

Real Estate Valuation in the Open Economy: Lessons from the past, Questions for the future

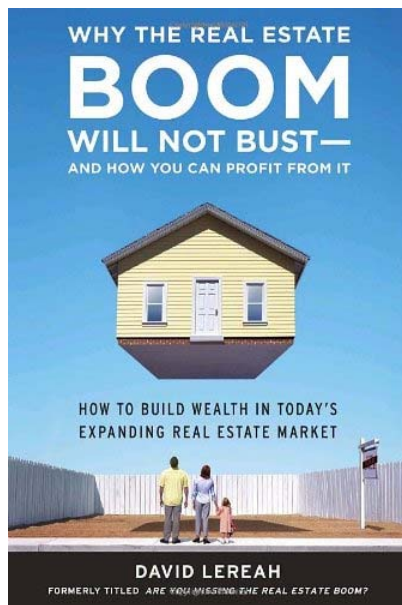
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USC and the NBER

Keynote address

Columbia-Tsinghua conference

Beijing, June 23-25, 2014



2005



2007



2010

Understanding real estate dynamics and the role of policies -- a key macro challenge

Agenda:

1. Recent research on housing prices and macro factors:

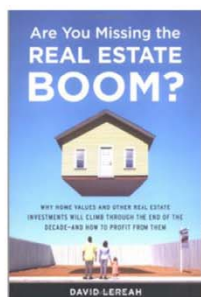
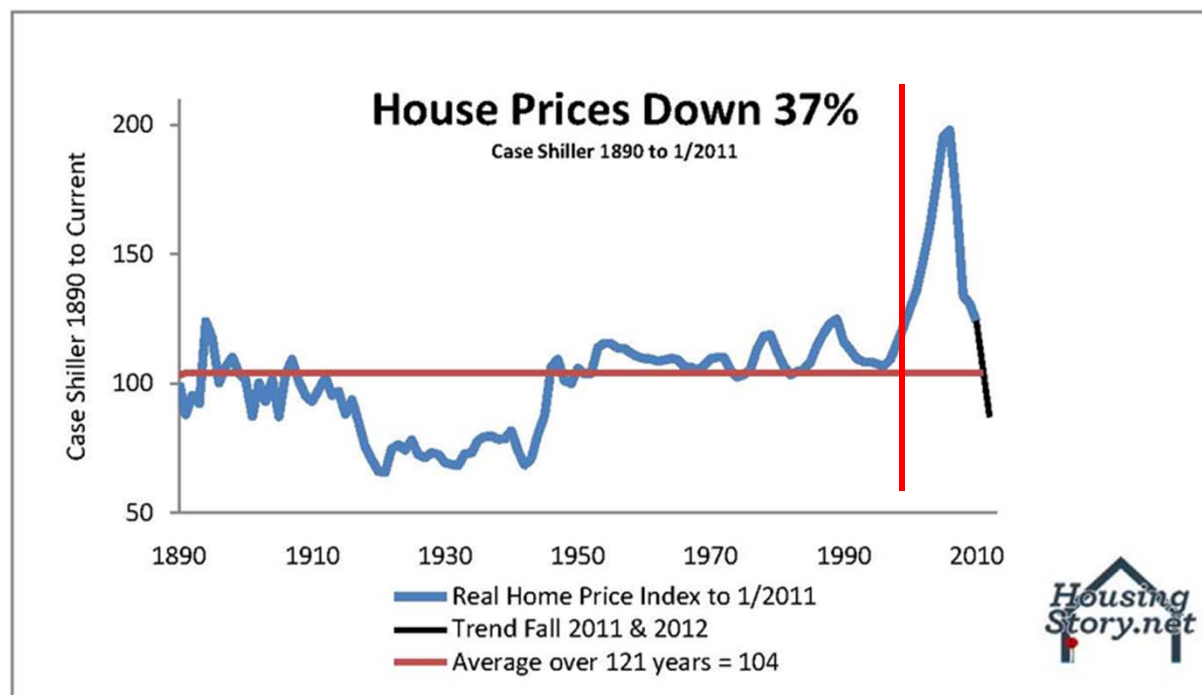
Credit, current account, momentum, wealth?

2. Should real estate concerns impact policy interest rate? What is the optimal assignment of policy instruments?

3. Concluding remarks

The US housing crisis has been the ‘mother of the GFC.’

- Shiller raised in 2005 concerns that “the US housing market is overheating.” [see chart]



Leamer (2007): “Housing is the US business cycle.”

