How Does Mortgage Market Structure Affect the Transmission Mechanism and Effectiveness of Monetary Policy?

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Micro Data to Macro Implications and How Central Bank Policies Should Reflect Them

The Importance of Mortgages

- Mortgages are the largest household liability in the US, and in most other developed countries including Canada.

- Mortgage rates are the main direct channel through which monetary policy affects household consumption.

- Mortgage rates also have a strong impact on the construction industry.

- Problems with mortgage lending were at the heart of the global financial crisis in 2008-09.

TABLE 2—INTERNATIONAL COMPARISON OF THE ALLOCATION OF HOUSEHOLD WEALTH

	USA	Canada	France	Germany	Italy	Netherlands	Spain	UK
Retirement assets and life insurance	13.3	24.1	6.1	10.5	1.5	16.8	1.4	25.1
Deposits and transaction accounts	11.6	9.9	22.0	30.0	11.9	21.3	10.5	5.9
Other financial assets	2.1	1.2	1.0	3.5	0.3	0.8	0.7	0.8
Mutual funds	1.3	1.3	0.7	2.4	0.6	1.6	0.4	0.3
Directly held stocks	1.3	1.0	1.0	0.9	0.2	0.6	0.5	0.6
Bonds	0.5	0.2	0.1	0.6	1.6	0.6	0.1	1.1
Main residence	40.6	31.9	38.9	29.9	53.2	43.3	61.2	34.6
Vehicles, valuables, and other assets	22.5	22.6	18.5	13.4	19.1	11.1	8.6	28.7
Private businesses	3.5	2.6	2.7	2.0	3.4	1.7	3.2	NA
Other real estate	3.2	5.2	9.1	6.7	8.2	2.2	13.3	2.8
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mortgage debt for primary residence	52.7	38.1	31.5	33.8	35.5	60.6	48.3	51.1
Vehicle, student loans, and other debt	31.2	28.2	44.5	32.7	50.8	22.5	35.5	34.2
Credit card debt	12.1	12.4	NA	2.3	3.0	1.1	3.4	9.8
Other debt secured with real estate	3.3	5.4	15.7	9.5	4.7	2.4	12.2	4.8
Overdrafts and credit lines	0.7	15.9	8.3	21.7	6.2	13.4	0.5	NA
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct and indirect risky assets	38.2	50.3	22.6	29.0	18.5	40.2	15.7	42.2
Direct and indirect equity	21.2	26.0	9.2	8.6	6.2	16.2	6.2	21.2

Notes: We calculate the respective share of each wealth category relative to the total asset and debt holdings of the household and report averages across the population. The top part of the table refers to financial and nonfinancial assets and the bottom part to mortgage and non-mortgage debt. Retirement assets include all types of defined contribution plans (public, occupational, or private) which have an account balance. NA denotes asset or debt categories for which holdings are not separately classified, or for which data has not been collected.

Source: Campbell (2016)

The Mortgage Channel of Monetary Transmission

- The mortgage channel is not about intertemporal substitution, but about **redistribution** across agents (Auclert 2019).

- The mortgage rate affects monthly payments by borrowers but also payments received by lenders. There is an aggregate effect if borrowers change their spending more than lenders do.
    1. Borrowers are domestic residents, while some lenders are foreigners with a higher propensity to spend on foreign rather than domestic goods.
    2. Borrowers have a high marginal propensity to consume (MPC) because they are borrowing-constrained, while lenders have a low MPC because they are unconstrained permanent income consumers.

- The second argument works only if mortgage payment changes are **temporary**. If they are permanent, lenders adjust their consumption one-for-one, perfectly offsetting the effect on borrowers.

ARMs, FRMs, and the Mortgage Channel

The mortgage channel works better for adjustable-rate mortgages (ARMs) than for fixed-rate mortgages (FRMs) (Di Maggio et al 2017).

1. ARM payments are linked to the short rate but FRM payments are linked to the long-term mortgage rate which typically moves less.

2. ARM payments change for all borrowers, but FRM payments change only for new borrowers and (on the downside) refinancers.

3. The change in ARM payments is temporary while the change in FRM payments is long-lasting, so FRM lenders will adjust their consumption more, offsetting the effect on borrowers.

Who Refinances?

