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Residential Property Price Developments and (Mis)alignments in Cyprus

Robert Beyer and Nina Biljanovska

SIP/2023/043

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Residential Property Price Developments and (Mis)alignments in Cyprus
Prepared by Robert Beyer and Nina Biljanovska

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ABSTRACT: *Residential house prices in Cyprus show no signs of overvaluation in international comparison, and various indicators confirm that prices are aligned with economic fundamentals. However, still-high household debt poses a risk. Regional disparities raise some concerns about affordability, notably in Limassol, calling for supply-side measures to increase housing supply.*

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SELECTED ISSUES PAPERS

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CYPRUS

SELECTED ISSUES

May 9, 2023

Approved By
European Department

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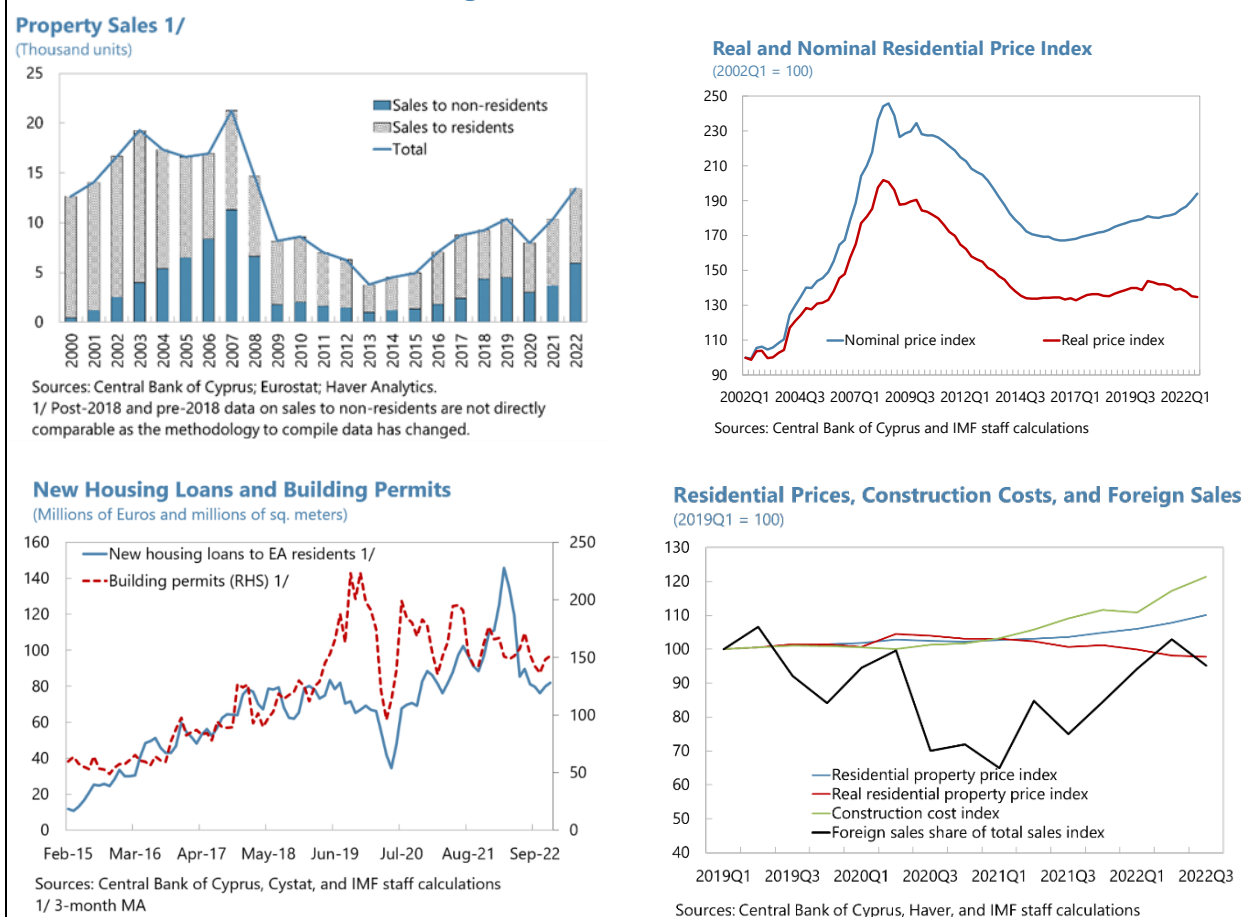
RESIDENTIAL PROPERTY PRICE DEVELOPMENTS AND (MIS)ALIGNMENTS IN CYPRUS¹

