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Measuring economic vulnerability in the Irish residential property market

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Abbreviations

CHP	Credit for house purchases
COSMO	ESRI's Core Structural Model
CSO	Central Statistics Office
DSR	Debt service ratio
DTA	Debt-to-assets
DTI	Debt-to-income
HP	Hodrick-Prescott
LTD	Loan-to-deposit ratio
MDD	Modified domestic demand
OECD	Organisation for Economic Co-operation and Development
OVL	Overvaluation
PTI	Price-to-income
PTR	Price-to-rent
RPPR	Residential Property Price Register
SPD	Lending spread
VECM	Vector Error Correction Model

Abstract

Strong and sustained house price growth warrants close monitoring of potential vulnerabilities in the Irish residential property market, particularly in relation to valuation, household indebtedness, and the credit cycle. This article applies a holistic approach to assess overvaluation by combining econometric and non-parametric techniques. Four techniques point to overvaluation in 2025, with a composite measure suggesting overvaluation of around 17 per cent. This compares with a peak of over 40 per cent in 2006. A distributional analysis of the Price-to-Income (PTI) ratio suggests that the current episode of house price overvaluation may disproportionately impact middle-income households. Further analysis shows that indicators relating to indebtedness and credit conditions remain well below the peak level in 2008. These findings suggest that valuation pressures warrant continuous monitoring, but that current conditions are more consistent with structural imbalances in housing supply than with credit-driven price growth.

1 Introduction

Egan and McQuinn (2024) presented analysis examining the sustainability of residential property prices using a broad set of valuation and risk indicators. Early data from the first half of 2026 shows that house prices in Ireland have continued to rise strongly, with the national residential price index increasing by 6.4 per cent on average over the first six months of the year. This article provides an updated analysis of potential economic vulnerability in the Irish residential property market. The analysis combines both econometric and non-parametric techniques to examine house price overvaluation with a range of supplementary metrics capturing indebtedness, credit developments, and alternative valuation measures. Together, these indicators provide an empirical view of conditions in the Irish residential property market and help to highlight emerging vulnerabilities or signs of imbalance.

The sustained increase in Irish house prices since mid-2013 has resulted in real house prices that are approaching the levels observed during the pre-global financial crisis peak and nominal house prices that are almost 26 per cent above their peak in 2007Q2.[1] This development has heightened concerns regarding potential overvaluation and the emergence of imbalances within the Irish residential real estate market.

This article applies a holistic approach to assessing overvaluation in the residential real estate market by combining econometric techniques with a range of statistical filters and valuation ratios. This allows us to evaluate potential misalignments from multiple perspectives rather than relying on any single measure. Due to data availability, our analysis covers the period up to 2025Q3. The analysis finds that there is a significant degree of overvaluation in the Irish residential property market, but one that is materially lower than the levels observed prior to the global financial crisis. Both parametric and non-parametric indicators are used to build a composite measure of overvaluation. This composite measure stood at approximately 17 per cent in the third quarter of 2025. This marks a gradual upward trend in overvaluation in the 2020s but it is materially lower than the level observed in the mid-2000s. An analysis of distributional price-to-income ratios corroborate the presence of valuation pressures, with the burden falling disproportionately on middle-income households. Broader vulnerability indicators suggest that the financial system supporting the

1 Figures relate to June 2026. The choice of deflator affects the precise values for real house prices but the trend is clear across three measures of deflator applied; the Consumer Price Index, the Harmonised Index of Consumer Prices, and the deflator for consumption in the National Accounts. Real house prices are between 3 and 5 per cent lower than the 2007 peak depending on the choice of deflator.

housing market is considerably more resilient than it was before the crisis. Household leverage is lower, credit growth is more contained, and indicators of credit vulnerability remain well below pre-crisis levels. However, higher interest rates have increased debt service burdens for some households and have put additional pressure on affordability measures.

2 Measuring house price overvaluation: A holistic approach

Broadly speaking, house price overvaluation can be defined as actual prices exceeding the level consistent with prevailing levels of income, interest rates, demographics and housing supply. In other words, measuring the level of over- or undervaluation involves comparing actual house prices to estimates of where prices should be given economic fundamentals. Estimating the extent to which residential property prices deviate from their fundamental values is inherently uncertain, however. This article therefore adopts a holistic approach, combining distinct classes of measure parametric econometric models, statistical filters, and non-parametric valuation ratios.

2.1 Parametric models

Parametric models specify a long-run equilibrium relationship between house prices and a set of economic fundamentals. The deviation of actual prices from the model-implied equilibrium provides the overvaluation measure. In our analysis, we estimate two complementary but separate specifications.

Benchmark model

The benchmark model follows Egan et al. (2024) and regresses real house prices (hp) on an affordability index (afd), the housing stock (hs), and the share of the population aged 25–44 ($\frac{pop_{2544,t}}{pop_t}$), the latter being a proxy for the house-buying cohort of the population. The affordability index is the central demand-side regressor in the benchmark model. Following McQuinn and O'Reilly (2008) and Egan et al. (2024), the approach assumes that the demand for housing is primarily a function of the maximum amount prospective purchasers can borrow from financial institutions, which in turn depends on current disposable income and the prevailing mortgage interest rate. Formally, the affordability index afd_t represents the maximum mortgage a household can sustain when committing a fixed fraction $\varnothing$ of disposable income to mortgage repayments, discounted at the prevailing mortgage interest rate over a fixed term τ. The index is given by:

$$afd_t = \varnothing(pdr_{t-1})\left(1 - \frac{(1 + rmt_{t-1})^{-\tau}}{rmt_{t-1}}\right) \quad (1)$$

where pdr_t is real personal disposable income (COSMO variable database and CSO), rmt_t is the residential mortgage interest rate (Central Bank of Ireland), pcd_t is the personal consumption deflator (CSO), τ = 360 months corresponds to a 30-year mortgage term, and $\varnothing$ = 0.30 is the assumed repayment share of income. Therefore, Equation 1 outlines the real present value of the maximum mortgage a household earning pdr_t can sustain at rate rmt_t when repayments account for 30 per cent of income. The expected sign on afd_t in the house price equation is positive, with an increase in affordability putting upward pressure on prices.

The housing stock variable, hs_t, captures the supply side of the market. It enters the benchmark equation as the log of the total stock of dwellings, which is constructed by cumulating new dwelling completions over time and applying a depreciation rate to account for the gradual removal of older properties from the usable stock. Data on new dwelling completions and total housing stock are sourced from the Department of Housing, Local Government and Heritage (DoHLGH) and the CSO. The expected sign on hs_t is negative, with a larger stock of available housing reducing the price level, reflecting the standard supply-demand framework.