- In most FRM systems, refinancing requires positive home equity and an adequate income and credit score.
  - Hence, rate cuts have the weakest impact on regions with depressed home prices and high levels of unemployment (Beraja et al 2019).
  - The mortgage channel of monetary transmission is weakest where we want it to be the strongest!
- Refinancing also varies with borrower sophistication.
  - Effect can be measured in Denmark, where refinancing right is not contingent on home equity, income, or credit score (Andersen et al 2020).
  - Helps to explain racial differences in mortgage rates paid by US borrowers (Gerardi, Willen, and Zhang 2021).

Refinancing efficiency is the interest saved by refinancing as a fraction of the interest saved by the optimal strategy of Agarwal, Driscoll, and Laibson (2013).

Refinancing efficiency is measured for Danish households in different quintiles of age, education, income, financial wealth, and housing wealth.

Source: Andersen et al (2020).
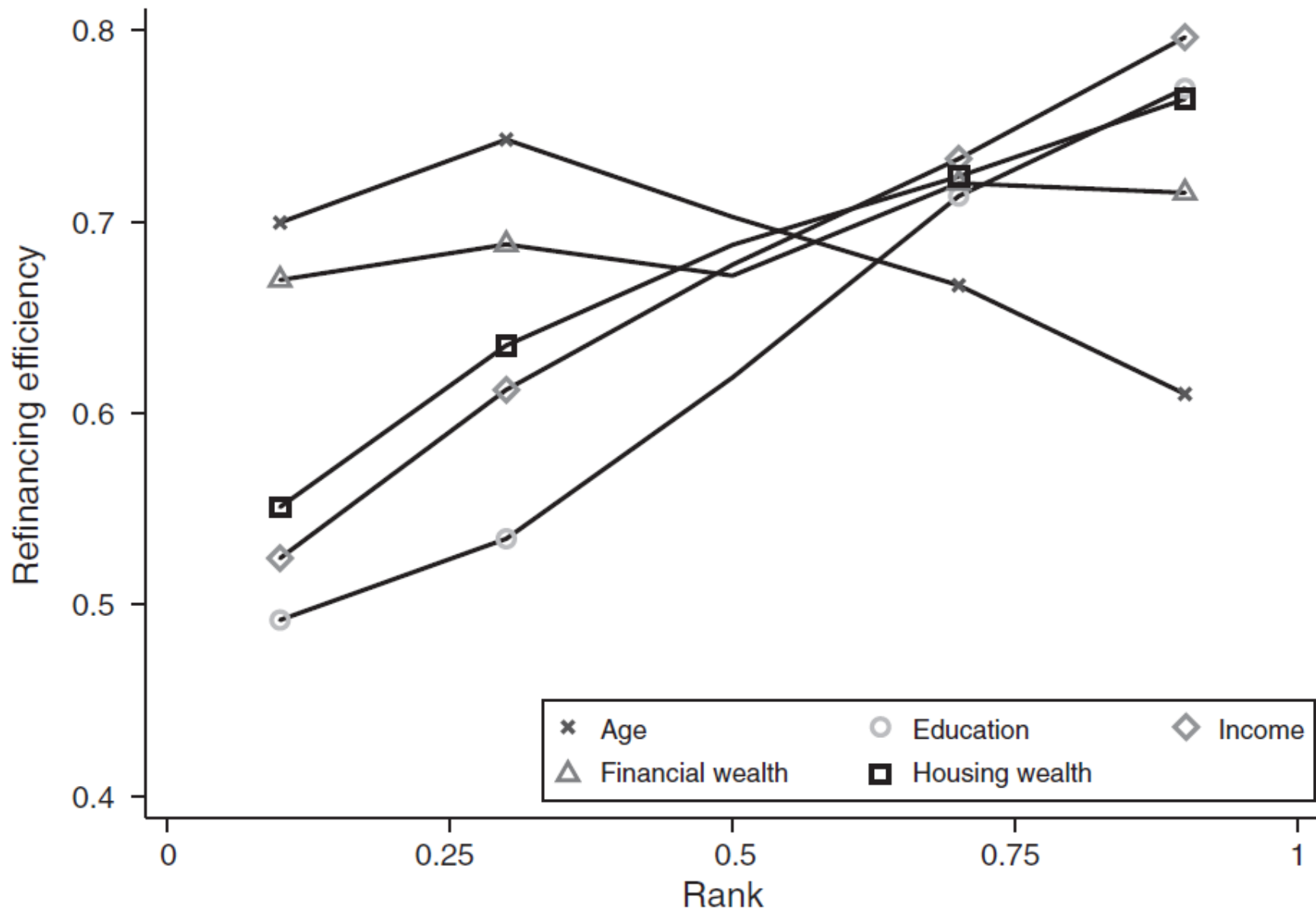
FIGURE 5. REFINANCING EFFICIENCY