A. Introduction

- 1. Residential property prices rose sharply before Cyprus joined the euro area.** The price surge from 2006 until 2008 was among the highest in the euro area, amid strong domestic credit growth and increasing foreign demand, supported by lower exchange rate risks and upbeat economic sentiment due to the approaching euro adoption (Cleanthous et al. 2019). A strong decline of foreign demand due to the global financial crisis had been largely absorbed by rising local demand as credit growth continued, so that prices declined very little until 2012.
- 2. House prices corrected after the 2012–2013 Cypriot financial crisis and have remained below pre-crisis levels since.** When the credit boom ended in 2012, the decline in housing sales accelerated. In 2015, sales amounted to only around a fifth of the peak in 2007 (Coutinho et al. 2018), with sales to non-residents particularly strongly affected (Figure 1, top left panel). By 2015, house prices had fallen by around a third amid low demand and a high housing stock (Figure 1, top right panel). Due to widespread defaults, mortgage NPLs increased sharply, and growth in new housing loans (and in the stock of loans) turned negative, starting a slow process of deleveraging from the very high pre-crisis debt levels.
- 3. Prices started recovering as demand—including foreign—picked up after 2015.** Foreign demand was initially driven by the Citizenship by Investment Program (CIP), especially from Russian and later Chinese investors, while domestic demand was supported by a moderate recovery in new mortgage lending (Figure 1, bottom left panel). Housing construction growth also resumed.
- 4. After a slowdown in 2020, prices started accelerating.** Demand slowed in 2020 as new lending turned negative during the COVID-19 pandemic, and the CIP was terminated, drastically reducing foreign demand. Housing construction stabilized and has not adjusted to the subsequent pickup in new lending and domestic demand, to the sharp increase in foreign demand attributed to the relocation of foreign businesses and their employees (especially in the ICT sector), or to war-related immigration from Russia and Ukraine. Furthermore, construction costs increased (Figure 1, bottom right panel), reflecting supply bottlenecks. Prices accelerated as a result, especially in areas with foreign demand, raising concerns about affordability (even though prices have declined in real terms given high inflation).

¹ Prepared by Robert Beyer (EUR) and Nina Biljanovska (RES). The analysis benefitted from helpful comments and suggestions by Pietro Dallari, Wojciech Maliszewski, and Mark Horton (all EUR), and participants of a presentation at the Central Bank of Cyprus during the 2023 Article IV mission.