Finally, the demographic variable is the share of the total population aged between 25 and 44, ($\frac{pop_{2544,t}}{pop_t}$), which proxies for the size of the main house-buying cohort. This specification again follows Egan et al. (2024), where the same variable is included in the long-run house price equation within COSMO's housing and financial block. Data from the CSO[2] has pointed to an increase in the average age of Irish home buyers over recent years. Rising prices and affordability barriers have shifted peak home-buying and household formation into older age brackets. This suggests that using this particular age group may be less appropriate as a stand-alone proxy for the prime household buying cohort. Therefore, we also test the benchmark model with higher cohorts included. The expected sign of the demographic variable is positive, with an increase in the home buying cohort of the population putting upward pressure on prices.

The benchmark house price specification can therefore be written as :

$$hp_t = \beta_0 + \beta_1\, afd_t + \beta_2\, hs_t + \beta_3\, \frac{pop_{2544,t}}{pop_t} + \epsilon_t. \qquad (2)$$

The model is estimated from 1997Q1 to 2025Q3, the start date determined by the beginning of COSMO's quarterly database and the end date due to the availability of most recent data at the time of writing. The estimation results

2 More information available at the CSO Housing Trends web page

across all tested models, that is the benchmark as expressed in Equation 2, a specification with the older 25-54 cohort and an alternative specification which excludes the demographic variable altogether,[3] are presented in Table A2 in Appendix A. Overvaluation is then calculated as

$$\widehat{OVL}_t = \left(\frac{hp_t}{\widehat{hp}_t} - 1\right) \times 100, \tag{3}$$

where $\widehat{hp}_t$ is the model-implied equilibrium price based on the fundamentals presented in Equation 2. Figure B1 in Appendix B presents the benchmark model fit alongside the implied overvaluation measure over the 2003Q1-2025Q3 period. The measure of overvaluation would appear to capture the broad contours of the Irish house price cycle well, identifying clear overvaluation in the pre-crisis period, reaching a peak of almost 40 per cent at 2007Q1, a period of undervaluation following the crash, and a renewed upward trend from around 2020 onwards. As of 2025Q3, the benchmark indicates overvaluation of approximately 24 per cent, materially below the pre-crisis peak but nonetheless a significant departure from model-implied equilibrium.

Vector error correction model (VECM)

We also estimate an overvaluation measure using a Vector error correction model (VECM) following IMF (2016) analysis of Ireland's real estate market. The VECM differs from the benchmark model in a number of important respects. First, it identifies the long-run equilibrium relationship using the Johansen cointegration approach, rather than direct ordinary least squares (OLS) estimation of the levels equation. The long-run relationship is captured by the cointegrating vector and incorporated into the model through the error-correction term. Second, it uses output per capita (with output proxied by modified domestic demand (MDD)) as the income variable rather than the affordability index, and real construction costs rather than the housing stock level as the supply-side variable. Third, it does not impose the same functional form as the single-equation benchmark. The overvaluation measure is the demeaned cointegrating residual. Finally, the VECM is estimated from the later date of 2003Q1. While this choice may at first seem arbitrary, it is based on the Johansen trace-test results. The full 1997–2025 sample does not provide evidence of cointegration, whereas the

3 The specification without any demographic element was estimated due to the fact that the 25-54 share was found to be insignificant while the 25-45 was significant at only the 5 per cent level. The estimation results, fitted values and corresponding measures of overvaluation are broadly consistent across all three.

2003–2025 specification does. The shorter sample is therefore adopted for the VECM analysis.[4]

The VECM model can be defined as:

$$Y_t = \sum_p A^* Y_{t-p} + E_t \tag{4}$$

and

$$\Delta Y_t = \Pi E_{t-1} + \sum_i^{p-1} \Gamma_i Y_{t-i} + \omega_t, \tag{5}$$

where Y_t is a k-vector of endogenous non-stationary I(1) variables, and E_t and ω_t are vectors of white-noise innovations. Y_t includes the log of the following variables: real house prices, MDD per capita, real private credit, mortgage interest rate and real construction cost. Figure B2 in Appendix B shows the VECM-based overvaluation measure, defined as the demeaned residual from the cointegrating relationship for real house prices the period 2003Q1–2025Q3. By identifying the long-run equilibrium from a different modelling perspective, the VECM provides an independent check on the benchmark results. The results show a similar dynamic to the benchmark model. Once again the estimation would appear to capture the dynamics of the Irish house price cycle. As with the benchmark model, the measure identifies the peak to be 2007Q1, albeit at a lower level with a measure of 32 per cent overvalued. As of 2025Q3, the VECM based overvaluation measure stood at around 13 percent. Taken together, the broad agreement between the VECM and benchmark estimates, both in terms of timing and direction if not exact magnitude, lends confidence to the conclusion that Irish residential property prices are currently materially above their fundamental equilibrium level.

2.2 Statistical filter

In addition to the model-based estimates, we examine Irish house prices relative to trend using a Hodrick–Prescott (HP) filter. Although the HP filter has well-known limitations,[5] it remains a widely applied tool for extracting trends from macroeconomic and financial series and is used extensively by central banks in the assessment of countercyclical capital buffers. In this article, we apply the HP filter to extract the long-run trend from the house price series without imposing any economic structure. Overvaluation is defined as the deviation of actual prices from the filtered trend:

4 This sample restriction should be interpreted as a statistical modelling choice rather than evidence that a structural break necessarily occurred in 2003.

5 As pointed out by Alessi and Detken (2018) and others, the HP filter is sensitive to the choice of the smoothing parameter and also suffers from endpoint bias.

$$\widehat{OVL}_t^{HP} = \frac{hp_t}{\tau_t^{HP}} - 1, \quad (6)$$

where τ_t^{HP} is the HP trend computed using a smoothing parameter λ. For robustness, we apply a number of different smoothing parameters in an effort to test the resulting impact in our overvaluation measure. Firstly. the baseline value of λ = 400,000 follows Drehmann et al. (2010), who demonstrate that a high degree of smoothing is required to capture financial cycles, which typically span 10 to 20 years. This value has become the standard in central bank and macroprudential policy analysis and is used by the Bank for International Settlements (BIS) and most central banks in the assessment of countercyclical capital buffer requirements. This can be regarded as our baseline λ.

Secondly an intermediate value of λ = 125,000 is motivated by financial-cycle applications including Edge and Meisenzahl (2011). It provides a less heavily smoothed trend than the baseline while remaining substantially above the conventional business-cycle parameter, making it a useful intermediate specification. Finally, the standard business cycle value of λ = 1,600, originally proposed by Hodrick and Prescott (1997) for quarterly data, is included for comparative purposes.