Shiller warns of "bubbly" global home prices

Reuters Oct 2013

- Shiller pointed to a potential new housing bubble in some of America's largest cities.
- "It is up 12 percent in the last year. This is a very rapid price increase right now, and I believe that it is accelerated somewhat by the Fed's policy," he said.
- China, Brazil, India, Australia, Norway and Belgium, among other countries, were witnessing similar price rises. "There are so many countries that are looking bubbly," he said.

Nouriel Roubini

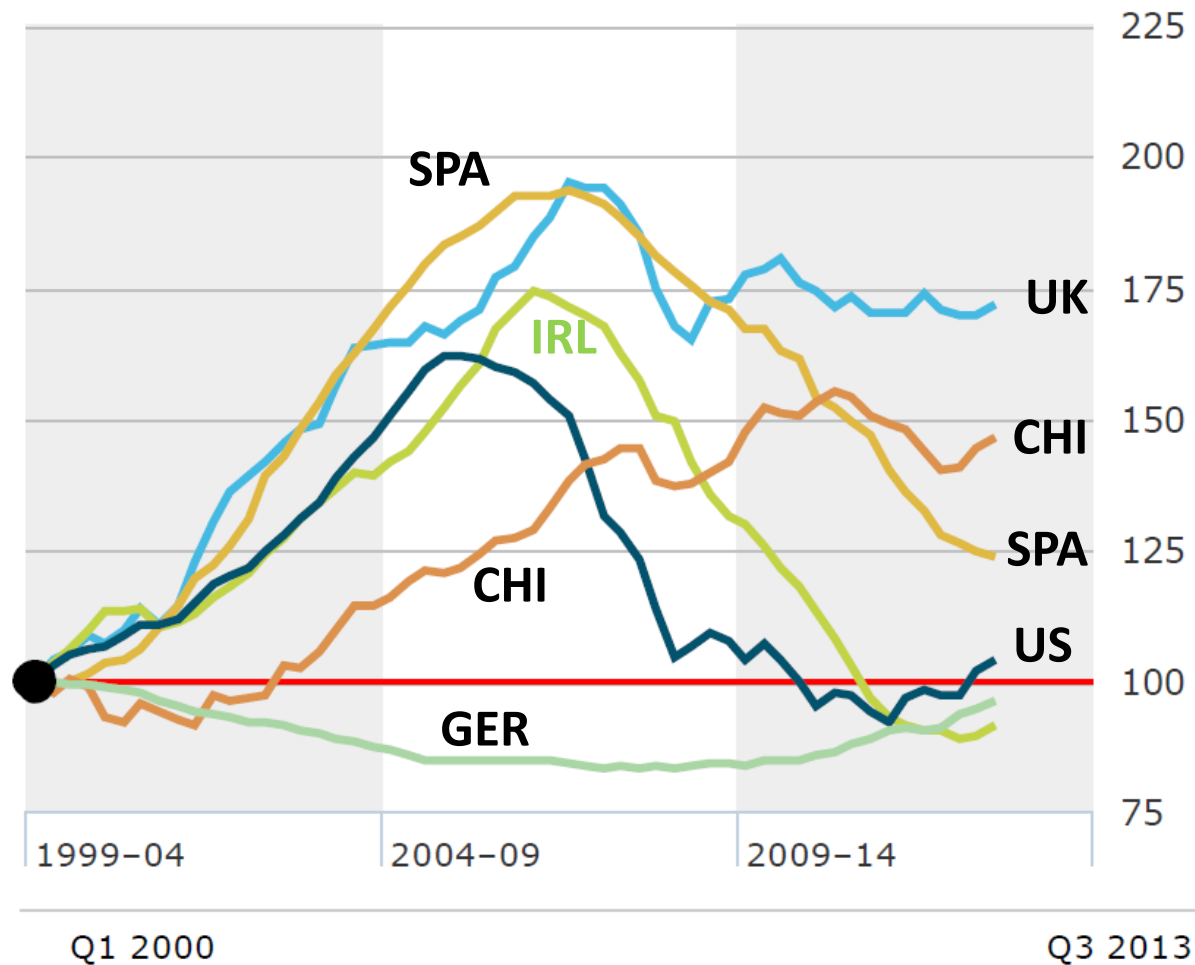
theguardian.com, 2 December 2013

Housing bubble 2.0 can only end badly

The global economy's new housing bubbles may not be about to burst just yet, because the forces feeding them – especially easy money and the need to hedge against inflation – are still fully operative.