Figure 1. House Price Trends



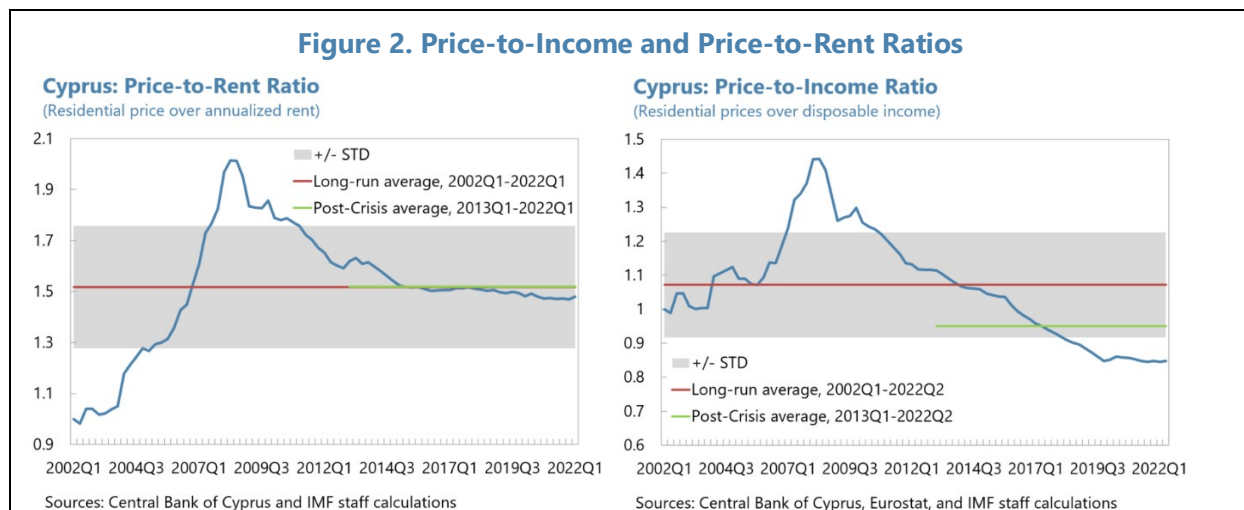
5. The tightening of financial conditions poses risks to the housing market. Tightening financial conditions and the cost-of-living crisis cooled domestic demand; new lending for housing has slowed. Foreign demand continues to be sustained by the same drivers as in 2022, which will likely support prices in local markets with large foreign presence (and which may, in combination with higher borrowing costs, further price out domestic buyers). Separately, the still very high stock of housing debt poses a risk to the market as rising interest rates and economic headwinds impact existing mortgage holders—most mortgages are at variable interest rates—potentially resulting in defaults.

6. Against this backdrop, this Selected Issue Paper aims to address four questions:

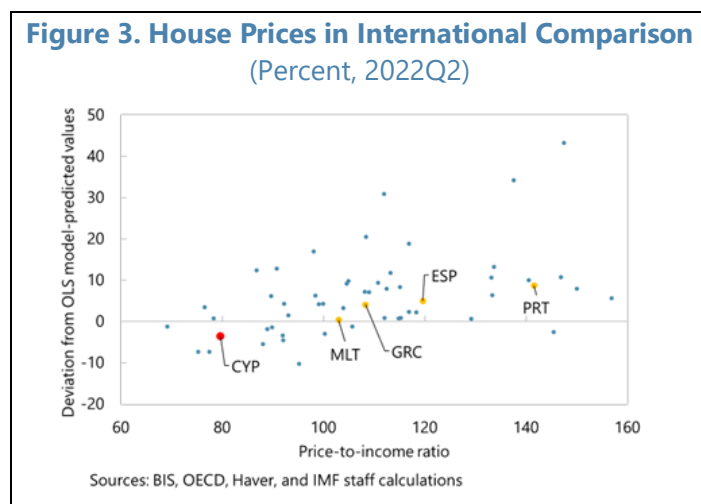
- Are residential house prices misaligned and how do they compare internationally?
- How will rising interest rates impact affordability and price valuations?
- Are local price developments a reason for concern?
- If anything, what should policy makers do?

B. House Price (Mis)alignments

7. Standard measures of price misalignments stand at or below historical averages. Two statistical measures often consulted are the Price to Income Ratio (PIR) and the Price to Rent Ratio (PRR), which can be interpreted as reduced forms of inverse demand and user-cost modeling approaches, respectively (Duca et al. 2021). In Cyprus, both ratios peaked in 2008 and have since declined, remaining at or below the long-time average during and after the COVID-19 pandemic. Moreover, they are both below their post financial crisis averages, hence indicating no signs of overvaluation (Figure 2).



