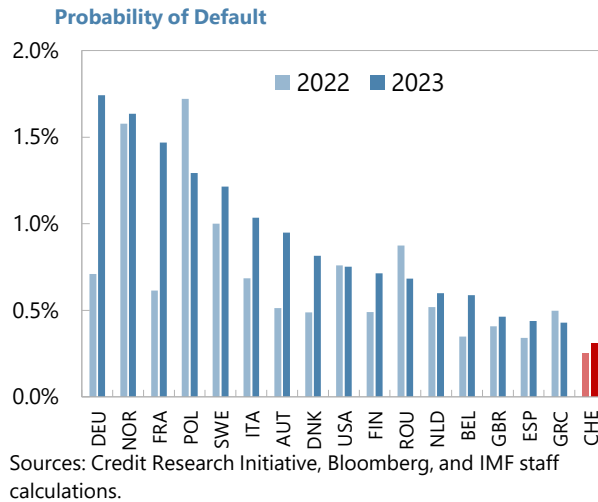
IPRE Firms: Interest Coverage Ratio
(in Percentage Points)

Sources: Real Estate Company Annual Reports, and IMF staff calculations.

9. Despite these pressures, the default probability of IPRE firms remains low. Estimated by the Credit Research Initiative (CRI) based on 16 risk factors,⁶ the forward-looking probability of default (PD) reflects the likelihood that a debtor may be unable to fulfill its financial obligations. Despite lower property values and higher interest costs, the average PD for all publicly-traded Swiss IPRE firms remains low compared to peer countries, despite the increase in 2023 (Figure 10).

⁶ The CRI model is built on the forward intensity model developed by [Duan et al. \(2012\)](#)

Figure 10. Switzerland: Probability of Default of Commercial Real Estate Companies 1/

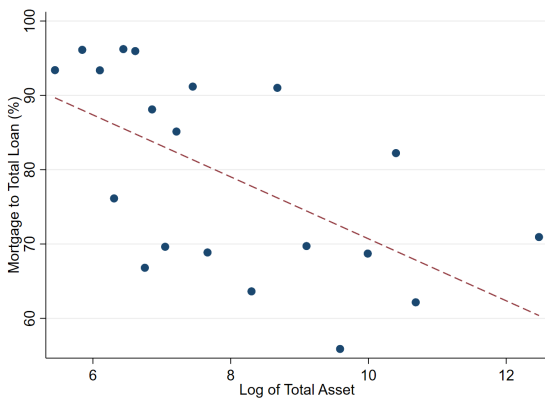


1/ Country level PD is calculated as the average across public CRE firms within the country. The firm level default prediction model from CRI is estimated based on both macro-financial variables and firm-specific variables.

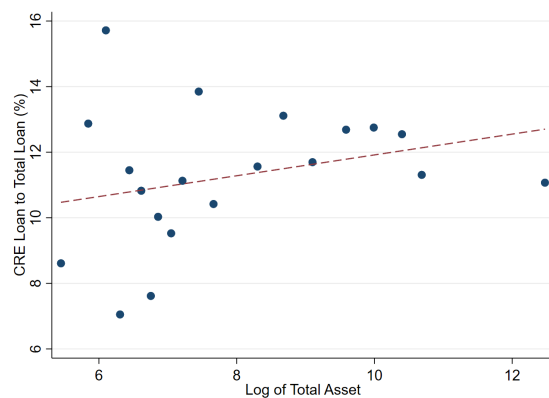
D. Financial Sector Exposures to Real Estate Markets

10. Banks have significant real estate exposures, but these are more limited for CRE. As of 2022, the mortgage-to-GDP ratio stood at 148 percent. Of these mortgages, 62.3 percent were for owner-occupied residential properties, 23.0 percent for investment purpose residential properties, and 14.7 percent for CRE. There is notable variation across banks, with smaller banks on average having higher exposures. Regarding CRE loans, certain smaller banks specialize in CRE lending, while others have only limited exposure.