The three overvaluation measures based on these λ values are presented in Figure B3 in Appendix B. The figure illustrates that the two financially motivated specifications produce broadly consistent overvaluation signals, with 2025Q3 readings of approximately 20 per cent (λ = 400,000) and 16 percent (λ = 125,000). This would support the findings from the parametric model section that house prices are currently materially above their long-run trend but below their pre-crisis peak. The figure also suggests, as expected, that the standard business cycle choice of λ = 1,600 is not appropriate as it produces a comparatively stable measure throughout the entire sample period, including at the pre-crisis peak in 2007, a period universally recognised as one of severe house price overvaluation. This failure reflects a fundamental mismatch between the frequency of business cycles and the longer duration of financial and housing cycles.

2.3 Non-parametric valuation ratios

Price-to-income (PTI) ratios are widely recognised as fundamental indicators of housing market valuation. Significant deviations from long-term benchmarks often signal overvaluation or market misalignment. Empirical evidence demonstrates that these ratios are robust predictors of subsequent financial stress and systemic risk (Claessens et al., 2014). The

underlying logic is that house prices should move broadly in step with household incomes over the long run, as families typically spend a relatively stable share of income on housing. When the PTI ratio exceeds its historical average, it may suggest that house prices have become unsustainably high relative to the income base that supports them.

Therefore, we measure overvaluation using PTI as:

$$\widehat{OVL}_t^{PTI} = \frac{PTI_t}{\overline{PTI}} - 1. \tag{7}$$

The PTI overvaluation measure is computed as the percentage deviation of the price-to-income ratio (PTI_t) from its full-sample mean ($\overline{PTI}$) using data from 1997Q1 to 2025Q3.[6] We apply the PTI measure from the OECDs Analytical House Price Indicators in our analysis as it provides an independent 'cross check' of the benchmark model which relies on CSO data for house prices and personal disposal income. While traditionally the overvaluation measure would use the deviation of the price-to-income ratio from its full-sample mean as outlined in Equation 7, we also calculate the measure using the deviation from the long run median. The median price-to-income ratio is less sensitive to the influence of extreme observations at either tail of the distribution. Therefore, it might provide a more stable long-run reference point that avoids the volatility of metrics based on averages. The resulting measures of overvaluation are presented in Figure B4 in Appendix B. The measures show an earlier peak than the benchmark and VECM based measures with overvaluation reaching 45 per cent in 2006Q4. Interestingly, the corresponding measures for the most recent period examined in this article, 2025Q3, is lower than that of the model and filter-based estimates but still shows a material level of overvaluation at around 10 per cent.

2.4 Summary of aggregate overvaluation measures

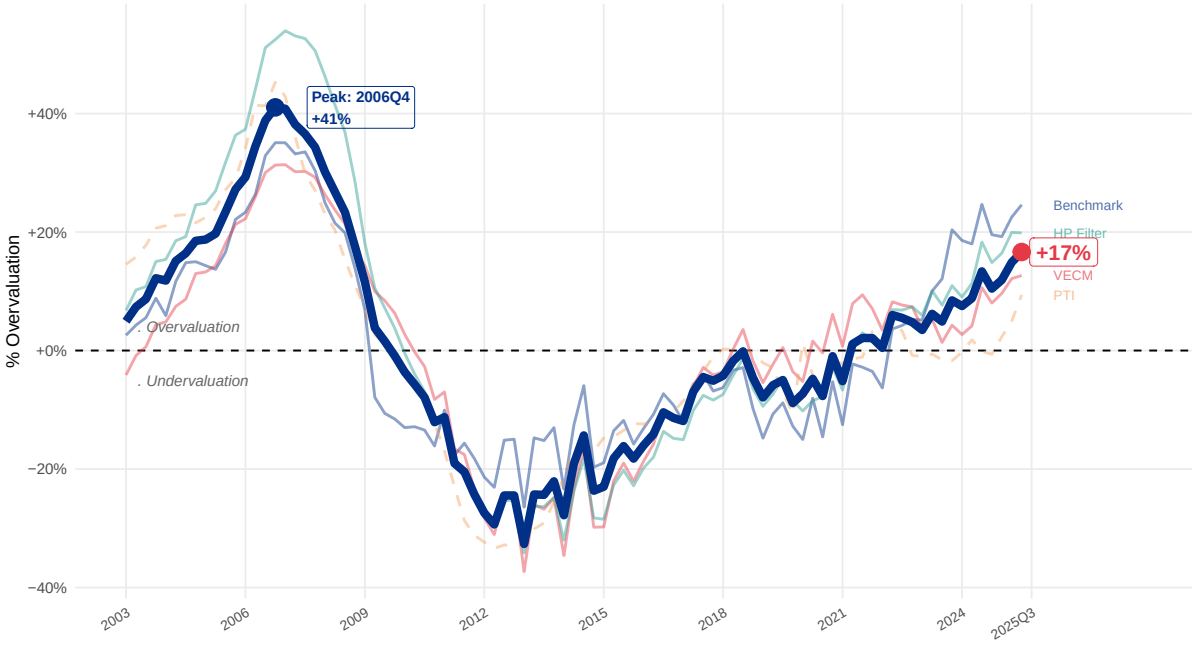
The analysis we have presented so far has produced a number of overvaluation measures in 2025Q3 ranging from 10 to 24 percent. To summarise across methods, we construct a composite overvaluation measure as the simple average across all approaches outlined above.[7] The composite overvaluation measure along with its constituents is presented

6 While PTI data is available before 1997Q1, we choose this as our start date to make the resulting measure comparable with the benchmark model.

7 The composite is constructed as the simple equal-weighted average of the four constituent measures. As a sensitivity check, we also compute the composite under a number of alternative weighting schemes, varying the relative weights placed on the parametric models (benchmark and VECM) versus the non-parametric measures (HP filter and PTI). Across all schemes considered, the 2025Q3 composite reading lies in the range 15.8 to 18.8 per cent, confirming that the headline estimate of approximately 17 per cent is not very sensitive to the weighting choice.

in Figure 1. The figure reveals a clear and intuitive picture of the Irish housing cycle. Overvaluation built steadily through the mid-2000s, reaching a peak of over 40 per cent in the run-up to the global financial crisis. This period was characterised by rapid credit expansion and loose lending standards. This was then followed by a sharp and prolonged correction with the composite measure indicating undervaluation of around 15–20 per cent by 2012. This reflects the sharp fall in demand, the oversupply that followed the construction boom, as well as substantial tightening of credit. This was followed by a gradual recovery with prices broadly returning to the level implied by fundamentals around 2020. Looking at the most recent period, as of 2025Q3, the composite measure stands at approximately 17 per cent, indicating a significant degree of overvaluation in the Irish residential property market. While Figure 1 clearly shows that there has been a consistent increase in the level of overvaluation since 2021, the level remains well below the pre-crisis peak. In addition, the analysis undertaken in the subsequent section of this article would seem to suggest that the composition of the overvaluation differs markedly from the 2007 episode. Unlike that period, the current divergence between actual prices and model or trend implied equilibria does not appear to be driven by excess credit or unsustainable leverage. This distinction has important implications for how the overvaluation should be interpreted and for the appropriate policy response.