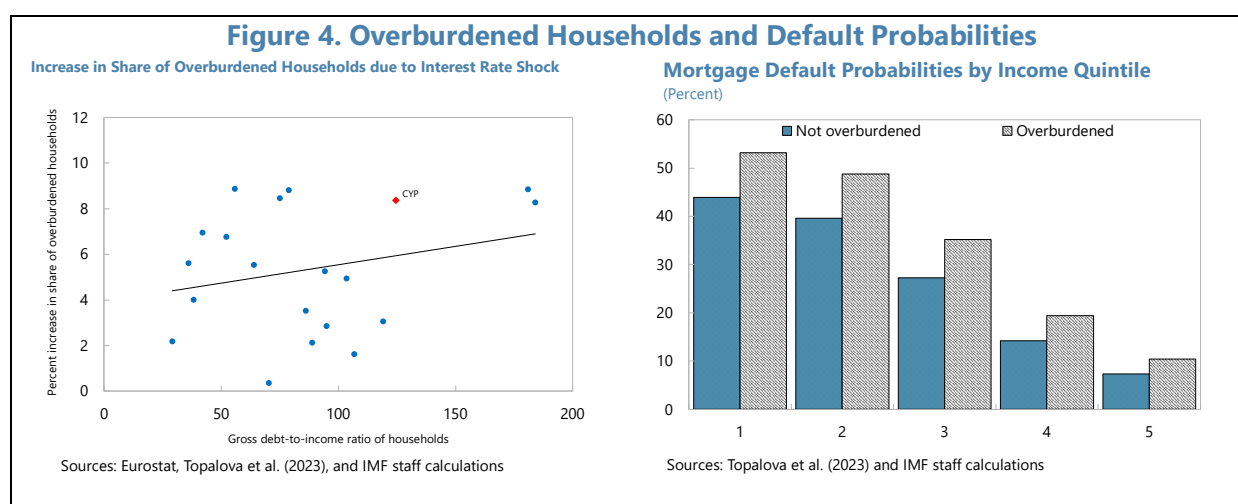
8. Cross-country comparisons similarly indicate that house prices in Cyprus are not overvalued. We assess house price valuations in Cyprus against valuations in over 50 countries during the second quarter of 2022 based on two indicators. First, we compare PIRs and, second, we compare actual prices to predictions from a cross-country Ordinary Least Squares (OLS) regression model. The OLS model considers a large set of explanatory variables, which are proxies for fundamentals driving house prices (for more details on the model specification, see Annex A). Deviations of prices from the model prediction are thus interpreted as signaling misalignment. Neither measure places Cyprus among countries with overvalued house prices (Figure 3).



