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The costs and benefits of macroprudential mortgage policies – lessons from implementation in Ireland

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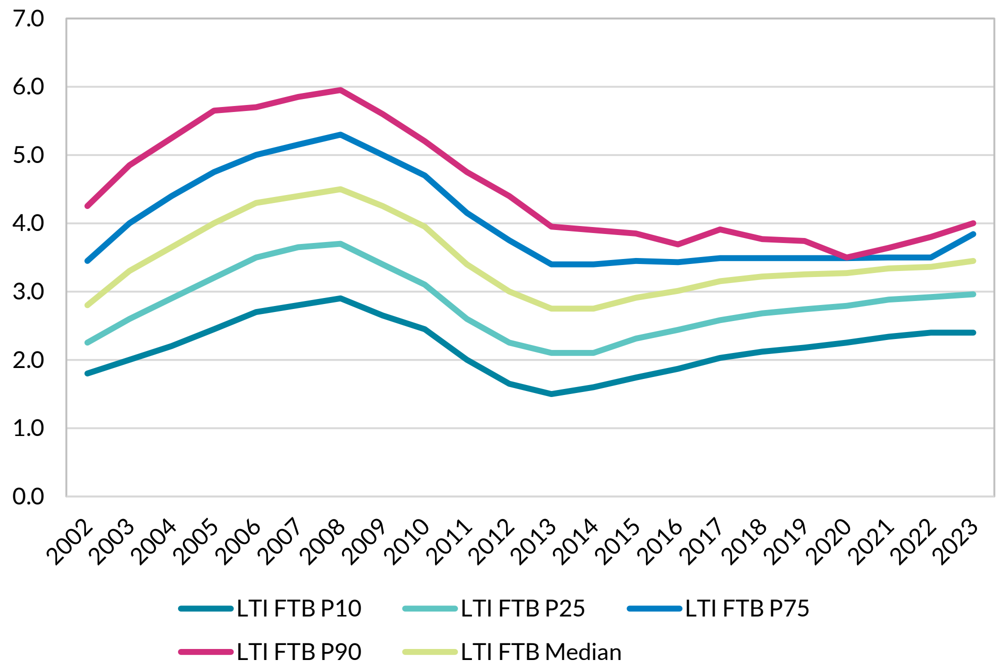
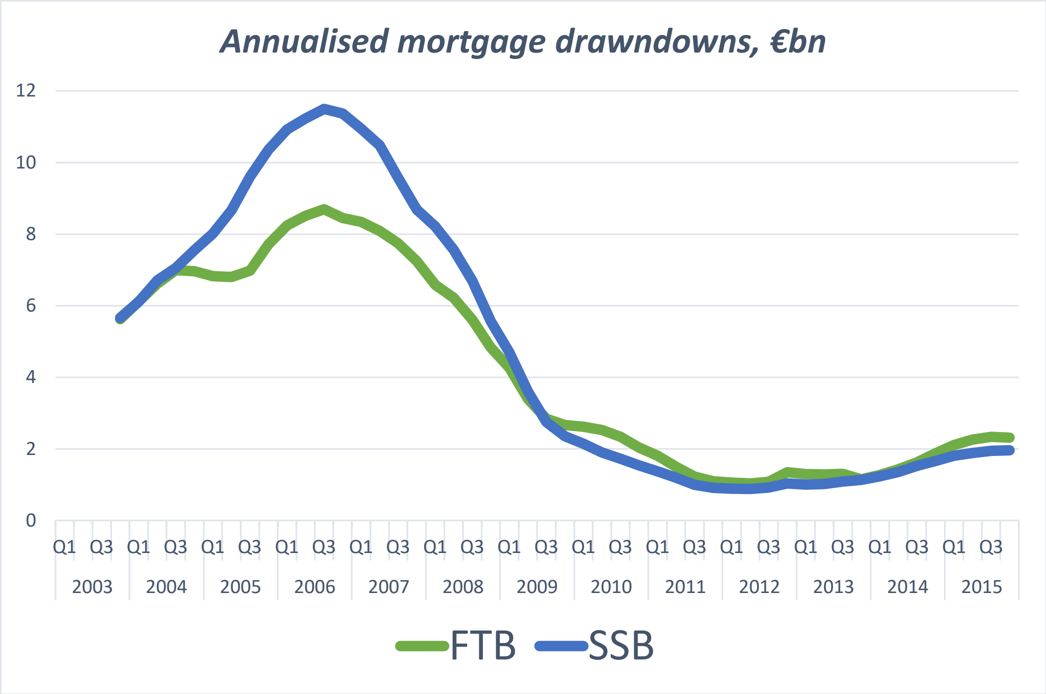
By 2014, Irish mortgage market was in early stages of recovery from post-GFC cycle

Right-tail LTI ratios had reached 6 during the pre-2008 credit boom….



Lending had doubled from 2003 to 2006 for home movers, but collapsed…



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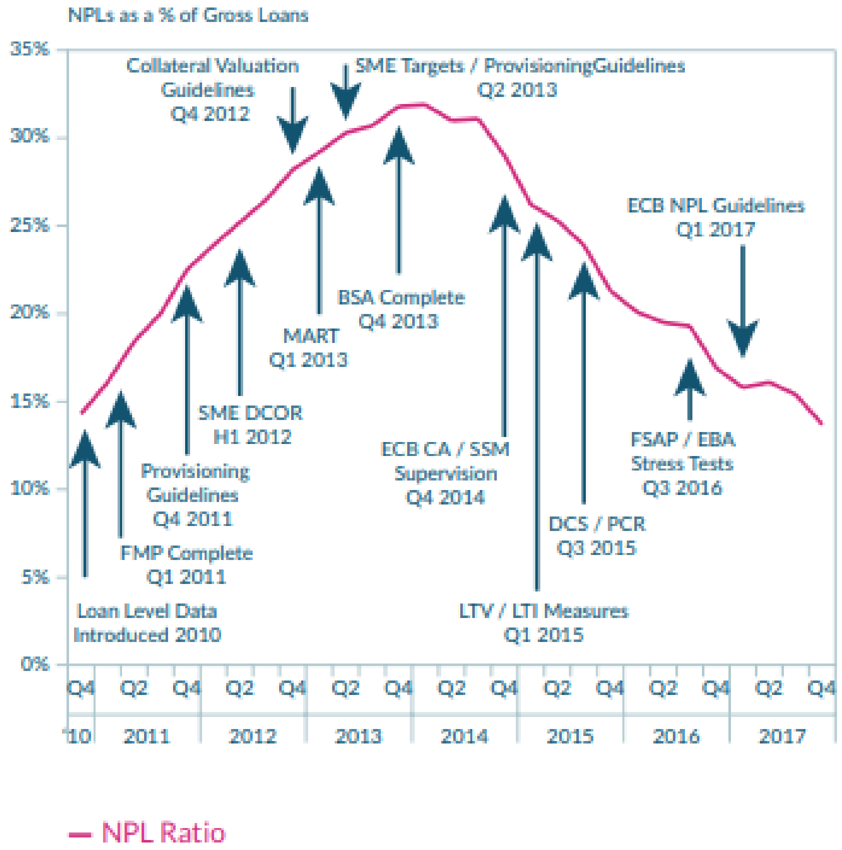
Bank balance sheet recovery was only in the initial stages by 2014, with NPL ratios having reached above 30%

Substantial regulatory interventions were required to ensure balance sheet repair

Chart 2: Retail Bank's NPL Ratio and Important Milestones



Source: Central Bank of Ireland regulatory returns.