Figure 1 Composite measure of house price overvaluation



Source: Authors' calculations.

Notes: The bold line shows the simple equal-weighted average of the four overvaluation measures. Lighter lines show the four constituent series: the benchmark OLS model, the VECM, the HP filter (λ=400,000) and the OECD price-to-income ratio. The parametric measures (benchmark and VECM) are expressed as percentage deviations from their model-implied equilibrium prices. The HP filter is expressed as the percentage deviation of actual prices from the estimated long-run trend. The PTI measure is expressed as the percentage deviation of the price-to-income ratio from its full-sample mean.

2.5 Distributional overvaluation measures

A limitation of aggregate measures of overvaluation discussed above is that they are based on economy-wide averages and therefore cannot capture how valuation pressures vary across the income and price distribution. For example, a household at the 50th percentile of the income distribution may face a very different affordability challenge from one at the 75th percentile, yet standard measures treat both identically. To address this, we construct a distributional PTI measure computing the ratio of house prices to disposable income at different percentiles of the joint income-price distribution and applying the same deviation-from-mean formula as Equation 7 to each percentile series. This gives us:

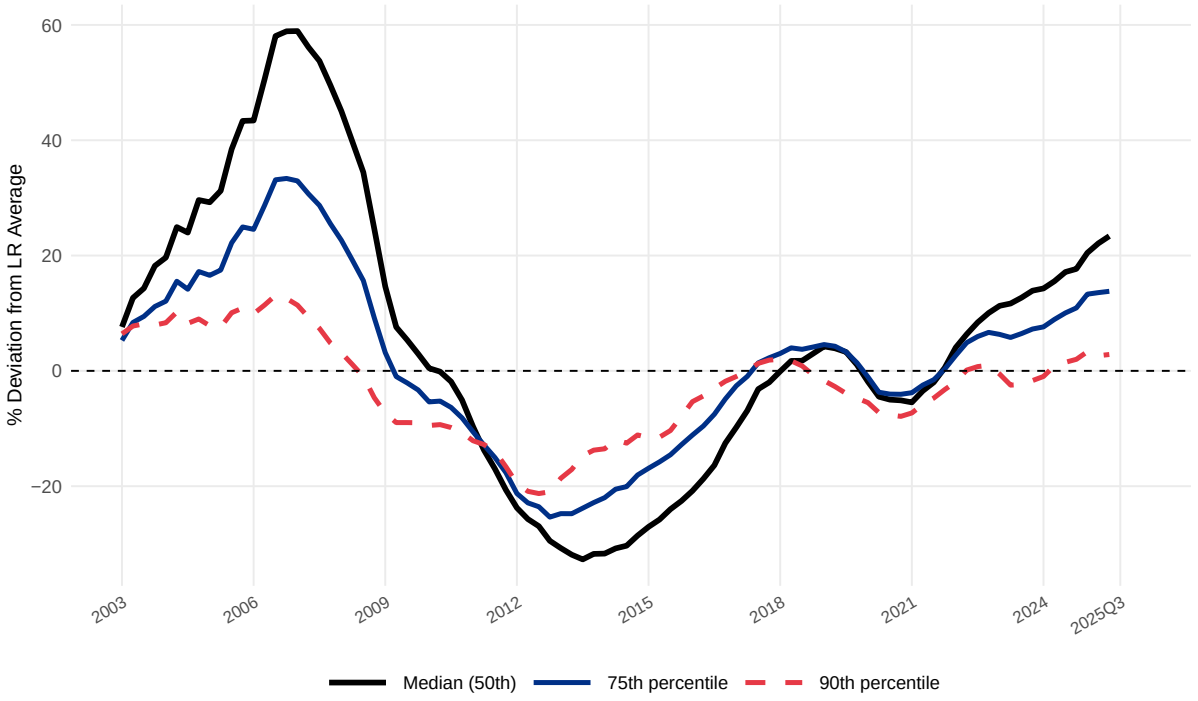
$$\widehat{OVL}_t^{PTI}(p) = \frac{PTI_t(p)}{\overline{PTI}(p)} - 1 \tag{8}$$

This approach draws on the distributional affordability literature including, in the Irish context, Disch and Slaymaker (2023). It should be noted here that due to data limitations both extrapolation and backcasting techniques have been applied. The distributional house price and income series are constructed in two stages. For house prices, transaction-level data from the Residential Property Price Register (RPPR) is used to compute quarterly percentiles (50th, 75th and 90th) from 2010Q1 onwards. Prior to 2010Q1, each house price percentile series is backcast using OLS regression with the CSO's aggregate measures. For household income, the annual distribution is observed directly from the CSO's EU Survey on Income and Living Conditions (EU-SILC) survey for 2011–2024. Outside this window, each annual percentile is estimated via OLS regression of the observed annual percentile on the annual average of the aggregate personal disposable income series. The resulting annual series are converted to quarterly frequency using the Denton-Cholette method (Dagum & Cholette, 2006), with the quarterly aggregate personal disposable income series serving as the high-frequency indicator. With these techniques in mind, it should be stressed that results should be treated with a degree of caution. Figure 2 plots the distributional PTI overvaluation estimates for the 50th, 75th and 90th percentiles.[8] Figure 2 presents the deviation from the PTI ratio's long-run average by percentile. Several features are noteworthy. First, overvaluation is positive in 2025Q3 across all three distributions shown, reinforcing the finding that current house prices exceed historical norms regardless of where in the distribution one looks. Second, the degree of overvaluation is not uniform but is most pronounced in the middle of the distribution, with households in the 50th percentiles experiencing the largest deviation from their own historical norms. Third, households at the upper end of the distribution (90th percentile and above) show materially lower overvaluation than those in the middle, reflecting the fact that higher-income households have seen income growth that has kept closer pace with house price appreciation.[9] Taken together, these findings suggest that the current episode of house price overvaluation may disproportionately impact middle-income households.

8 Mortgage holders in Ireland are largely concentrated in the upper half of the income distribution. Households in the bottom two quintiles are less likely to have a mortgage and are more likely to rent or live in social housing (Disch & Slaymaker, 2023). As a result, the distributional analysis focuses on the 50th, 75th and 90th percentiles.

9 Similar to the aggregate PTI measures of overvaluation, we examine both the deviation from the long run median as well as the long run mean but found no material difference in the result.

Figure 2 PTI ratio: Deviation from long-run average by percentile



Source: CSO EU-SILC, RPPR and authors' calculations.

Notes: Each line shows the deviation of the PTI at that percentile of the joint income-price distribution from its own full-sample mean. House price percentiles are observed directly from Property Price Register transaction data from 2010Q1; prior values are backcast using the CSO aggregate price index. Income percentiles are observed from EU-SILC from 2011; values outside this window are extrapolated using aggregate personal disposable income, converted to quarterly frequency using the Denton–Cholette method.