C. Debt Vulnerabilities and Rising Interest Rates

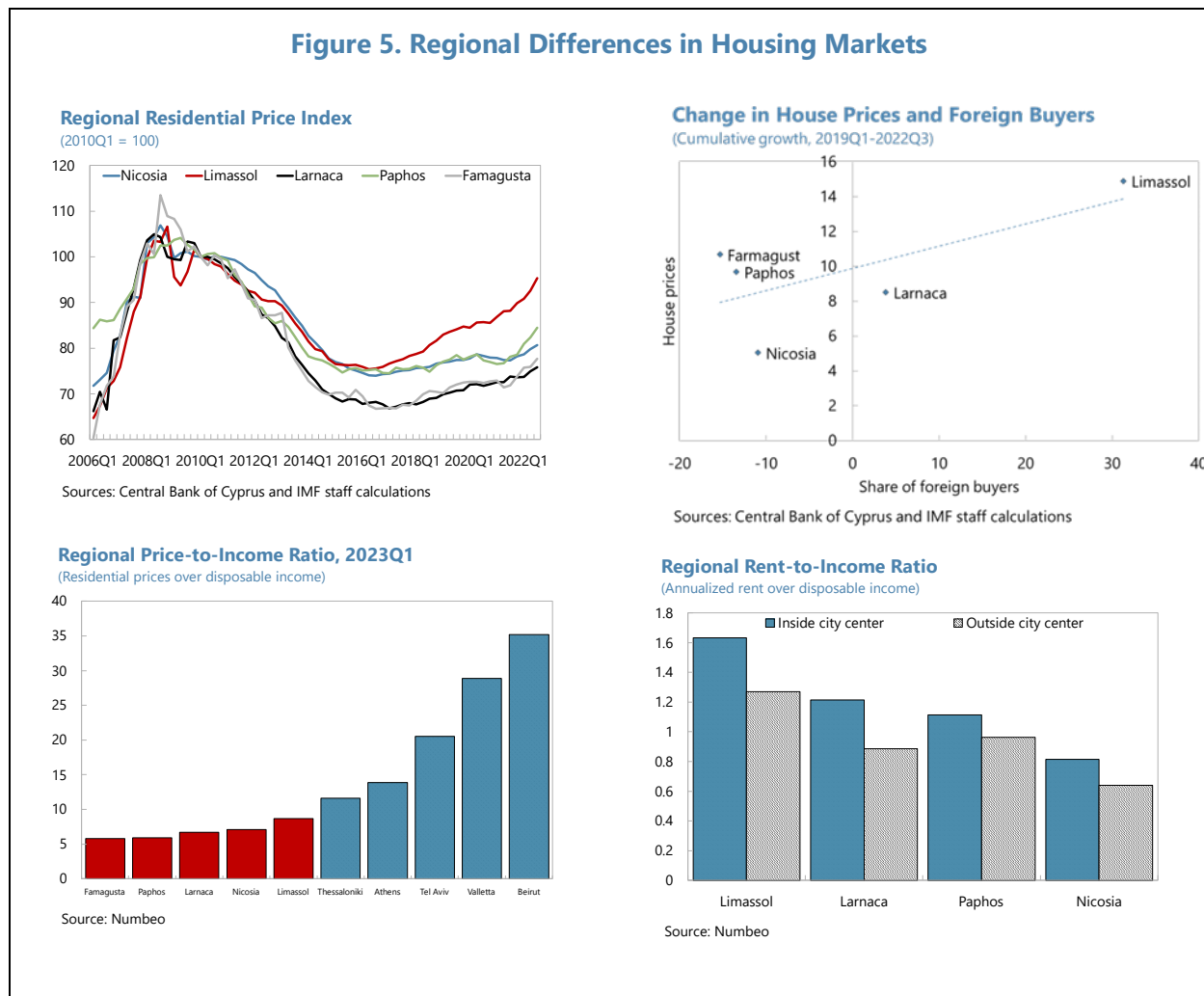
9. Housing debt—a crucial driver of house prices—has not exhibited unsustainable dynamics associated with the previous crisis. The OLS regression used for the international comparison relates changes in prices to changes in explanatory variables as proxies for market fundamentals, but these variables may exhibit unsustainable dynamics themselves (potentially jointly with housing prices). For instance, while a self-reinforcing dynamic between housing prices and credit could be a stable equilibrium (as higher collateral values increase households' ability to borrow and motivate banks to lend more—Anundsen and Jansen 2013), twin booms in house prices and credit growth are also likely to end up in severe banking crisis (Cerutti et al., 2015). Cyprus experienced a twin boom in 2007, with growth of both residential prices and credit accelerating by more than two standard deviations and prices rising further until ultimately collapsing after the 2012-13 financial crisis. Importantly, household credit has been shrinking in recent years (as households have been deleveraging since the crisis), and hence credit developments do not appear to have contributed to unwarranted housing price growth.

10. But the level of housing debt is still high, posing a risk to the market given the headwinds (Figure 4). One way to look at the risk associated with high debt under rising interest rates and the cost-of-living crisis is to identify households that are now 'overburdened' and thus more likely to default on their mortgages. An econometric simulation based on household level data (Topalova et al. 2023) defines households as overburdened if mortgage payments and essential consumption (food, utilities) exceed 70 percent of their gross income. The results suggest that more than half of households holding a mortgage—concentrated at the lower end of the income distribution—could now become overburdened. These mortgages account for about 70 percent of total mortgage debt—much higher than the EU average. However, as significant share of housing debt has already been non-performing since the crisis, the impact will depend on how the legacy NPLs are resolved (and underlying collateral disposed in some cases) by banks and credit acquiring companies (CACs; now holding the bulk of this portfolio).