Note: At Q3 2014 the EBA's definition of non-performing was introduced. Prior to this date an internal definition was used equivalent to impaired loans and/or arrears > 90 days.

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Policy introduction

- Announced late 2014, activated Feb 2015
- **Initial calibration:**
  - LTI: maximum mortgage of **3.5 times income** for principal home buyers
  - LTV differentiated:
    - First-Time Buyers ("FTBs"): **80-90%**, closer to 80% for more expensive properties
    - Movers ("SSBs"): 80%
    - Buy-to-let (households not borrowing for a principal home): 70%
  - **Allowances** to lend above limit (annual % per lender) varying by instrument and borrower type.

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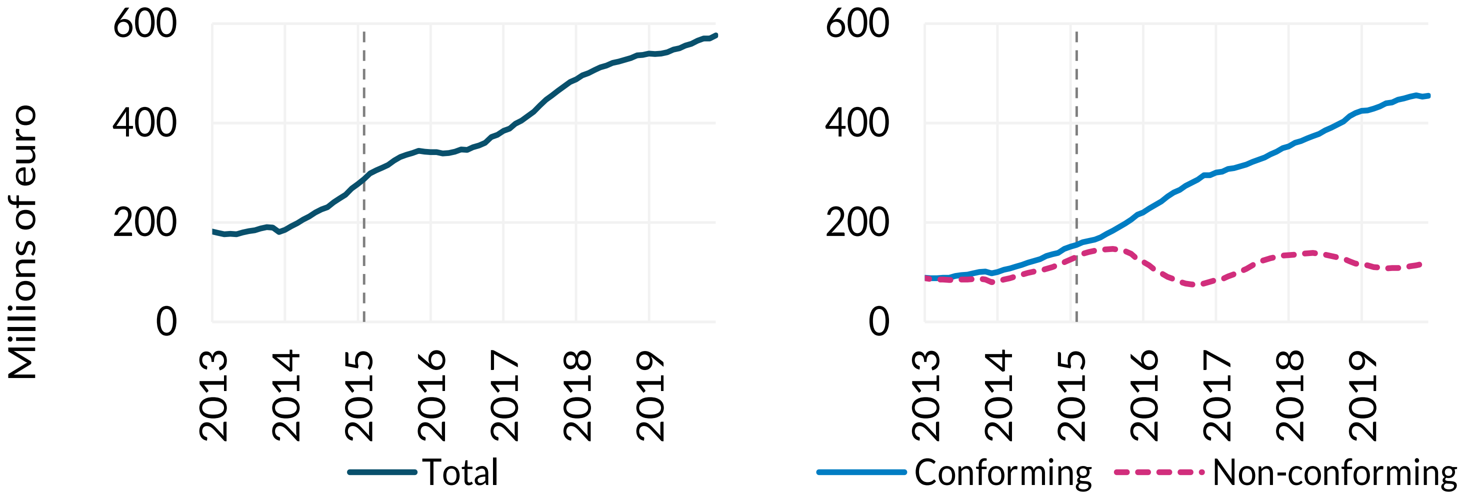
Credit growth continued after the introduction of the measures, with a shift to lending within the new limits

- Timing matters!
- Despite close to ½ of pre-policy new lending being above the limits introduced in 2015….
- Credit continued to grow in the context of a cyclical recovery
- Adjustment towards the new limits
- ***Counterfactual?*** measures introduced later in cycle, would they have constituted a shock that observably reduced new lending?

Figure 1: Monthly mortgage origination volumes, 2013 to 2019



Source: Central Bank of Ireland loan-level data.
Notes: 12-month rolling average of the euro value of mortgage issuance for house purchase. "Conforming" mortgages are below the LTV and LTI ratio limits under the 2017-22 calibration of mortgage measures. Vertical dotted line signifies introduction of mortgage measures.

Policy objectives at introduction

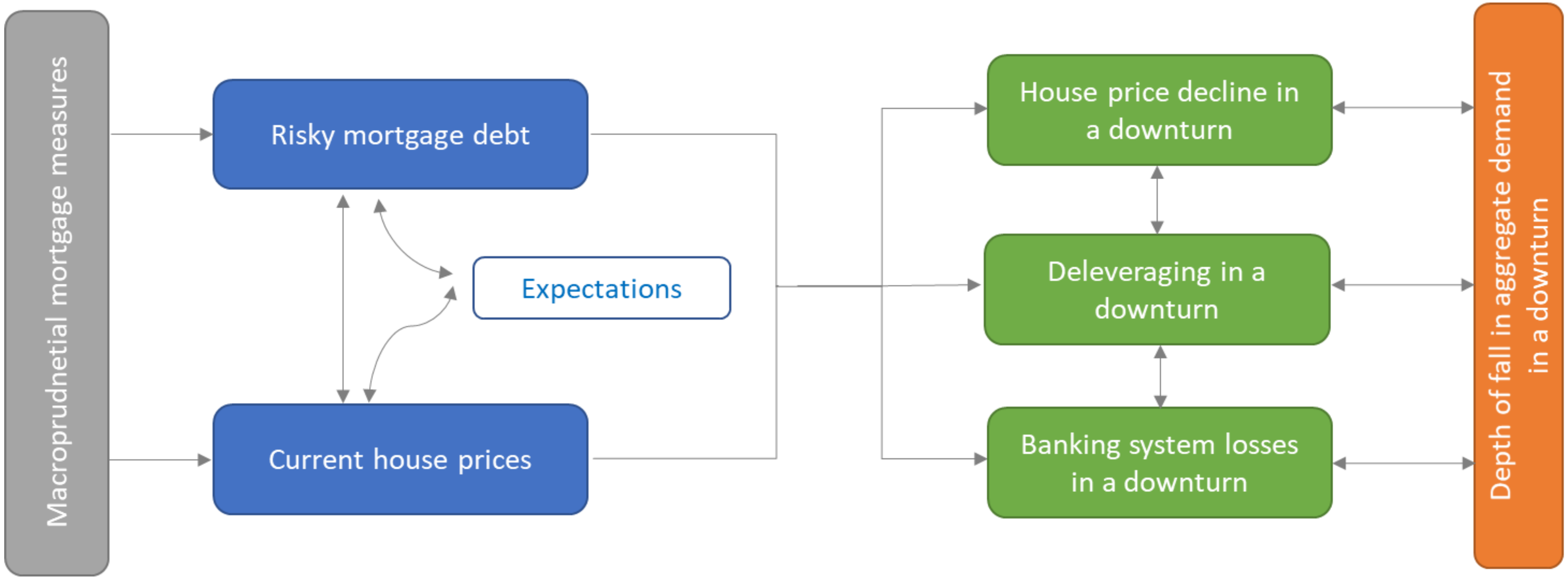
- **2015** introduction. MMs aim to achieve:
  1. Ensuring resilience of borrowers and lenders to adverse shocks
  2. Dampening the feedback loop between credit and house prices

2021-22 *Mortgage measures framework review*

- Couch measures within a **cost-benefit framework**, focussing more on the system-wide nature of the policy
- Communicate explicitly that the Central Bank will **take the system-wide costs of policy action into account** when calibrating policy.
- Respond with a **medium-term orientation** to slower-moving, structural forces in housing/mortgage market
- Some **key questions** for the review:

1. What are the benefits of the mortgage measures?
2. What are the costs of these measures that the Central Bank should take into account when calibrating policy?
3. How have both the benefits and the costs evolved since 2015?
4. How can policy weigh up the relative weight or evolution of costs versus benefits?