3 Other vulnerability measures

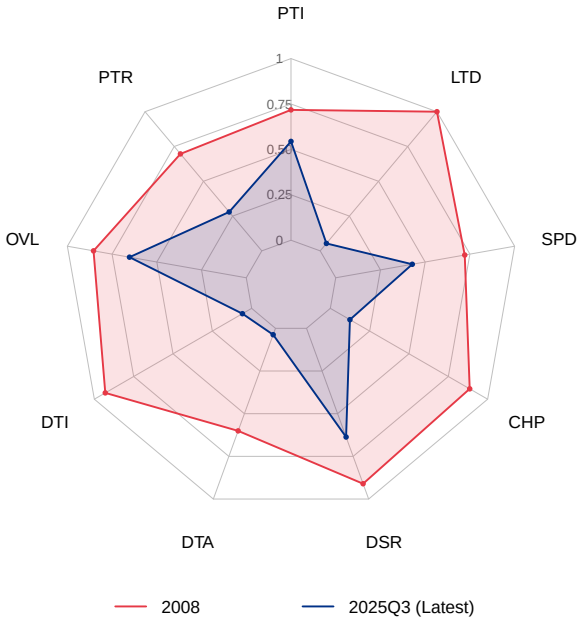
As the analysis in the previous section would suggest a material degree of house price overvaluation, further monitoring of other vulnerabilities within the Irish residential real estate market is warranted. To do so, we follow the approach of Bengtsson et al. (2020), who analyse a set of indicators related to three dimensions of real estate sector vulnerability: valuation, household indebtedness and the credit cycle. Table 1 briefly outlines the indicators while Table A1 in Appendix A provides more detail on these indicators in the Irish context.

Figures 3 and 4 present the vulnerability indicators in two complementary ways. Figure 3 compares vulnerability at two points in time, 2008Q1, which corresponds to an elevated period of vulnerability across all measures in the crisis period, and 2025Q3, the most recent observation, using a radar chart in which each axis represents a normalised indicator scaled from 0 (lowest historical vulnerability) to 1 (highest).

Table 1 Housing market vulnerability: Key indicators

Valuation	**Household Indebtedness**	**Credit Cycle**
Price-to-Income Ratio **PTI**	Household Debt-to-Income Ratio **DTI**	Credit for House Purchases **CHP**
Price-to-Rent Ratio **PTR**	Debt Service Ratio **DSR**	Lending Spread **SPD**
Overvaluation **OVL**	Debt-to-Assets Ratio **DTA**	Loan-to-Deposit Ratio **LTD**

Figure 3 Radar chart of residential property vulnerability: 2008 VS 2025Q3



Source: Central Bank of Ireland, OECD Analytical House Price Indicators and authors' calculations.
Notes: Each axis is normalised to [0,1] over the 2003–2025Q3 sample. 0 = lowest vulnerability observed; 1 = highest. 2008 corresponds to 2008Q1, a quarter of high normalised vulnerability.

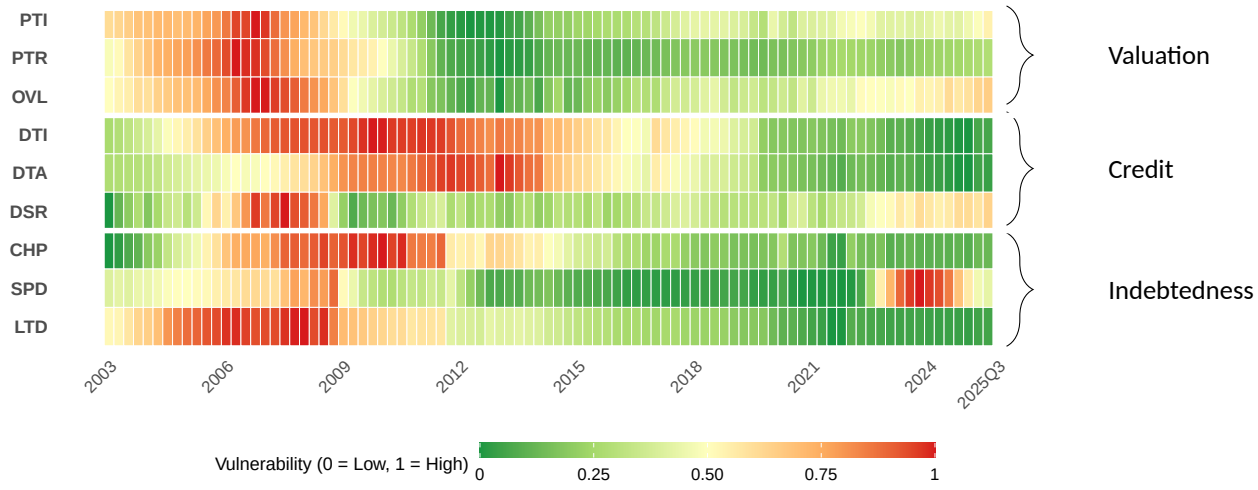
Figure 4 tracks the evolution of all nine indicators over the full 2003Q1–2025Q3 period in the form of a heat map[10] in which green denotes low vulnerability and red denotes high vulnerability.[11]

Both Figures 3 and 4 overall show that vulnerability in the Irish housing and credit market as of 2025Q3 remains well below the levels observed during the 2007–2008 crisis period. Most indicators show substantial improvement, reflecting lower household leverage, more conservative lending standards, and strengthened banking-sector balance sheets. These factors can be attributed at least in part to the introduction of macroprudential mortgage rules, described in more detail by Cassidy and Hallissey (2016) and evaluated in Central Bank of Ireland (2023). Restrictions on the loan to value and loan to income ratio have been imposed for new borrowers, while capital requirements for banks across the Eurozone have been refined since the financial crisis.

10 The normalisation to [0,1] over the full 2003–2025Q3 sample may mean that recent upward movements in some indicators appear somewhat less pronounced, given that historical peaks are associated with the particularly severe conditions during the property crash. We also present the absolute values of these indicators in Figure B5 in the appendix.

11 The lending spread indicator (SPD) is inverted prior to normalisation, reflecting the fact that compressed spreads, as observed during the pre-crisis boom period, are associated with loose credit conditions and therefore higher, not lower, vulnerability.

Figure 4 Heat map of residential property vulnerability: 2008 VS 2025Q3



Source: Central Bank of Ireland, OECD Analytical House Price Indicators and authors' calculations.

Notes: Green = low vulnerability, red = high vulnerability. All indicators normalised to [0,1] over 2003Q1–2025Q3. Lending spread (SPD) inverted prior to normalisation.