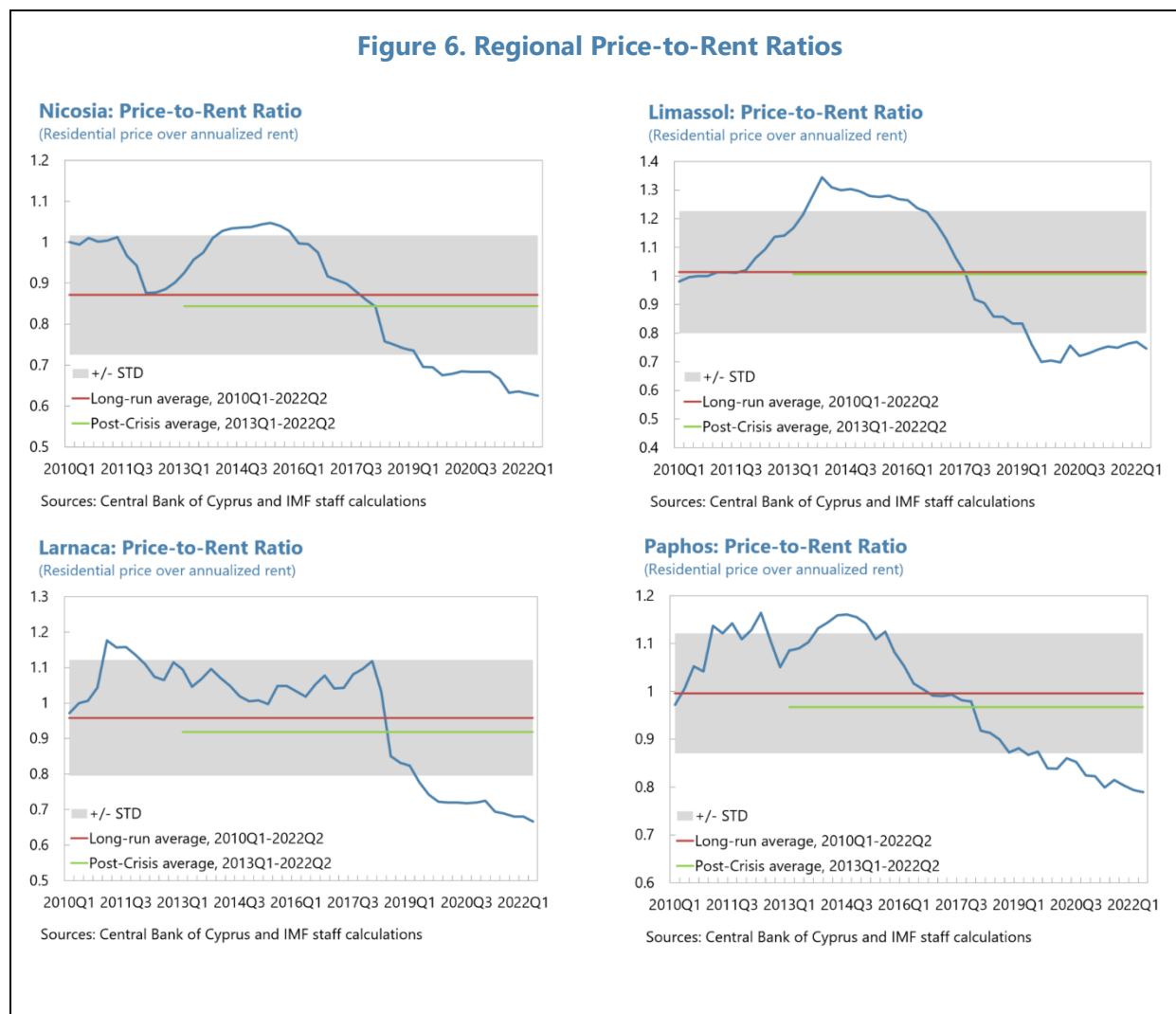
D. A Regional Perspective

11. House prices in the Limassol region of southern Cyprus have been rising faster than in other areas. Since 2016, prices in Limassol decoupled, outperforming other areas (Figure 5, top left panel). Initially, this development was disproportionately affected by foreign demand driven by the CIP. However, price growth did not slow after the termination of the scheme in November 2020. Even after Russia’s invasion of Ukraine, prices in Limassol did not fall—as many expected at that time—but instead accelerated, reaching 15 percent in nominal terms since 2019Q1. This has been driven by robust domestic demand and again rising foreign demand (by about 30 percent from 2019Q1 to 2022Q4)—likely due to the concentration of new immigration from Russia and Ukraine and an influx of companies and employees in the ICT sector in this region. Overall, foreign demand appears to be an important driver of regional disparities in real estate developments in Cyprus (Figure 5, top right panel).