The macro benefits of macroprudential mortgage policies (Aikman et al., 2021)



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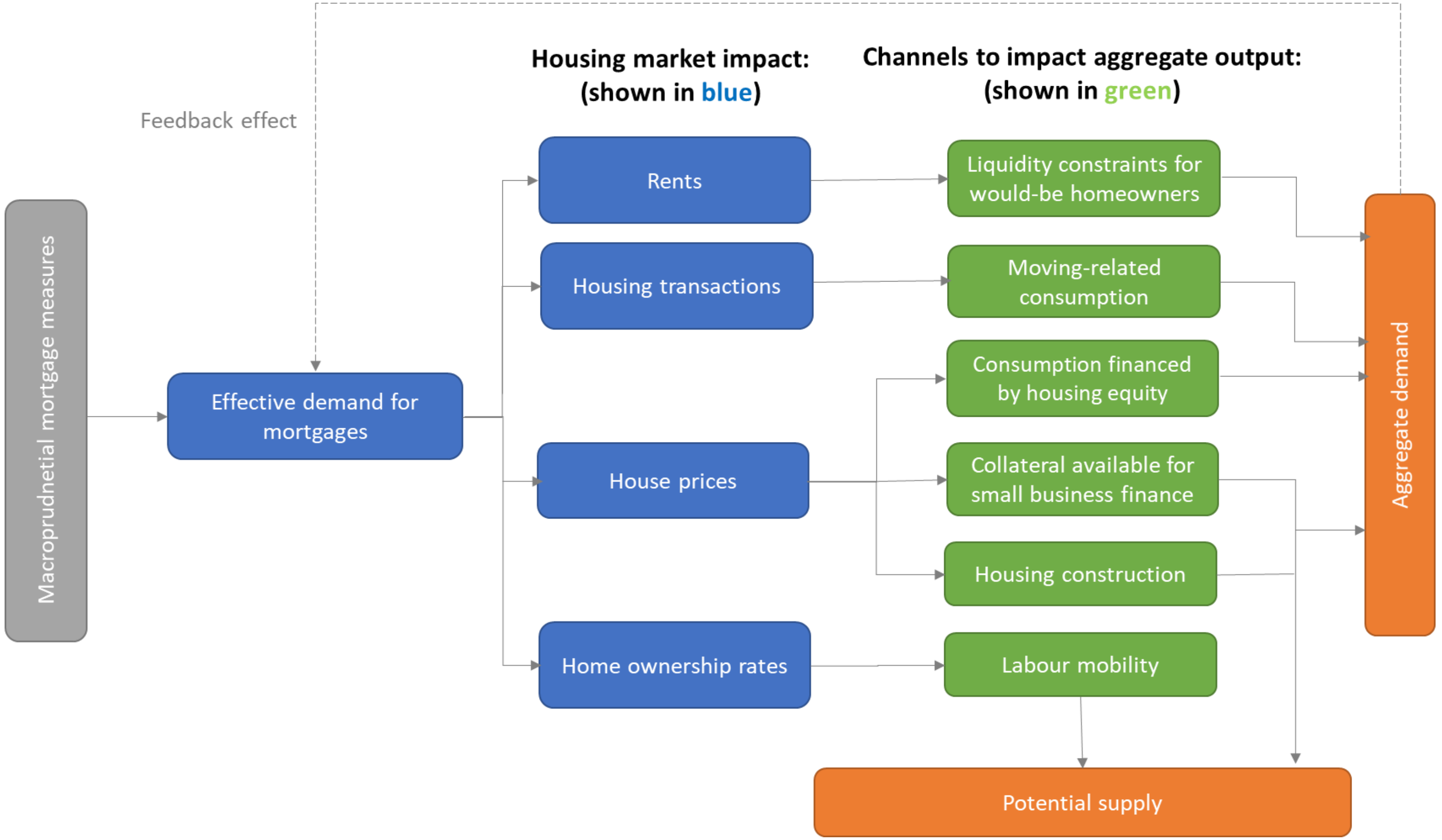
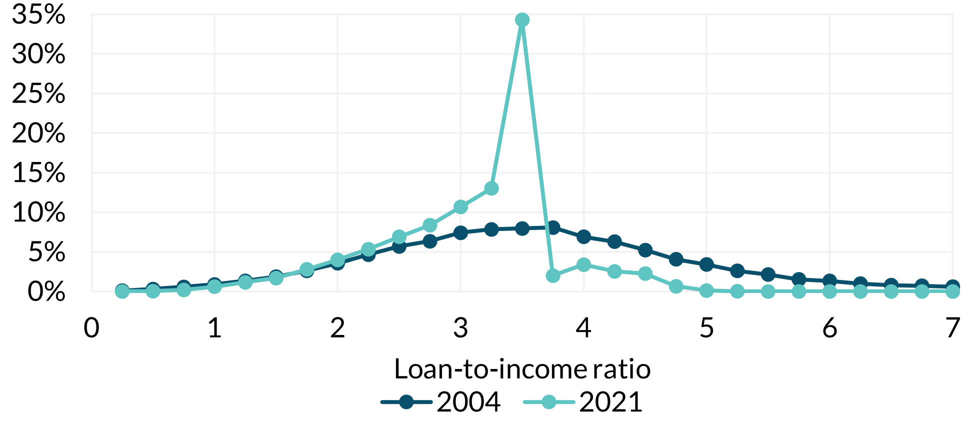
The macro costs of macroprudential mortgage policies (Aikman et al., 2021)



Were the benefits of policy action accruing?
Changes in lending distribution and Covid experience are highly suggestive

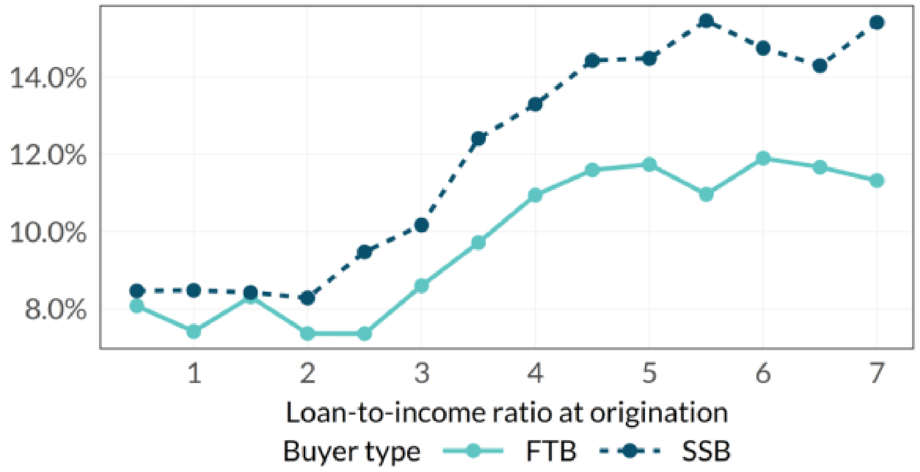
([Central Bank framework for macroprudential mortgage measures](); [Gaffney and Greaney, 2020]())

Figure 7: Distribution of LTI ratios on new mortgage issuance, 2004 and 2021



Source: "The Central Bank's framework for the macroprudential mortgage measures", Central Bank of Ireland, October 2022.
Notes: Figures cover mortgage issuance during 2004 and 2021. Percentage of loans at each point on LTI distribution, new lending in each of 2004 and 2021.