Among the valuation metrics, overvaluation (OVL)[12] and the price-to-income ratio (PTI) stand out as they do appear to be moving towards higher levels of risk. Although both remain below their crisis peaks, they have been moving upwards over the last number of years, as outlined in the previous sections of this note. The overvaluation measure suggests that house prices continue to exceed model-implied fundamentals by a material margin, reflecting ongoing supply constraints and strong demographic pressures. PTI, while substantially lower than crisis-era levels, has been pushed upward by the combined effect of rising nominal house prices and higher mortgage interest rates, which weaken affordability.

Indicators directly sensitive to interest rate movements, such as the debt service ratio (DSR) and lending spread (SPD), also show some upward drift. DSR has increased as higher mortgage rates have raised repayment burdens, and the SPD reflects wider lending spreads as banks pass on higher funding costs. Importantly, both remain well below their 2007–2008 highs. The red bars in the SPD row during 2023 and 2024 capture increased vulnerability from this measure that were broadly consistent with a financial system adapting to tighter monetary conditions. With the remainder of 2026 and into 2027 likely to see interest rate increases, albeit not on the same scale as the 2022/23 tightening, these measures should be monitored closely.

12 The overvaluation measure used is the composite measure calculated in the previous section.

In contrast, household indebtedness and credit cycle measures, namely debt-to-income (DTI), debt-to-assets (DTA), credit for house purchases (CHP), and loan-to-deposit ratio (LTD), remain at low vulnerability levels, underscoring a much more resilient financial landscape than existed prior to the crisis.

In summary, while economic vulnerabilities in the Irish residential property market today are substantially below levels observed 2007–2008, valuation pressures, particularly the overvaluation signal and a moderately elevated PTI, warrant continued monitoring.

4 Conclusion

Overall, this article suggests that there is a significant degree of overvaluation in the Irish residential property market, but one that is materially lower, and structurally different in nature, than the levels observed prior to the global financial crisis. Both parametric and non-parametric indicators, including aggregate and distributional price-to-income ratios, corroborate the presence of valuation pressures, with the burden falling disproportionately on middle-income households. The overvaluation identified in this analysis reflects a sustained departure of Irish residential property prices from levels justified by underlying economic fundamentals; most notably the deterioration in affordability conditions driven by house price growth faster than income growth, rising mortgage rates and persistent supply shortfalls rather than the loosening of credit standards that characterised the pre-crisis episode. The distributional PTI measures are particularly instructive in this regard, confirming that affordability pressures are most acute at the median of the income distribution, consistent with the view that the current overvaluation is affordability-driven rather than credit-fuelled.

At the same time, broader vulnerability indicators suggest that the financial system underpinning the housing market remains significantly more resilient than in the pre-crisis period.Household leverage is lower, credit growth is more contained, and indicators of credit vulnerability remain well below pre-crisis levels, although higher interest rates have placed some upward pressure on debt service burdens and affordability metrics.

Taken together, these findings suggest that while valuation pressures warrant continued monitoring, current conditions are better characterised as reflecting structural imbalances in housing supply rather than the emergence of a systemic credit-driven housing bubble. Policymaking responses should

therefore remain focused on alleviating supply constraints while maintaining macroprudential safeguards to preserve financial stability.

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A Appendix: Tables

Table A1 Housing market vulnerability: Detailed indicators

Indicator	Description	Source
Valuation		
Price-to-income (PTI)	Nominal house price / disposable income	OECD – Analytical house price indicators
Price-to-rent (PTR)	Nominal house price / nominal rent	OECD – Analytical house price indicators
Overvaluation (OVL)	% deviation of actual house prices from model-based equilibrium	CSO, Central Bank of Ireland, and authors' calculations
Household indebtedness		
Household debt-to-income (DTI)	Ratio of household debt to disposable income	Central Bank of Ireland and authors' calculations
Debt service ratio (DSR)	Annual mortgage repayments relative to disposable income	CSO, Central Bank of Ireland and authors' calculations
Debt-to-assets (DTA)	Ratio of household debt to total financial assets	Central Bank of Ireland and authors' calculations
Credit cycle		
Credit for house purchases (CHP)	Credit to domestic households for house purchases to GNI*	Central Bank of Ireland and authors' calculations
Lending spread (SPD)	Difference between mortgage lending rates and money market rates	Central Bank of Ireland, Refinitiv/London Stock Exchange Group, and authors' calculations
Loan-to-deposit ratio (LTD)	Ratio of bank total loans to total deposits	Central Bank of Ireland and authors' calculations

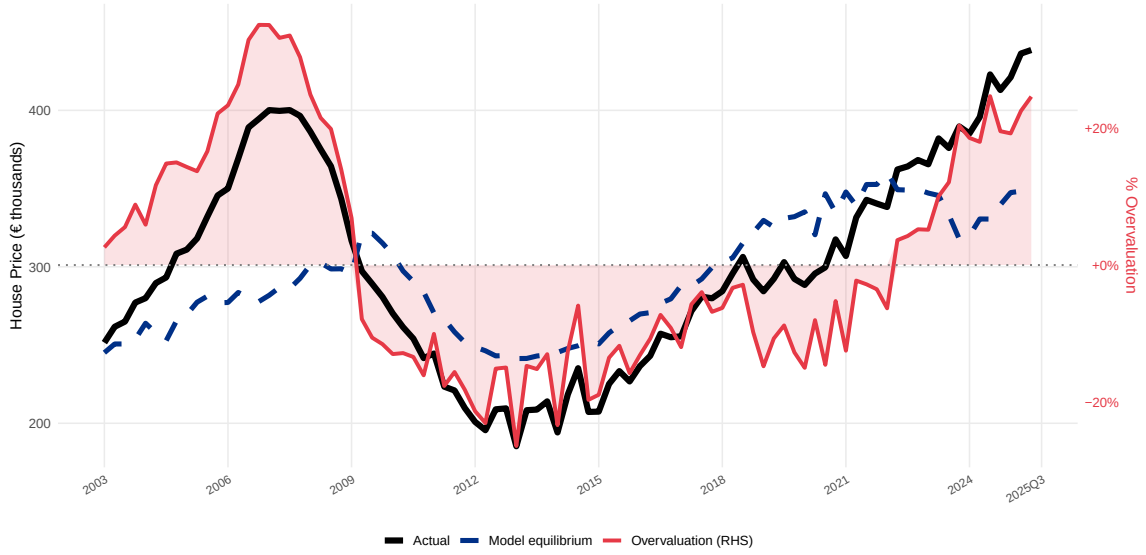
Table A2 Benchmark model estimates

	(1)	(2)	(3)
	pop 25–44	*pop 25–54*	*No demographic*
Constant	47.494***	48.318***	50.015***
	(8.505)	(8.430)	(8.349)
log(afd_t)	2.075***	2.084***	2.132***
	(0.301)	(0.301)	(0.300)
log(hs_t)	−3.925***	−3.998***	−4.123***
	(0.793)	(0.787)	(0.783)
pop_{2544}/pop	0.780**		
	(0.346)		
pop_{2554}/pop		0.852	
		(0.666)	
Observations	114	114	114
R^2	0.447	0.445	0.437
Adjusted R^2	0.432	0.430	0.427
RMSE	0.151	0.151	0.152