12. PIRs confirm that affordability is lowest in Limassol, but prices remain low in cross-country comparisons. Price to income ratios from Numbeo (2023) unveil that the PIR in Limassol was around a fifth higher than in Nicosia and around a third higher than in Larnaca, Paphos, and Famagusta. However, in cross-country comparisons, affordability in Cyprus, including in Limassol, is much better than in other cities in the region (Figure 5, bottom left panel). In Thessaloniki and Athens, for example, the PIR is around twice as high. In Tel Aviv, Valetta (Malta), and Beirut, the PIRs are even higher. Despite some uncertainty about the reliability of these numbers, this comparison suggests that cities in Cyprus remain relatively affordable and attractive destinations for foreigners. Time series of PRRs unveil that they are below long-term averages in all areas, including in Limassol (Figure 6).

Figure 6. Regional Price-to-Rent Ratios



13. Regional disparity is somewhat larger for rents. In line with house prices, rents are the highest in Limassol (Figure 4, bottom right figure). According to data from Numbeo (2023), the rent-to-income ratio in Limassol is a fourth higher than in Larnaca, a third higher than in Paphos, and a half higher than in Nicosia, where the rents are relatively cheap compared to prices. These differences are very similar whether comparing rents inside the city center or outside of it. From a rental affordability perspective, the areas of concern are hence Limassol and, to a lesser extent, Larnaca.

E. Conclusion and Recommendations

14. Although various indicators suggest that housing market prices are not deviating from fundamental values, there are still some risks. Despite rising mortgage rates and a high share of flexible mortgages and vulnerable households, the risk of a large housing market correction seems low, especially if foreign demand continues to be boosted by immigration. Yet, despite progress in improving banks' resilience, the potential impact of financial tightening on credit quality and collateral revaluation risks calls for enhanced monitoring, especially because private debt levels are high compared to other countries. The resolution of legacy NPLs can reduce vulnerabilities and should advance decisively, supported by an unperturbed implementation of the foreclosure framework and the planned Mortgage-To-Rent scheme (which will help advance the resolution of NPLs from vulnerable borrowers). Intensifying concerns about price developments in specific segments could necessitate a macroprudential response, like the recent tightening of the Loan-to-Value ratio for luxurious properties.

15. Supply side measures could help address affordability constraints. Emerging housing constraints in Limassol are best resolved by market forces. However, policy makers could support housing supply and new construction, for example by reinstating the immovable property tax (IMF 2021)—which has been shown to reduce prices both in the short- and long-run in OECD countries (Oliviero et al. 2019)—or by strategic rezoning.

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Annex I. A Global OLS Model for International Comparison

1. The benchmark regression model takes the following form:

*House price growth*_t = $C + \theta$ *affordability*_{t-1} + β_1 *income growth*_t + β_2 *credit growth*_t + β_3 *real interest rate*_t + β_6 *population growth*_t + β_7 *global financial crisis dummy* + β_8 *COVID dummy* + ϵ_t .

It is estimated at the country level with the estimation period depending on data availability.

Housing affordability is ratio of housing prices to disposable income or to GDP per capita (where disposable income is unavailable); a higher ratio signals less affordability.

2. Since the model is estimated in growth rates, the prediction of the fundamental value requires a transformation into a price level. For the level prediction, house prices from 2014 to 2018 are used as alternative base years and predictions based on these years are then averaged.

3. We use data from different sources: quarterly house price data is from the BIS, quarterly GDP, GDP per capita, and disposable income is from the IMF World Economic Outlook, the quarterly short-term interest rate is from the IMF International Financial Statistics, the annual working age population is from IMF World Economic Outlook, and the quarterly non-financial private sector credit is from the BIS.

4. The above specification is tailored to Cyprus's data. We estimate the following prediction model for Cyprus (with the stars showing conventional levels of statistical significance: *** p<0.01, ** p<0.05, and * p<0.1):

*House price growth*_t = 0.395*** - 0.087*** *affordability*_{t-1} + 0.410** *income growth*_t + 0.067* *credit growth*_t + 0.367* *population growth*_t + 0.027*** *global financial crisis time dummy* - 0.002 *COVID dummy* - 0.551** *COVID dummy* × *income growth*_t + ϵ_t .

5. The model predictions from the benchmark model and the model adjusted for Cyprus are very similar. For 2022Q2, the deviation from the former prediction was -2.4 percent, while it was -3.6 percent from the latter.