Figure 8: Share of mortgages taking COVID-19 payment breaks by originated LTI ratio



Source: Gaffney and Greaney (2020)
Notes: Outstanding mortgages to owner-occupiers as at June 2020. Each data point represents loans with LTI at origination in a bracket of width 0.5, ending at and including the value depicted in the chart.

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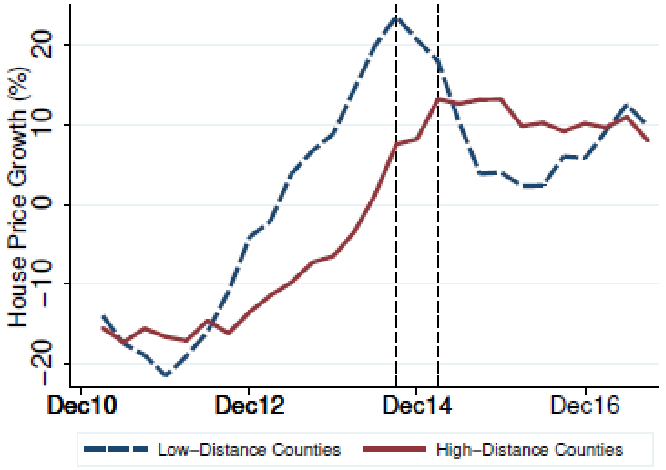
While house prices did rise considerably from 2015, amplification/expectations channels were weakened

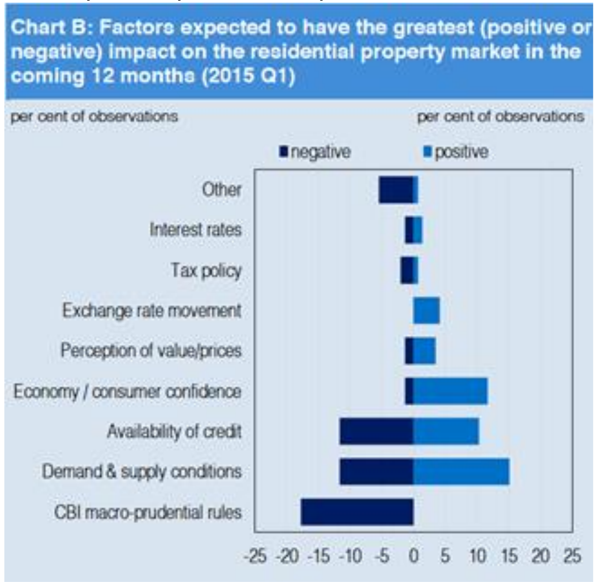
(Acharya et al., 2022)

Figure 10: Regional variation in house prices around the introduction of the measures



Source: Acharya et al. (2022)
Notes: The graph shows the evolution of annual house price growth between January 2011 and June 2017 for “low-distance” and “high-distance” counties. Distance is defined as the gap between LTV and LTI ratios in 2014 and the limits imposed by the Central Bank in 2015. Counties are grouped by distance category based on whether they are below or above the median value of the gap. Vertical dashed lines indicate the first public discussion about the limits and their implementation date.

Figure 11: Drivers of house price expectations upon the introduction of mortgage measures



Source: Central Bank of Ireland *Macro-Financial Review* 2015:I
Notes: Based on Central Bank – SCSI Quarterly Property Survey of property market professionals, economists, analysts and academics.

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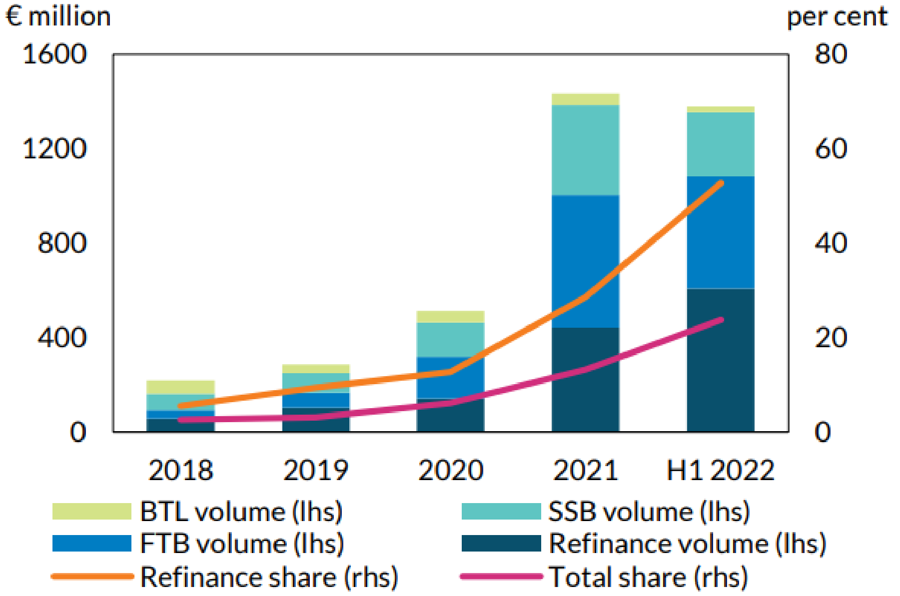
Policy benefits? Ensured the role of NBFIs in amplifying the lending cycle was contained

- Rising role of non-bank lenders since the GFC.
  - Changes in r* and monetary policy
  - Tightening bank regulation
  - Increased technological innovation and financial integration
- Potential for non-banks to drive the risk-taking channel of monetary policy.
- Irish experience: market shares of NBFI grew significantly, contribution to price competition since 2018 (Gaffney et al., 2022).
- NBFI were covered by measures, restricting their role in loosening credit conditions.

Figure 12: Share and volume of non-banks in new mortgage issuance, by market segment



Source: Central Bank of Ireland *Financial Stability Review* 2022:II
Notes: "Refinance" covers borrowers who switch lenders without purchasing a new property.

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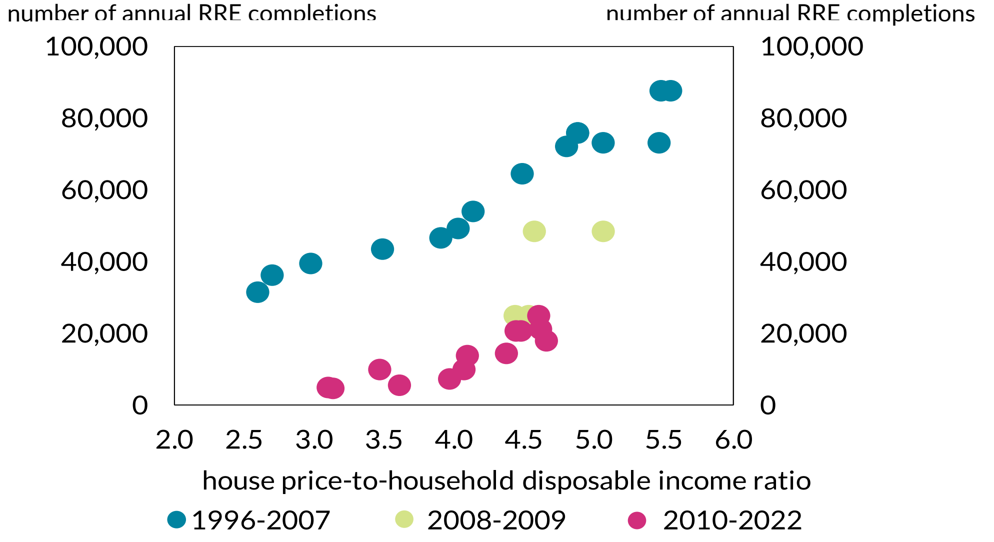
The source of constraints? Supply elasticity in housing reduced post-GFC
New home supply unable to keep up with population growth
Driven by rising costs of construction

Fewer houses are being built now, for a given level of house prices relative to incomes, than in the past



Source: Kennedy and Myers (2019).
Notes: Horizontal axis: Estimated ratio of house prices to household disposable income. Vertical axis: housing units completed per year. Estimates of completions have been obtained by taking total estimates of electricity connections and removing average number of connections in each year that are unrelated to dwelling completions. Findings are robust to use of raw electricity connections data, or to using proportional estimates of completions. Last observation 2022.