Notes: Dependent variable: log real house prices. Sample: 1997Q2–2025Q3. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

B Appendix: Figures

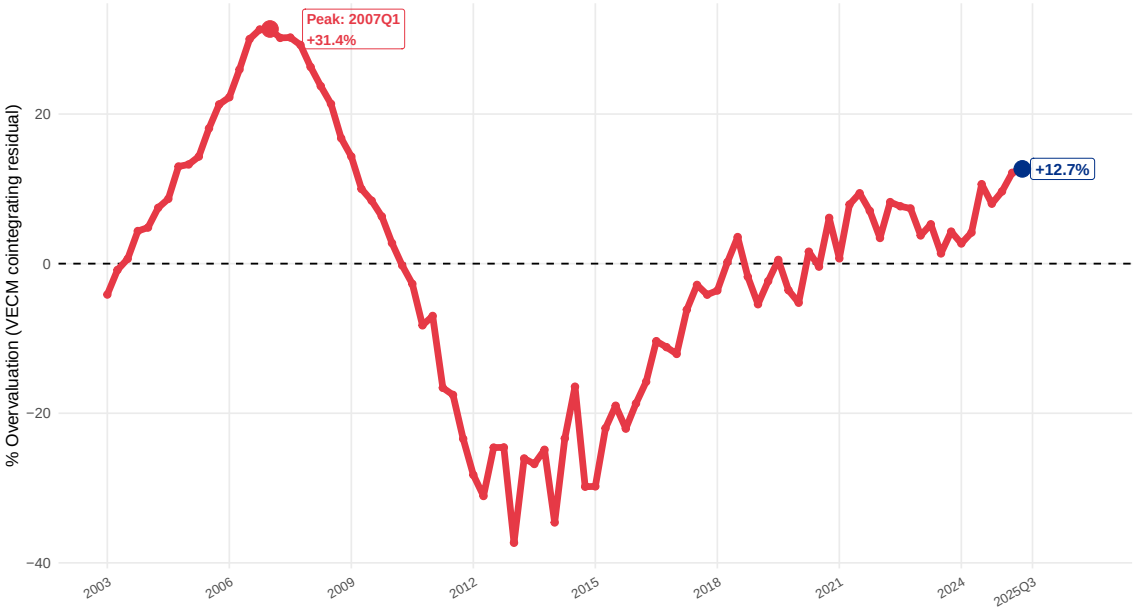
Figure B1 Benchmark model: Fitted value and overvaluation measure



Source: Authors' calculations.

Notes: The left-hand axis shows actual nominal house prices (solid black line) and the model-implied equilibrium price (navy dashed line). The right-hand axis shows the percentage deviation of actual prices from the model-implied equilibrium, with positive values indicating overvaluation and negative values indicating undervaluation. Shaded area denotes periods of under/overvaluation.

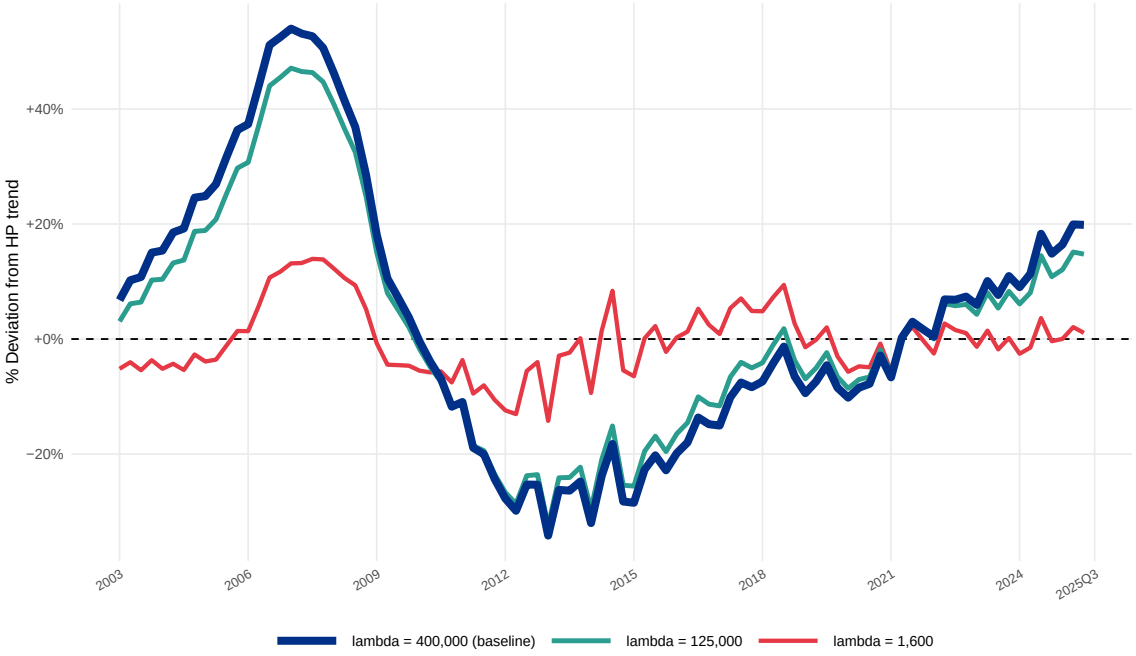
Figure B2 VECM based house price overvaluation measure



Source: Authors' calculations.

Notes: The overvaluation measure is defined as the demeaned residual from the cointegrating relationship for real house prices estimated over 2003Q1–2025Q3. Positive values indicate that actual house prices exceed the long-run equilibrium implied by the cointegrating relationship. The model is estimated following IMF (2016) using Johansen cointegration with lag order p =3.