Now, five years later, signs of frothiness, if not outright bubbles, are reappearing in housing markets in Switzerland, Sweden, Norway, Finland, France, Germany, Canada, Australia, New Zealand, and, back for an encore, the UK (well, London). In emerging markets, bubbles are appearing in Hong Kong, Singapore, China, and Israel, and in major urban centers in Turkey, India, Indonesia, and Brazil.

Q1 2000=100

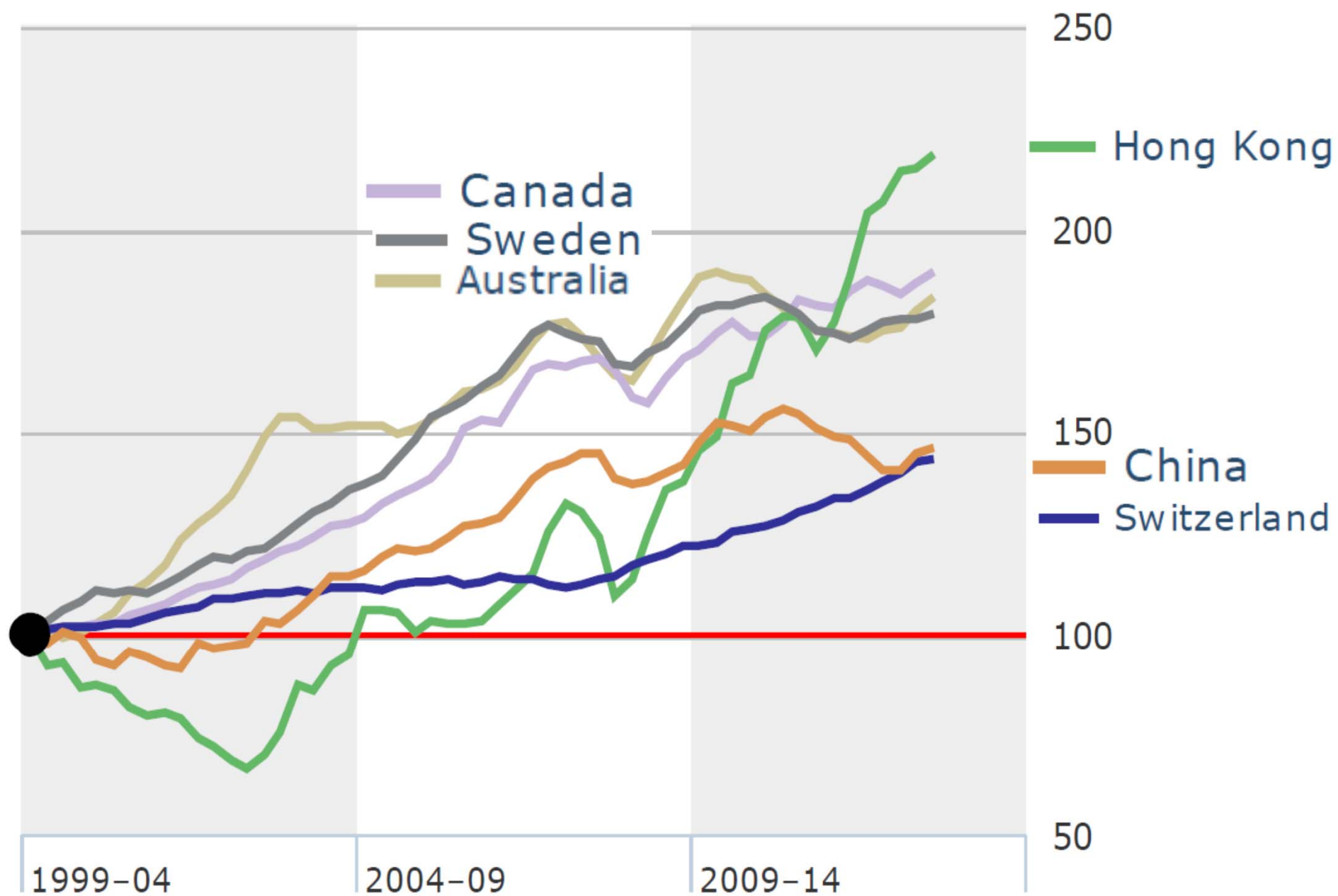


house-prices in real term index Q1 2000- Q3 2013

The Economist

<http://www.economist.com/blogs/dailychart/2011/11/global-house-prices>

Q1 2000=100



Background papers

- Aizenman and Jinjark (2008) – The economic importance of current account variations, in accounting for the real estate valuation, exceeds that of other macro variables [41 countries, 1990–2005].