Over the past decade, growth in the housing stock has fallen short of growth in population growth

Source: CSO and Central Bank of Ireland calculations.
Notes: Percentage point difference between growth in stock of housing and growth in population. The past decade has seen growth in the housing stock falling short of population growth, with associated slowdown in structural trend of falling average household size. Last observation 2022.

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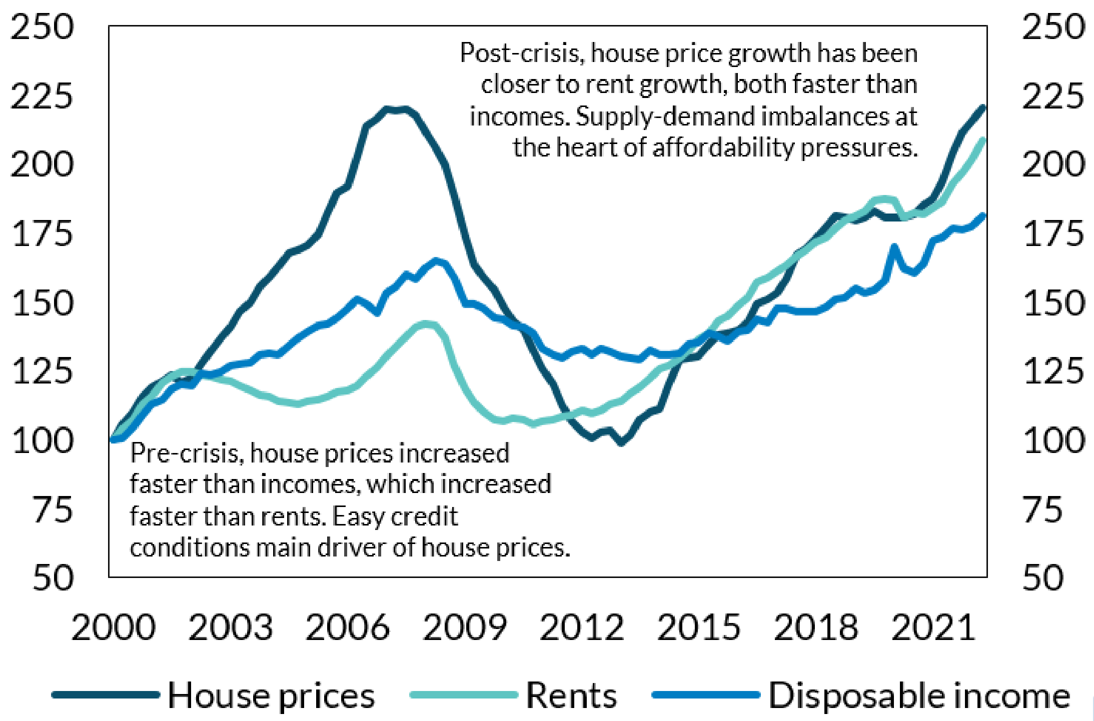
Source of rising costs of policy action?
Due to structural forces, house prices and rents outstripped income growth for a decade in Ireland, making the LTI limit more binding….

(Central Bank framework for macroprudential mortgage measures)

- The costs of a fixed MaP stance can increase due to structural changes in the housing market.
- Structural housing supply-demand imbalance has emerged since the GFC.
- Long-term HPI ratios are higher now than when measures were introduced, *for reasons unrelated to the mortgage market and macroprudential policy.*
- These rising HPIs increased the costs of an LTI of 3.5 over time (relative to counterfactual).
    - Constraints on borrowers
    - Potential reduction in long-term homeownership
    - Transaction levels in the housing market



Source: CSO and Central Bank of Ireland calculations.
Notes: Last observation house prices and rents, and household disposable income 2022Q2.

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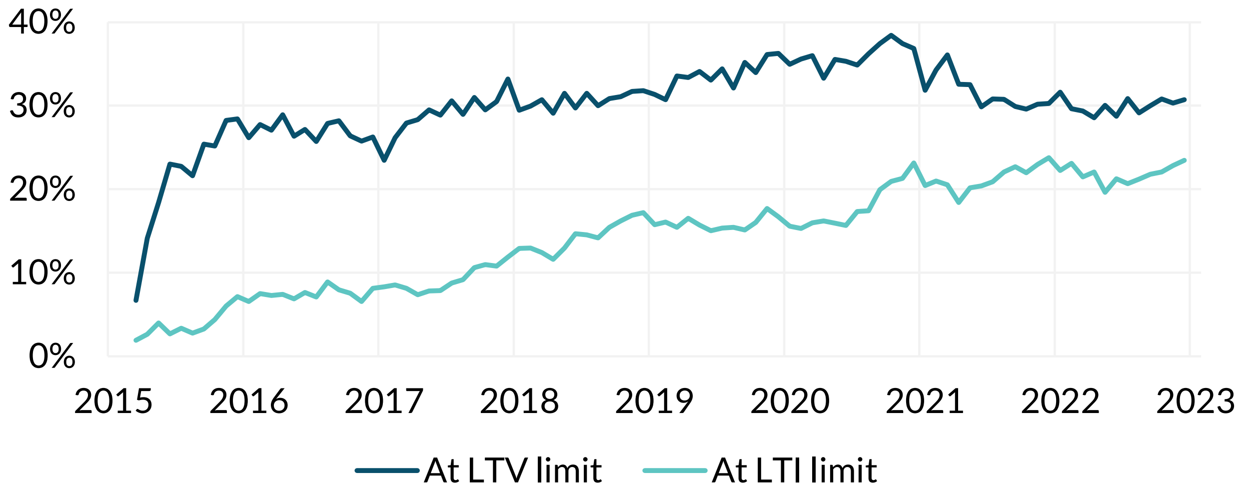
Costs of policy action:
The measures, in particular the LTI limit, became more binding over time