Figure 1: Rates on outstanding mortgages: Black versus non-Hispanic white Borrowers for mortgages originated from 1996–2015
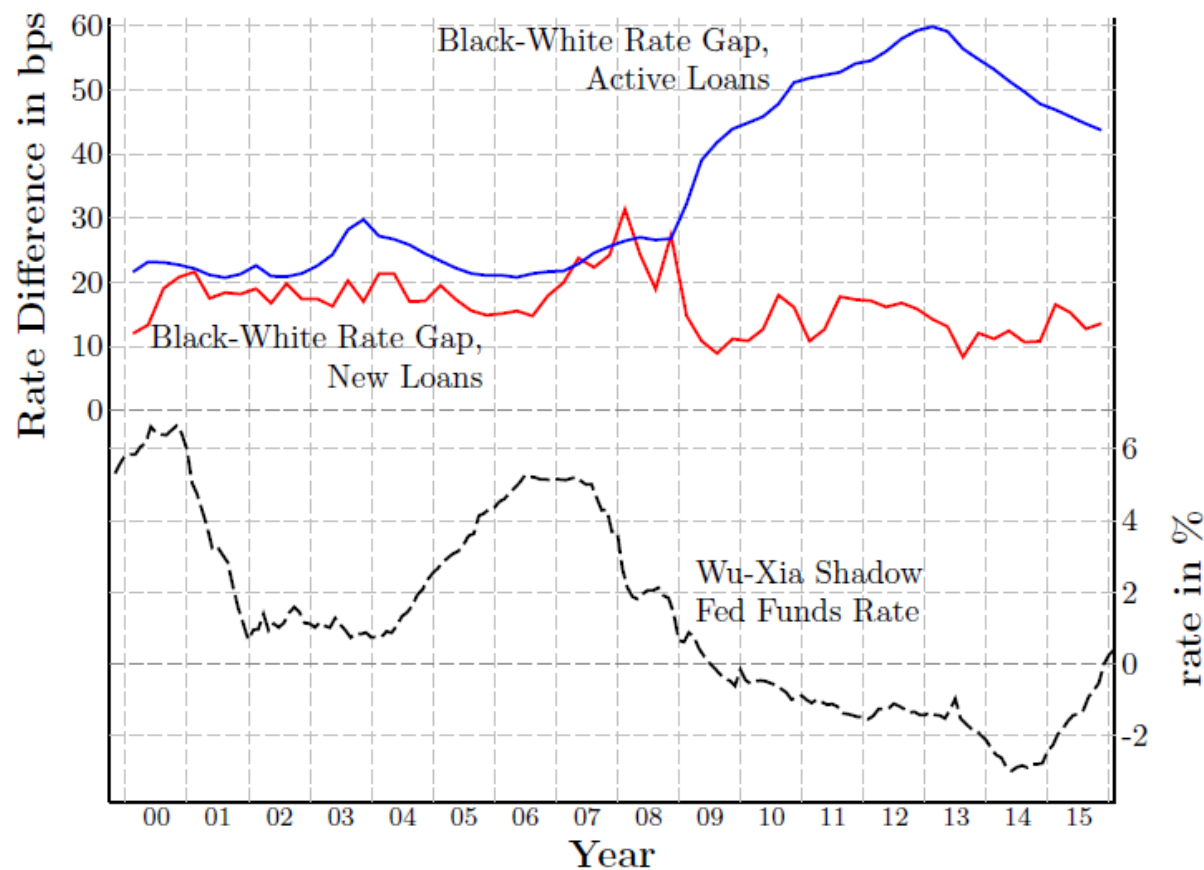
The black-white rate gap is small for new loans (and can be explained by other differences in borrower characteristics). It is much larger for outstanding loans, and rises when interest rates decline, reflecting the slower refinancing rate of Black borrowers relative to non-Hispanic white borrowers.