The global crisis of 2008-9 sparked a vibrant debate

- Borio and Disyatat (2011) - The main causing factor to the financial crisis was the “excess elasticity” of the international monetary and financial system;
- Obstfeld (2012) - External imbalances - a symptom that deeper financial threats are gathering.”
- Gourinchas and Obstfeld (2012) “Domestic credit expansion and real currency appreciation have been the most robust and significant predictors of financial crises”⁸

Background papers, cont.

- Tomura (2010) Expectation-driven boom–bust cycles in house prices in the presence of uncertainty about the duration of high growth **occurs only if the economy is open to international capital flows.**
- Laibson and Mollerstrom (2010) - **national asset bubbles may explain the international imbalances.**

Background papers, cont.

- Gete's (2010) - an increased demand for housing may generate trade deficits without the need for wealth effects or trade in capital goods. **Housing booms are larger if the country can run a trade deficit.**
- Adam et al. (2011) - an open economy with subjective beliefs about price behavior, updated beliefs using Bayes' rule. **Belief dynamics replicates the empirical association between Cu. Act. patterns and real estate valuations.**
Low interest rates → a house price boom.

The current account and credit growth may impact the valuation of national real estates via different but related channels

- I. Growing current account deficits is a signal of a growing gap between the spending of domestic residents [absorption] and their output.**

As long as the demand for non-traded durable assets is positively correlated with absorption, higher current account deficits tend to be associated with higher real estate valuation.

- II. As most households co-finance the purchase of their dwelling thorough the banking system, greater financial depth and accelerated growth rate of credit increases the demand for houses → increasing the real estate valuation.**

The global story – **“Real Estate Valuation, Current Account and Credit Growth Patterns, Before and After the 2008-9 Crisis”** Aizenman and Jinjarak (2013, forthcoming, JIMF)

- We explore the stability of the conditioning variables accounting for the real estate valuation before and after the crisis of 2008-9, in a panel of 36 countries, recognizing the crisis break.

The most economically significant variables in accounting for real estate valuation increase:

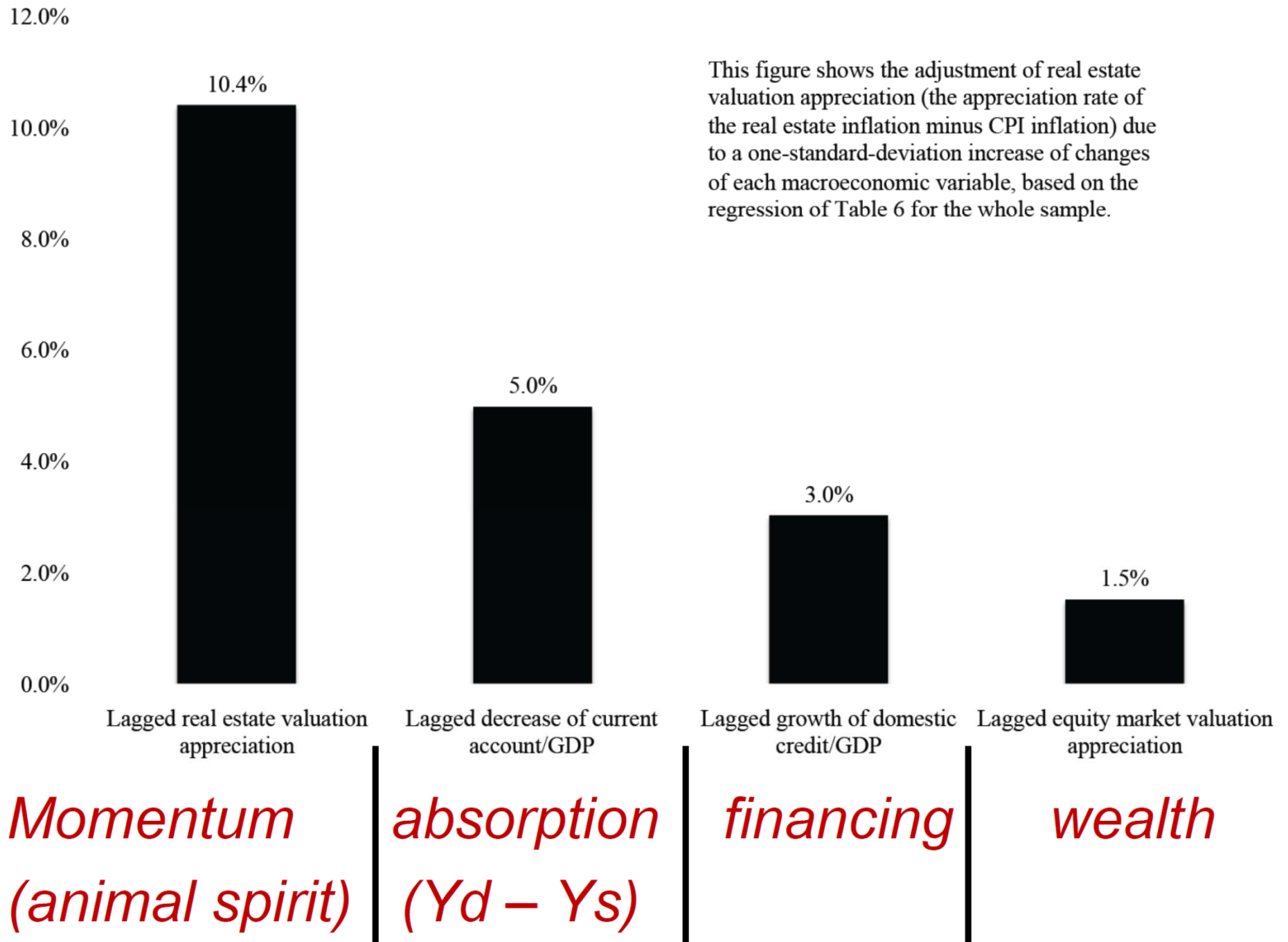
- Lagged real estate valuation appreciation (real estate inflation minus CPI inflation) [Shiller’s animal spirit?]
- Lagged declines of the current account/GDP,
- Lagged domestic credit/GDP growth, and lagged equity market valuation appreciation (equity market appreciation - CPI inflation).