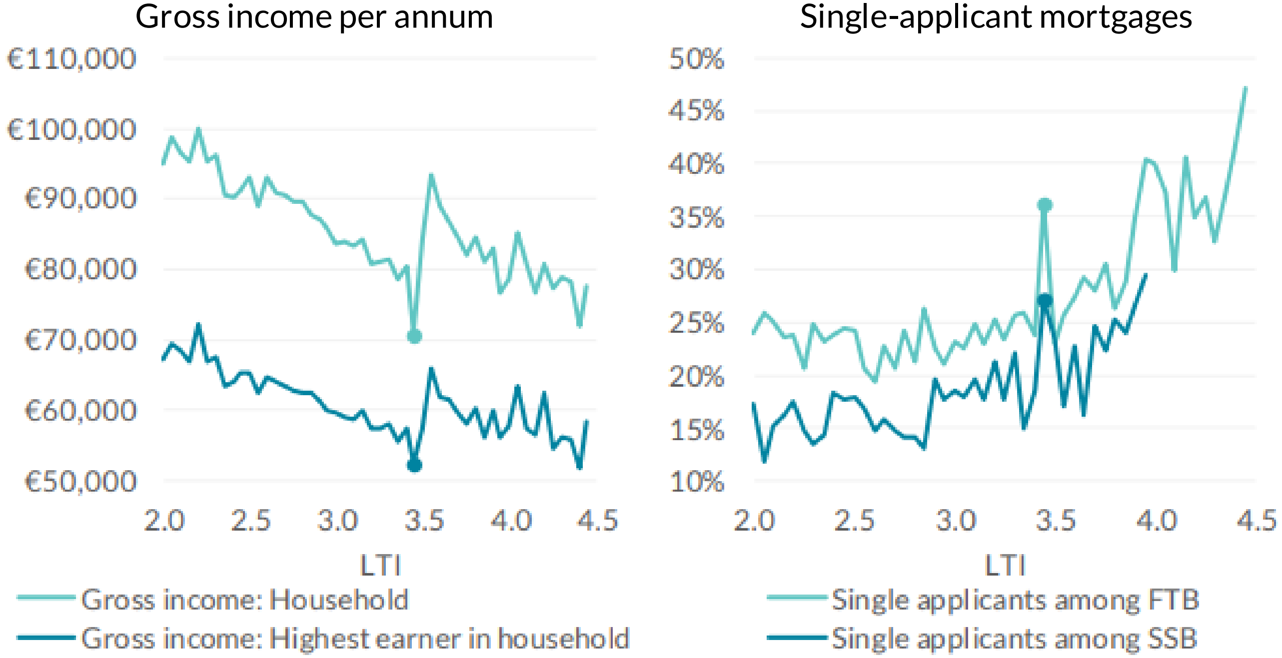
Figure 3: Shares of mortgage issuance to owner occupiers at the LTV and LTI limits



Source: Gaffney and Kinghan (2021), updated using Central Bank of Ireland data.
Notes: The shares of total euro value of mortgage issuance to owner-occupiers in-scope of mortgage measures between March 2015 and December 2022. "At LTV limit": at the relevant LTV limit based on buyer type, year of issuance and (between 2015 and 2016) property value, or with a LTV ratio below but within 1 per cent of that limit. "At LTI limit": between 3.45 and 3.5 LTI.

Credit constraints?
Borrowers at the LTI limit were lower income and more likely to be single

Figure 4: Incomes and applicant status of mortgage borrowers, by LTI band, 2018-19



Source: Gaffney (2019)

Notes: Figures are based on mortgage issuance between January 2018 and June 2019. Each point depicts a band of LTI ratios of width 0.05. The large dots highlight borrowers with LTI ratios above 3.45 and either at or below 3.5. SSB series is omitted above 4 LTI due to low frequency in data.

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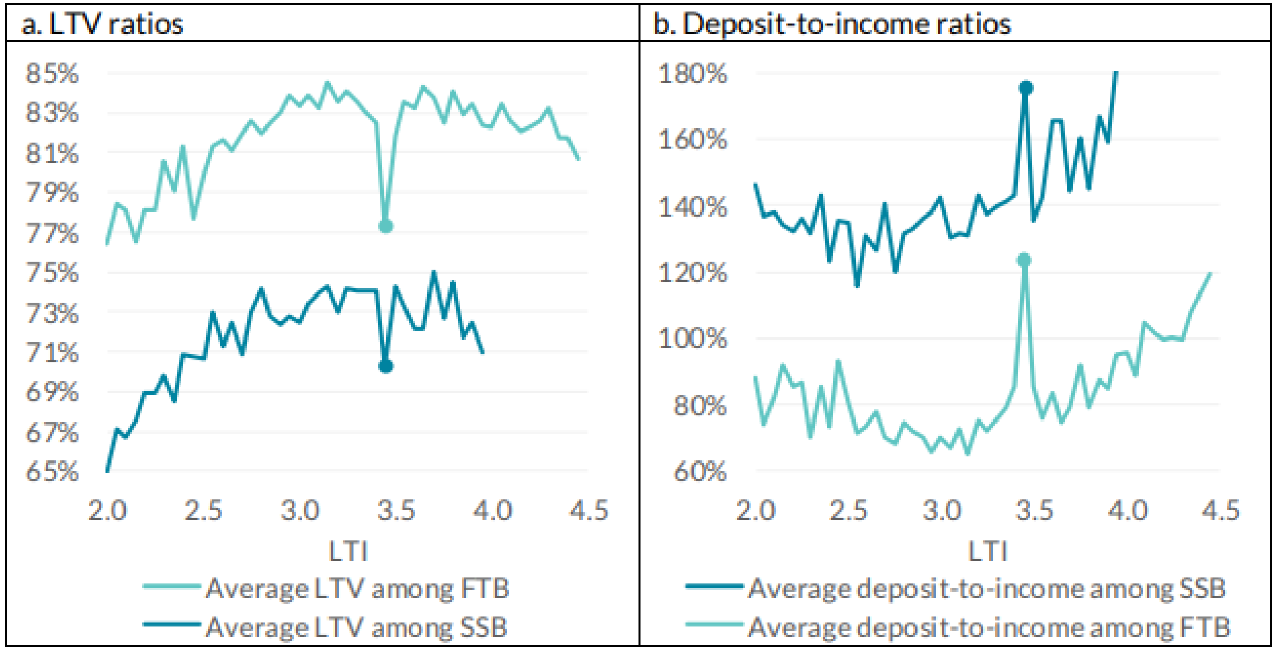
The LTI limit was a de-facto LTV limit for many, requiring disproportionately large downpayments to conform

Figure 5: Discontinuity in LTV and deposit-to-income ratio distributions at the LTI limit