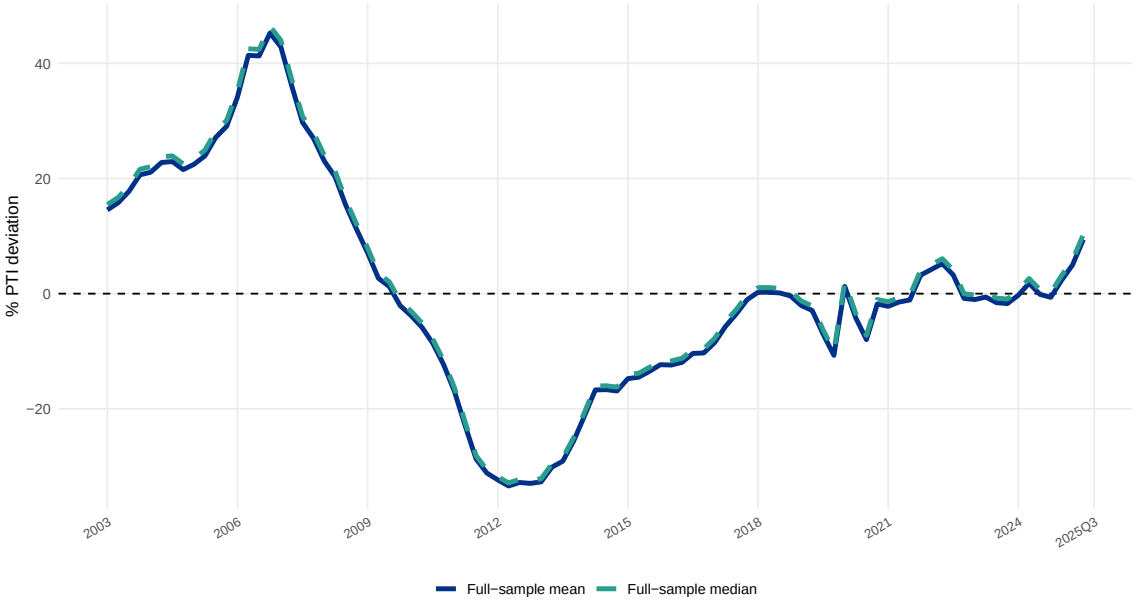
Figure B3 HP filter based house price overvaluation



Source: Authors' calculations.

Notes: Each line shows the deviation of actual nominal house prices from the HP-filtered trend under an alternative smoothing parameter λ. The baseline value of λ = 400,000 follows Drehmann et al. (2010) and is standard in central bank financial cycle analysis. The intermediate value of λ = 125,000 corresponds to a financial cycle approximately three times the length of the business cycle. The value of λ =1,600 is the standard business cycle parameterisation (Hodrick & Prescott, 1997) and is included for comparison only.

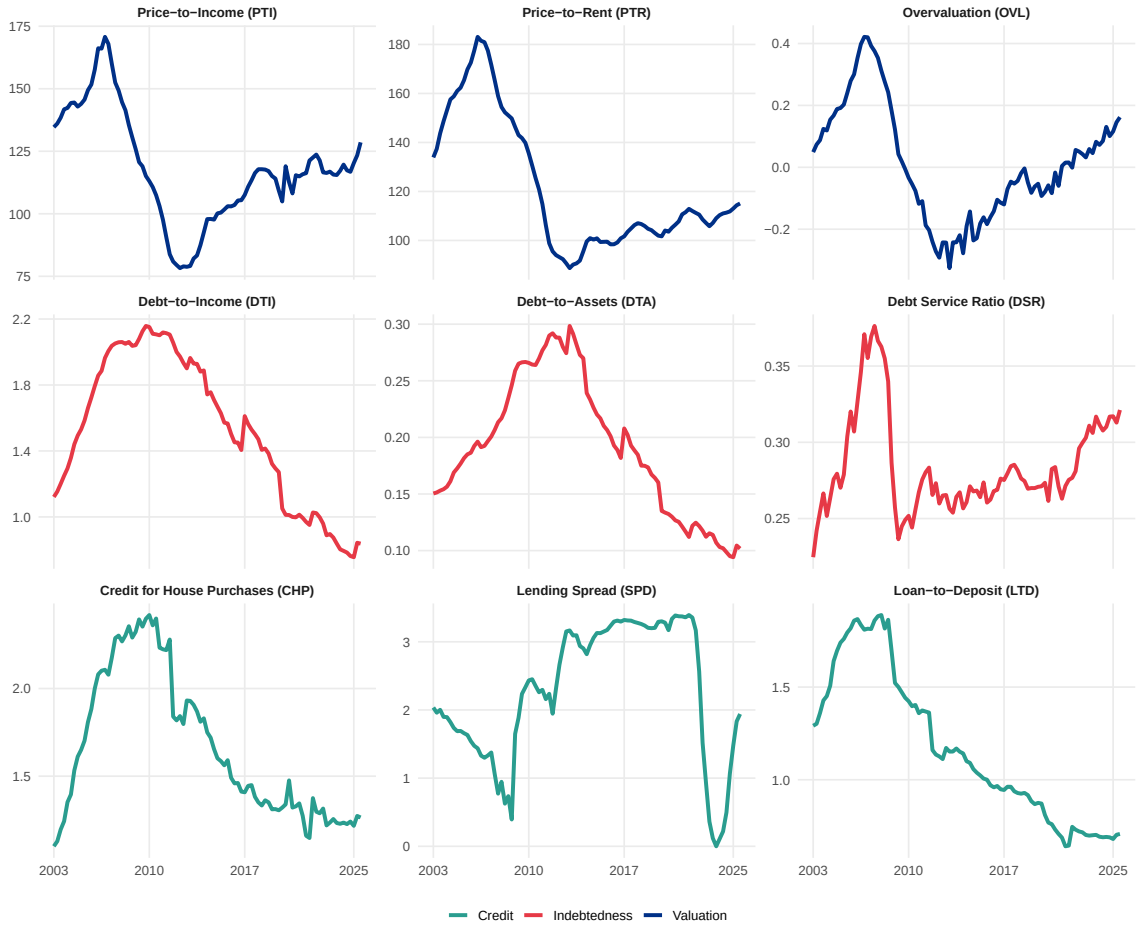
Figure B4 PTI based house price overvaluation



Source: OECD Analytical House Price Indicator and authors' calculations.

Notes: The overvaluation measure is defined as the percentage deviation of the OECD price-to-income ratio index from its full-sample mean and median over 1997Q1–2025Q3. The OECD PTI index measures the ratio of nominal residential property prices to nominal household disposable income per capita, normalised to 100 in the base year (2015Q2). The bold line shows the deviation from the full-sample mean; the faint dashed line shows the deviation from the full-sample median. Positive values indicate that the price-to-income ratio exceeds its long-run average; negative values indicate it is below.

Figure B5 Heat map and radar chart variables: Absolute values



Source: Central Bank of Ireland, OECD Analytical House Price Indicators and authors' calculations.

Notes: PTI and PTR are OECD indices (base year 2015Q2 = 100) measuring the ratio of nominal house prices to disposable income and rents respectively. OVL is the composite overvaluation measure expressed as a proportion (e.g. 0.16 = 16 per cent overvaluation). DTI is the ratio of total household debt to annual disposable income. DTA is the ratio of household debt to total financial assets. DSR is the ratio of annual mortgage repayments to disposable income. CHP is the ratio of credit for house purchases to GNI*. SPD is the lending spread in percentage points (mortgage rate minus money market rate). LTD is the ratio of total bank loans to total deposits.