Figure 11. Switzerland: Bank Size and Mortgage Exposures



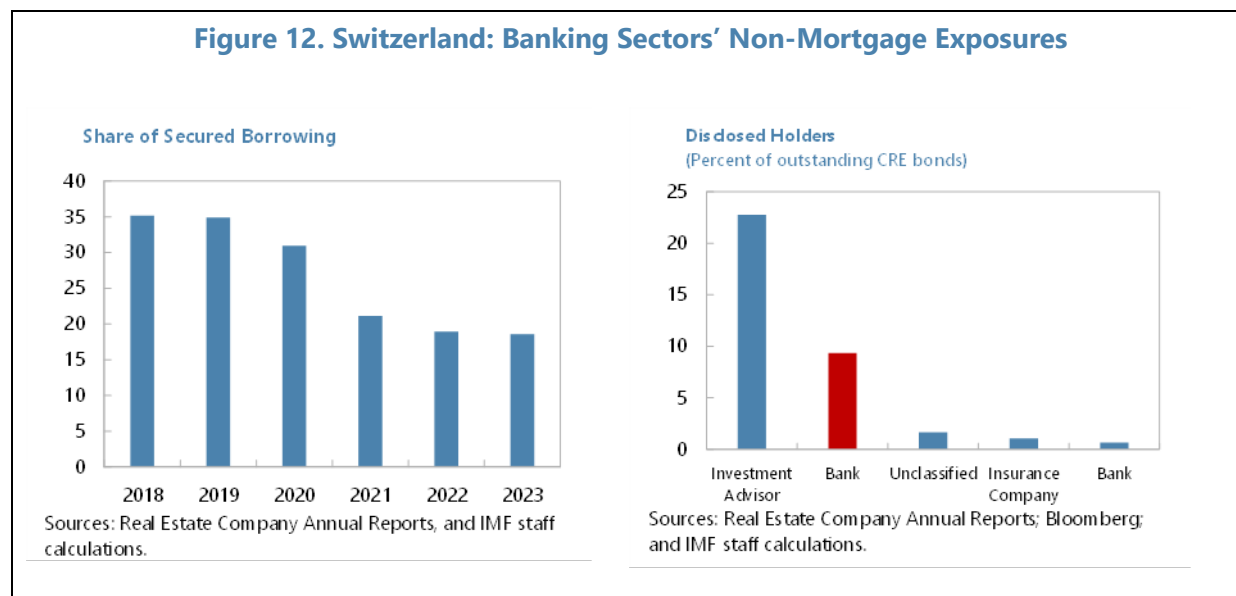
Source: Fitch Connect and IMF staff calculations.
Note: This chart plots the average share of loans conditional on banks' total assets.



Source: Fitch Connect and IMF staff calculations.
Note: This chart plots the average share of loans conditional on banks' total assets.

11. The declining share of secured mortgage borrowing by large IPRE firms adds pockets of risk. The share of secured mortgage borrowing for IPRE firms declined from 30 percent in 2021 to 15 percent in 2023H1, as IPRE firms have relied more on credit lines and corporate bonds. At the same time, banks hold more than 9 percent of corporate bonds issued by the largest four IPRE firms, making them the second-largest investor group according to disclosed information. It is difficult to assess the full extent of the banking sector's total exposure to real estate, including through non-mortgage lending such as credit lines and corporate bonds due to data limitations.⁷ Similar constraints apply to cross-border exposures, although direct exposures via mortgages are small.

Figure 12. Switzerland: Banking Sectors' Non-Mortgage Exposures



12. Insurance companies have relatively smaller exposures to real estate, but with substantial variations across insurance segments. In 2022, real estate properties constituted 9 percent of total assets managed by Swiss insurance companies, with mortgages accounting for another 7 percent. The resulting total real estate exposures of 16 percent of total assets is higher than the average of 7.5 percent among insurance companies in the EU.⁸ For life insurance companies, the most heavily invested in real estate, the share of investment in real estate properties is 14 percent. Within real estate properties, commercial real estate represents 13 percent of the portfolio. Health insurers hold a relatively higher proportion of commercial real estate at 31 percent. Some non-life and health insurers have high exposures, the share of commercial real estate exceeds 60 percent. In terms of mortgages, life insurers have the highest exposures, with an 11 percent share of total assets. In addition to direct exposures, indirect exposures through participations in real estate firms and investments in real estate funds are minimal, each accounting for less than

⁷ The SNB and FINMA decided to introduce a supervisory loan-by-loan dataset on banks' exposures to non-banks, with more than 90 percent coverage (as only the smallest banks in Switzerland are exempted).