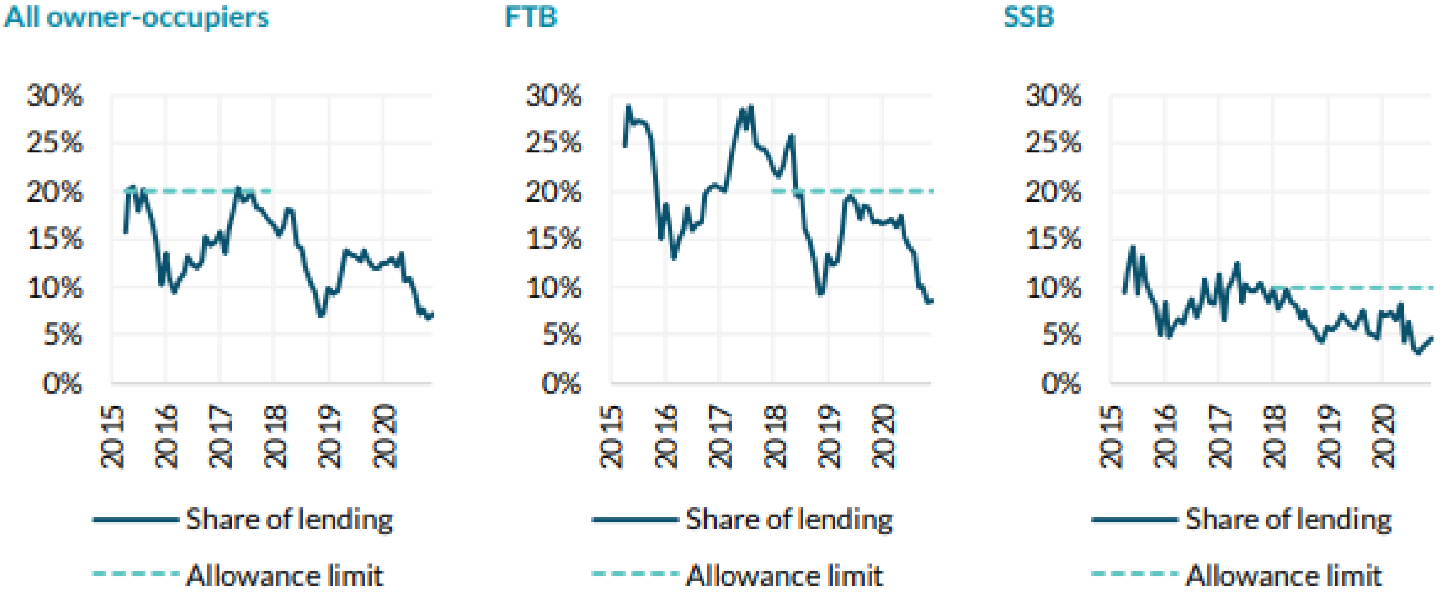


Source: Gaffney (2019)

Notes: Figures are based on mortgage issuance between January 2018 and June 2019. Each point depicts a band of LTI ratios of width 0.05. The large dots highlight borrowers with LTI ratios above 3.45 and either at or below 3.5. SSB series is omitted above 4 LTI due to low frequency in data.

The allowances: key to alleviating credit constraints for certain highly-impacted borrower groups. Implementation challenges grew from 2015

Figure 6: LTI limit: share of lending per month above limit and maximum allowance share per year



Source: Central Bank of Ireland Monitoring Templates Data.
Note: LTI limit was 3.5 times gross annual income. Allowance basis was all owner-occupiers in 2015-17, followed by separate FTB and SSB bases from 2018 on.

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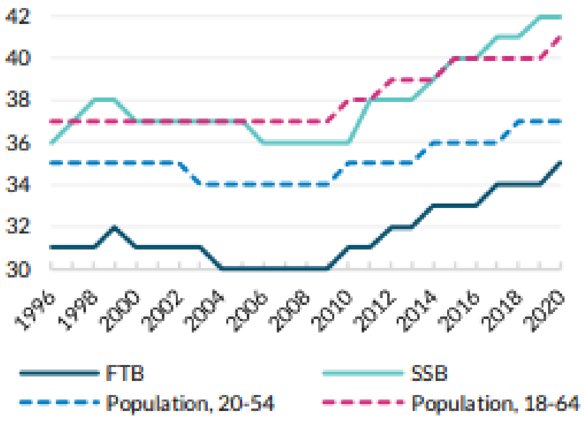
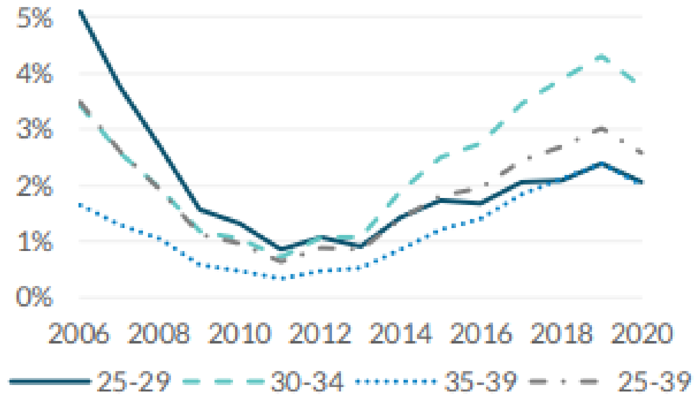
Impact in aggregate? Delayed borrower entry to the mortgage market had been a feature since the GFC. Trend continues post-2015.
Despite the impact of LTI tightness on borrowers, the share of "FTB age" households entering the mortgage market rose steady from 2011 to 2019 ([Gaffney-Kinghan, 2021]())

Figure 3: Median age of home purchase mortgage borrowers and the population of Ireland, by year



Source: Central Bank of Ireland Loan-Level Data; Central Statistics Office Population and Migration Estimates.

Figure 4: New FTB borrowers per year as an estimated share of the population, by key age groups



Source: Central Bank of Ireland Loan-Level Data; Central Statistics Office Population and Migration Estimates.
Note: Number of borrowers on new FTB mortgages per year as a share of the estimated population of Ireland within age groups.

Outcome of framework review – space for higher borrowing multiples

- Taken in its totality, and incorporating the judgment around the gradual increase in the costs of the measures since their introduction due to structural factors relating to the imbalance between housing supply and demand, **the Central Bank concluded from the impact assessment that there was policy space for a proportionate recalibration of the measures**.

- In addition to the empirical analysis, **policymaker judgement was guided by the macro-financial outlook, the wider set of policies implemented in the Irish housing market, and broader factors that determine the resilience of the household sector and the financial system**.

- Looking forward, **longer-term structural developments will also inform future decisions**, including demographic changes, interest rates and longer-running structural changes on the supply side of the housing market.

Updated calibration for 2023

Macroprudential Framework for Mortgages*
Details of the current and previous LTV and LTI regulations (current regulation is in force since 1 Jan 2023)*

Borrower Type	First Time Buyers (FTBs)		Second and Subsequent Buyers (SSBs)		Buy-to-Let (BTL)	
	Current	*Previous*	*Current*	*Previous*	*Current*	*Previous*
Limits under the mortgage measures	LTI: **4x** LTV: 90%	LTI: 3.5x LTV: 90%	LTI: 3.5x LTV: **90%**	LTI: 3.5x LTV: 80%	LTV: 70%	LTV: 70%
Allowance share above the limits	15%	LTI: 20% LTV: 5%	15%	LTI: 10% LTV: 20%	10%	10%
Exemptions	Switcher loans are exempt from the mortgage measures. The LTI limit does not apply to lifetime mortgages. The LTV limit does not apply to negative equity mortgages.					

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Outcomes in 2023

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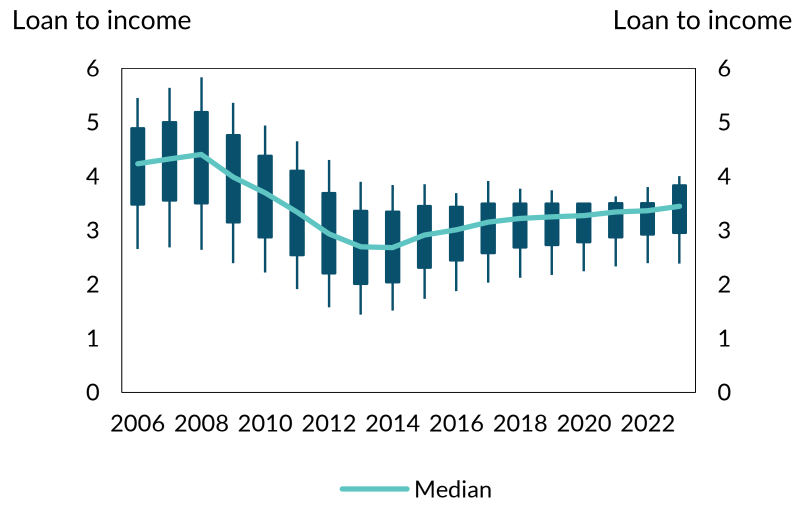
Lending standards being maintained relative to historic experience; allowances a less important feature of the market