Source: Gerardi, Willen, and Zhang (2021).

Notes: This figure displays the rate gap for Black and non-Hispanic white borrowers with 30-year FRMs. New Loans are originated in the quarter and active loans are all outstanding loans. Data to compute the rate gaps come from the HMDA-McDash database. The Wu-Xia Shadow Fed Funds rate comes from https://www.frbatlanta.org/cqer/research/wu-xia-shadow-federal-funds-rate.

Can We Do Better than ARMs?

- In some circumstances the central bank may want an even stronger mortgage channel than ARMs offer.
  - For example, when the short rate is close to the zero lower bound.
- One approach is to build forbearance provisions into mortgage contracts ex ante.
  - As opposed to the ex post approach used in the Covid-19 pandemic (An et al 2022, Cherry et al 2021).
- Campbell, Clara, and Cocco (2021) studies this possibility using a structural model.
  - Importantly, the model looks at implications for default as well as consumption.

Cyclicality and Mortgage Structure
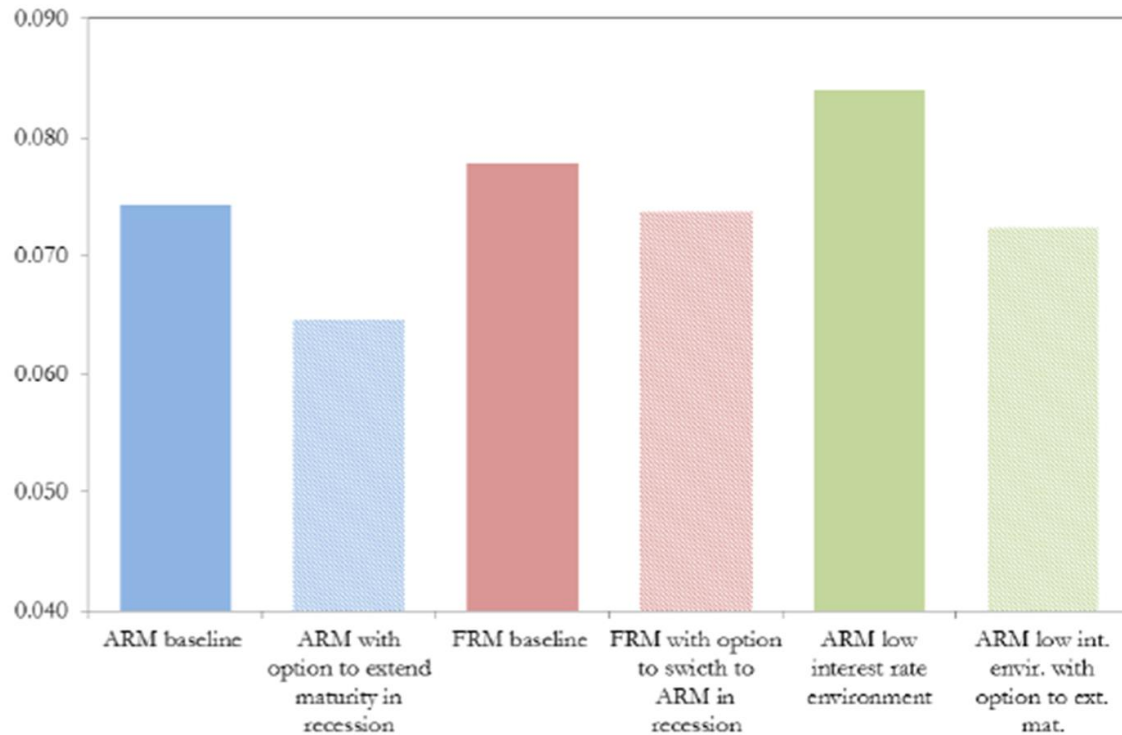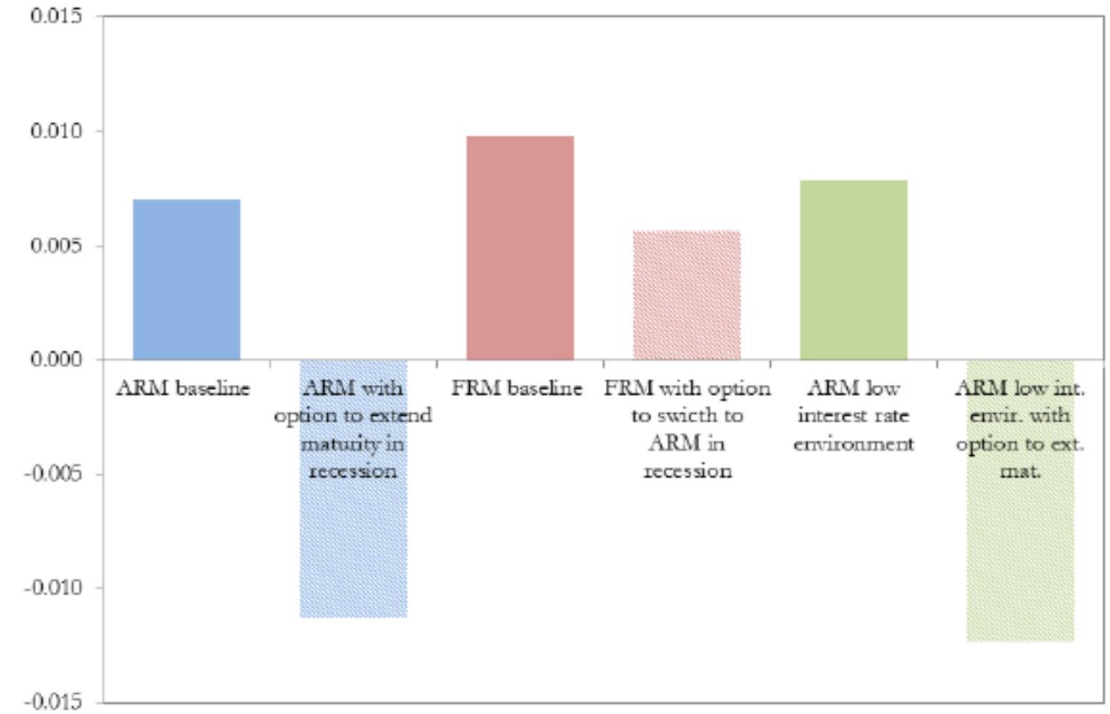
Source: Campbell, Clara, and Cocco (2021)
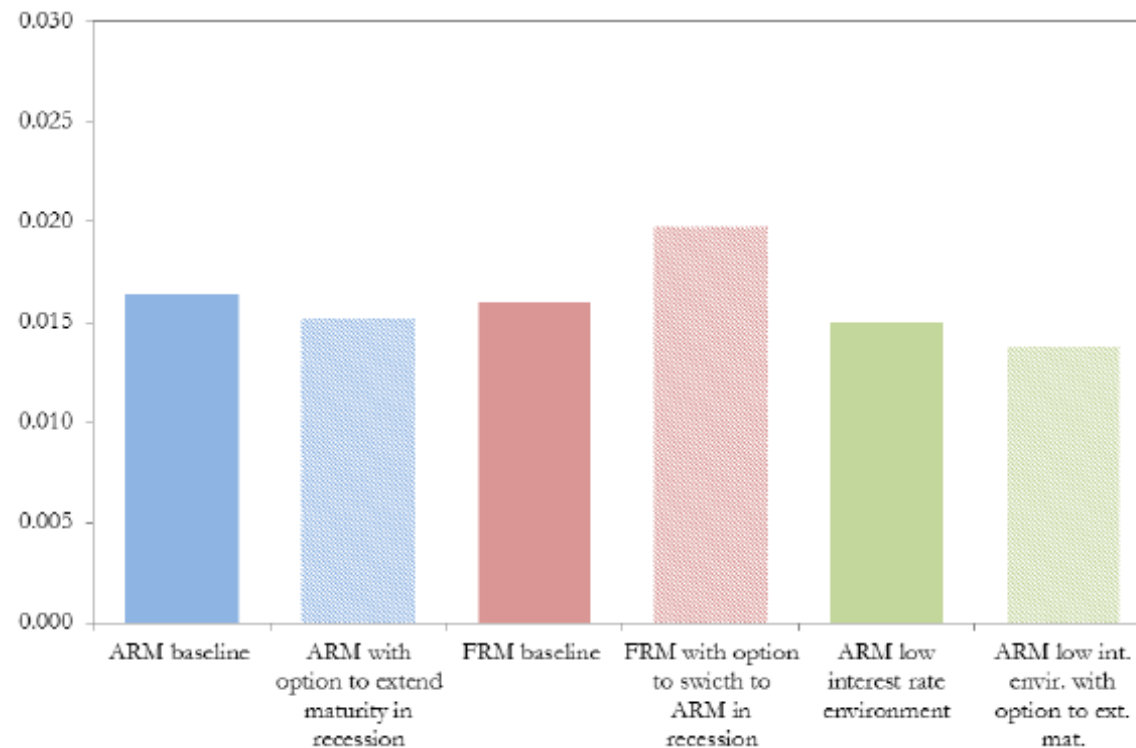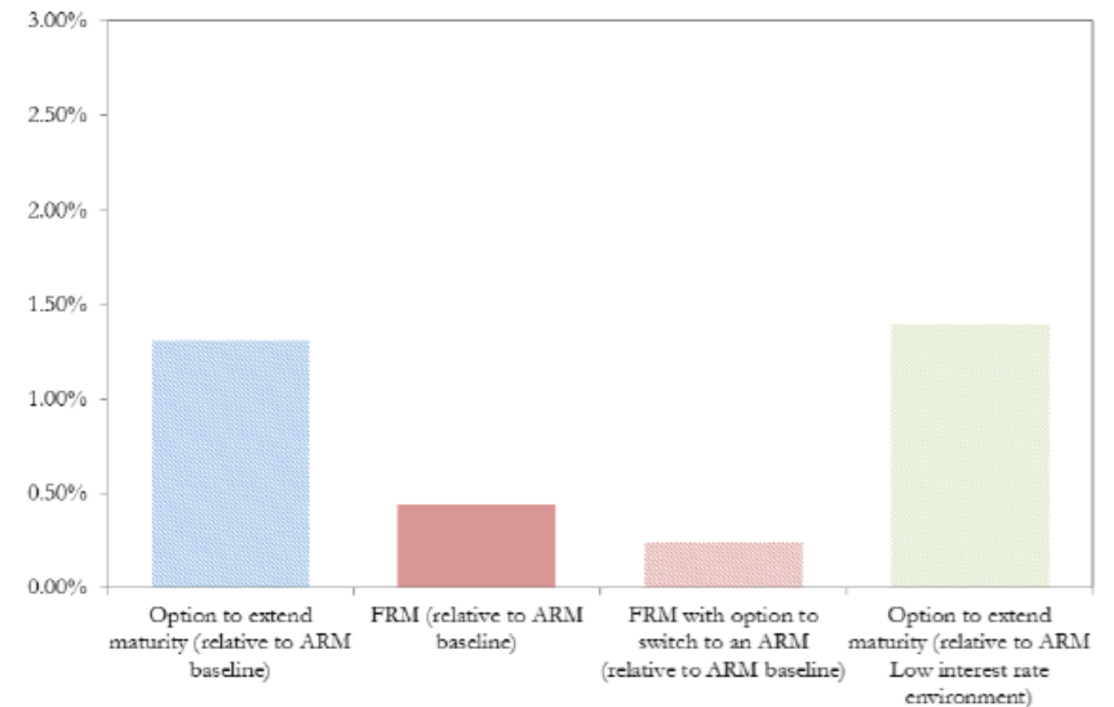
Cost, Welfare, and Mortgage Structure

Source: Campbell, Clara, and Cocco (2021)

Conclusion

- Mortgage market structure is important for monetary policy transmission.
- ARMs transmit policy more strongly than FRMs.
- Heterogeneous refinancing capability means that FRMs have undesirable distributional effects.
  - These could be avoided with automatically refinancing "ratchet" mortgages.
- In a low-interest-rate environment, transmission can be strengthened by forbearance provisions.
  - Preferably these should be set up ex ante so they can be properly priced.

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