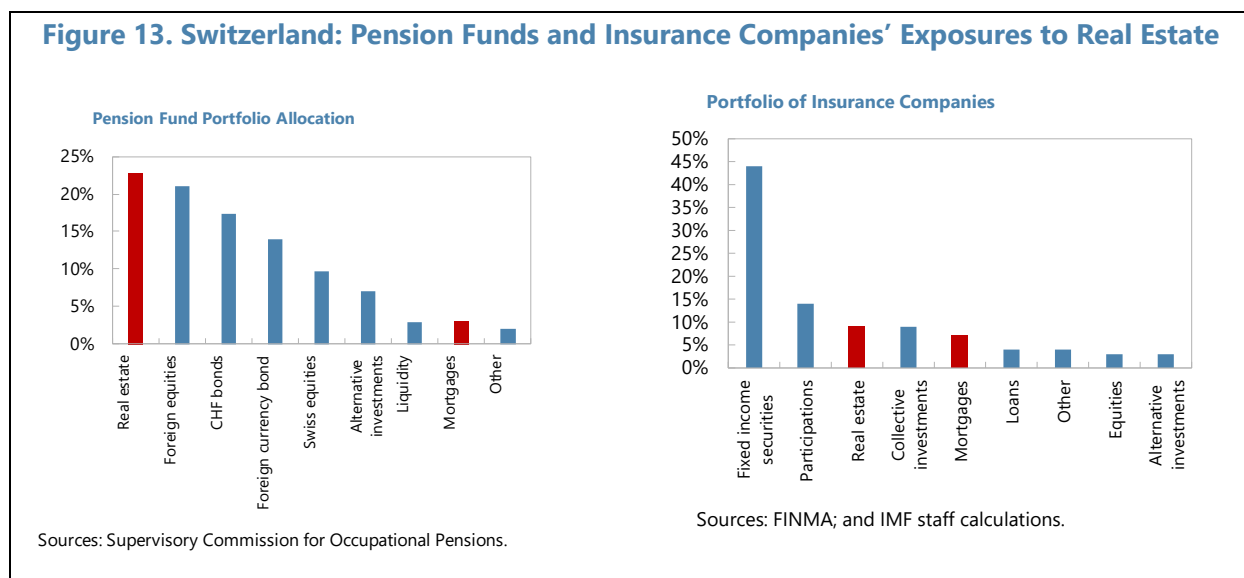
⁸ European Insurance and Occupational Pensions Authority.

1 percent. Overall, exposure to foreign real estate markets is low, with nearly all of the real estate portfolio located in Switzerland (98 percent).

13. Pension fund exposures to real estate are bigger but still much smaller than banks.

Swiss pension funds allocated 22.8 percent of total assets directly to real estate in 2022, with an additional 3.0 percent into mortgages. More specifically, domestic direct real estate holdings were 8.4 percent, unlisted collective investments were 7.0 percent, listed real estate funds were 3.5 percent, and real estate abroad was 3.9 percent.⁹ The resulting total real estate exposures were 25.8 percent, far exceeding the EU pension fund average of 7.3 percent.¹⁰ Other exposures to real estate (e.g., via equity and bonds) are less clear.

Figure 13. Switzerland: Pension Funds and Insurance Companies' Exposures to Real Estate



E. Conclusions

14. Price growth in Switzerland moderated in 2023 but with different trends across segments. Owner-occupied properties continued to experience increases in prices, albeit at a moderated pace, while residential investment properties and CRE saw declines. The housing market remains tight, with low vacancy rates, and prices have been supported by both demand pressures and stagnant supply, reflecting high population growth, and declining building production. With higher interest rates, new mortgage origination has slowed, but the adjustment has been more modest than in Europe.

15. Household debt in Switzerland is high, but risks are mitigated by strong and liquid assets. Switzerland's debt-to-income ratio is higher than that of many other countries, primarily due to mortgage debt. At the same time, Swiss households have high net wealth relative to their disposable income, which acts as an important mitigating factor against potential risks. In addition,

⁹ Swiss Supervisory Commission for Occupational Pensions 2022 Annual Report.

¹⁰ European Insurance and Occupational Pensions Authority.

households maintain a significant amount of liquid financial assets. However, there are some tensions in household cashflows, due to high housing expenditure as a share of income. While the housing-related arrears are lower than the EU average, there has been a modest increase in the past decade, suggesting growing financial pressures from housing expenses.

16. The size of the IPRE market is large and growing in Switzerland (43 percent of GDP in 2022). Since 2010, the market size of professionally-managed real estate has grown by 87 percent. Profitability of IPRE firms declined in 2023 because of the devaluation of IPRE properties, likely due to higher interest rates. At the same time, interest expenses increased, adding stress on IPRE firms' cash flows. In addition, the declining share of secured mortgage borrowing by large IPRE firms adds pockets of risks. Despite these pressures, default probabilities of IPRE firms remain low.

17. Banks have high exposures to real estate, but exposures are more limited for CRE. As of 2022, the mortgage-to-GDP ratio stood at approximately 148 percent. Of this amount, 62.3 percent was for owner-occupied residential properties, 23.0 percent for investment purpose residential properties, and 14.7 percent for CRE properties. Data limitations prevent obtaining a full picture of the extent of the banking sector's total exposure to real estate, including through non-mortgage lending, such as credit lines and corporate bonds, and cross-border markets.

18. Insurance companies have relatively smaller exposures to real estate markets, but with substantial variations across insurance segments. In 2022, real estate properties constituted 9 percent of total assets managed by Swiss insurance companies, with mortgages accounting for another 7 percent.

19. Pension funds' exposures to real estate markets are bigger but still much smaller than banks. Swiss pension funds allocated 22.8 percent of total assets directly into real estate in 2022, with an additional 3.0 percent into mortgages. However, other pension funds' exposures to real estate (e.g., via equity and bonds) are less clear due to data limitation. Overall, NFFIs exposures to real estate are high compared with other countries, while cross-border direct real estate holdings are limited.

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