Lending at high income multiples remains contained by macroprudential LTI limits

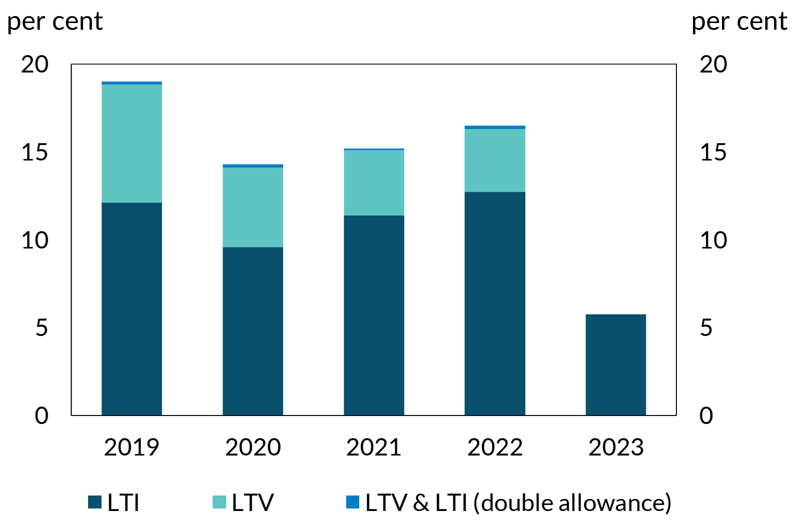
Loan to income distribution on Irish mortgages, 2006 to 2023



Source: Central Bank of Ireland.
Note: Chart shows the distribution of LTI, based on the number of loans, across the 90th, 75th , 50th, 25th and 10th percentiles, respectively. Data for 2006-2014 are for all mortgage agreements originated by retail banks - excluding split mortgages. Data for subsequent years relates to loans in-scope of the mortgage measures captured through the Central Banks Monitoring Templates Data. Last observation 2023.

Lending with allowances has declined, consistent with expectations during framework review

Share of PDH in-scope mortgage lending with an allowance

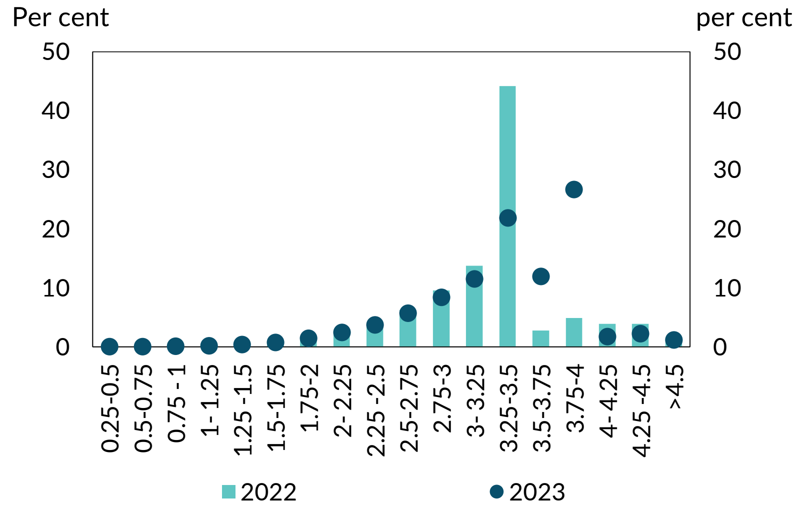


Source: Central Bank of Ireland monitoring templates data.
Notes: share of mortgage value. In-scope PDH loans only

First Time Buyer borrowing is moving towards the new LTI limit, and continues to grow in aggregate but at a slowing pace

Loans that would have clustered at an income multiple of 3.5 are now closer to the new limit of 4

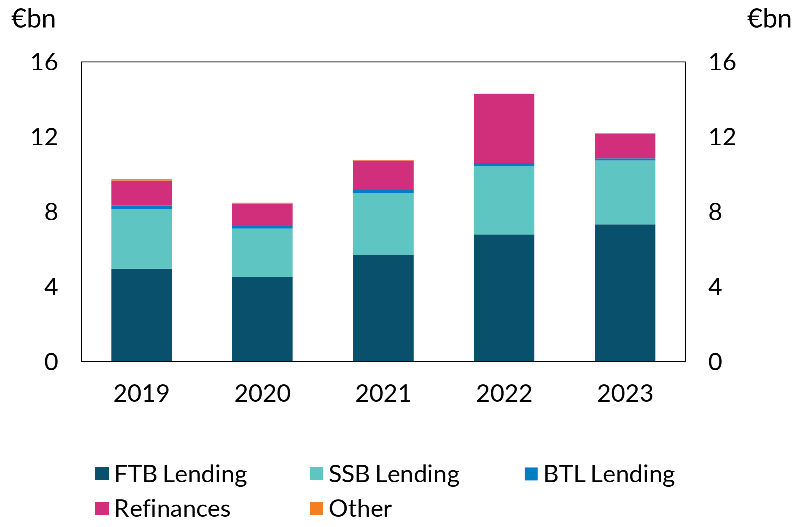
Loan to income distribution on FTB mortgages, 2022 to 2023



Source: Central Bank of Ireland.
Note: Share of mortgage value. FTB in-scope property purchase and self-build lending only.

FTB lending continues to grow, but at a slowing pace

Annual mortgage lending by borrower group



Source: Central Bank of Ireland monitoring templates data.
Notes: Includes all new loans. Refinance category includes loans both in and out of scope of the mortgage measures.

Tentative summary from one year of a refreshed framework

- Substantial shift in FTB lending from LTI of 3.5 to 4
- Similar for SSB lending from LTV of 80 towards 90
  - Indicative that constraints were being felt at previous limits; now being alleviated?
- Resilience continues to be enshrined?
  - Lending above an LTI of 4: 2006 – **55%**; 2023: **5%**
- House price impact?
  - House price growth picked up in late 2023. y-on-y growth now 6-7%.
  - Cause? Strong population growth; full employment; ongoing weakness of housing supply.
    - *Role of higher lending multiples hard to gauge relative to other key fundamentals*
- Impact on transactions, access to the housing market, homeownership, housing supply?
  - Longer-term orientation and further research required
- Key feature of refreshed policy architecture: commitment to review only periodically. More medium-term certainty on stability of lending conditions.

"Frontier" work – estimating relative costs and benefits

- Costs and benefits in a single measurement framework.
- Impose shocks to LTV and LTI ratios into Central Bank's semi-structural model of IE economy. Delivers outcomes for consumption, HP, HHDTI, domestic demand, etc.
  - **Benefits**: reductions in 5th percentile "consumption at risk" from paths for HP, HHDTI, etc. after LTI/LTI shock.
  - **Costs**: reductions in central outcome consumption within semi structural model.
- Policymaker judgement: how to compare C and B values for consumption? What weight to place on each?
- *Athanasopoulos, McInerney, Wosser (wip)*

- ***Illustrative Example*** on right: for a given shock to LTI+LTV, comparison of "net benefit" for cost weightings between 0 and 1.
- Yellow line: high credit growth regime; Orange: full sample average.
- Interpretation:
  - if policymaker C:B weighting is 0.1 (or ratio of 1:9), net benefits are close to *50bps of annual consumption growth* in a high credit growth regime.
  - Costs and Benefits are equalised at weighting of 0.82 (high credit) or 0.6 (average regime).
  - → even if a policy maker cares four times as much about reducing central outcomes compared to alleviating tail risks, the LTV/LTI implementation is still policymaker-welfare-improving in a high credit regime