We validates the robustness of the association between real estate valuation of lagged current account patterns both before and after the crisis.

The base regression is a dynamic panel estimate of 36 countries, 2005:I -2012:IV, recognizing the crisis break.

It accounts for the appreciation rate of the real estate (real estate inflation - CPI inflation) by:

1. lagged appreciation rate of the real estate valuation,
2. lagged changes in the current account/GDP,
3. lagged changes in the domestic credit/GDP,
4. lagged changes in the equity market appreciation (equity market appreciation minus CPI inflation),
5. a vector of lagged changes of macro controls [inflation, growth of industrial production, TED spreads, sovereign spreads, VIX, and international reserves].



Results

- We confirmed a robust positive association between the appreciation of real estate valuation and increases in current account deficits and the growth rates of credit (both as fractions of the GDP) in 36 countries, covering the OECD and emerging markets, before and after the global financial crisis.
- While the relative impact of the current account deficit is larger than that of credit growth in our sample, one should recognize that the growth of credit/GDP is a noisy measure of the effective credit growth in the real estate market.

Cont.

- Data limitations prevented us from controlling directly for the credit conditions in the real estate markets [like the stringency of credit standards, required down payment, the effective spreads in the mortgage markets, etc.]
- There is no reason to expect that the relative ranking of the importance of the current account versus the credit channels in accounting for real estate appreciations should be stable overtime. Yet, as theory suggests, both channels are potent and should not be ignored.

- The most important factor accounting for the appreciation: the impact of momentum: the lagged quarterly appreciations in the past year.
- A real estate appreciation of 1% in a given quarter was associated with a projected real appreciation of more than 1% in the next three quarters.
- This is in line with Shiller's (2000) concerns regarding Irrational Exuberance in the USA in the early 2000s, with Case, Shiller, and Thompson (2012)'s, and Glaeser, Gottlieb, and Gyourko (2013)'s questioning the role of cheap credit on real estate boom.
- Shiller's concerns apply globally.
- The effects of CAD prevails both before and after the crisis.

Follow up agenda

Aizenman, Jinjark & Huanhuan Zheng (2014) work in progress

Added controls: LTV, stringency of credit standards, required down payment, the effective spreads in the mortgage markets, house price/rent

I. What are the output and growth costs associated with corrections of bubbly real estate, and what factors determine these costs.

II. Endogeneity issues

Preliminary findings: 'small corrections' don't have significant growth effects, faster corrections are associated with faster recoveries.

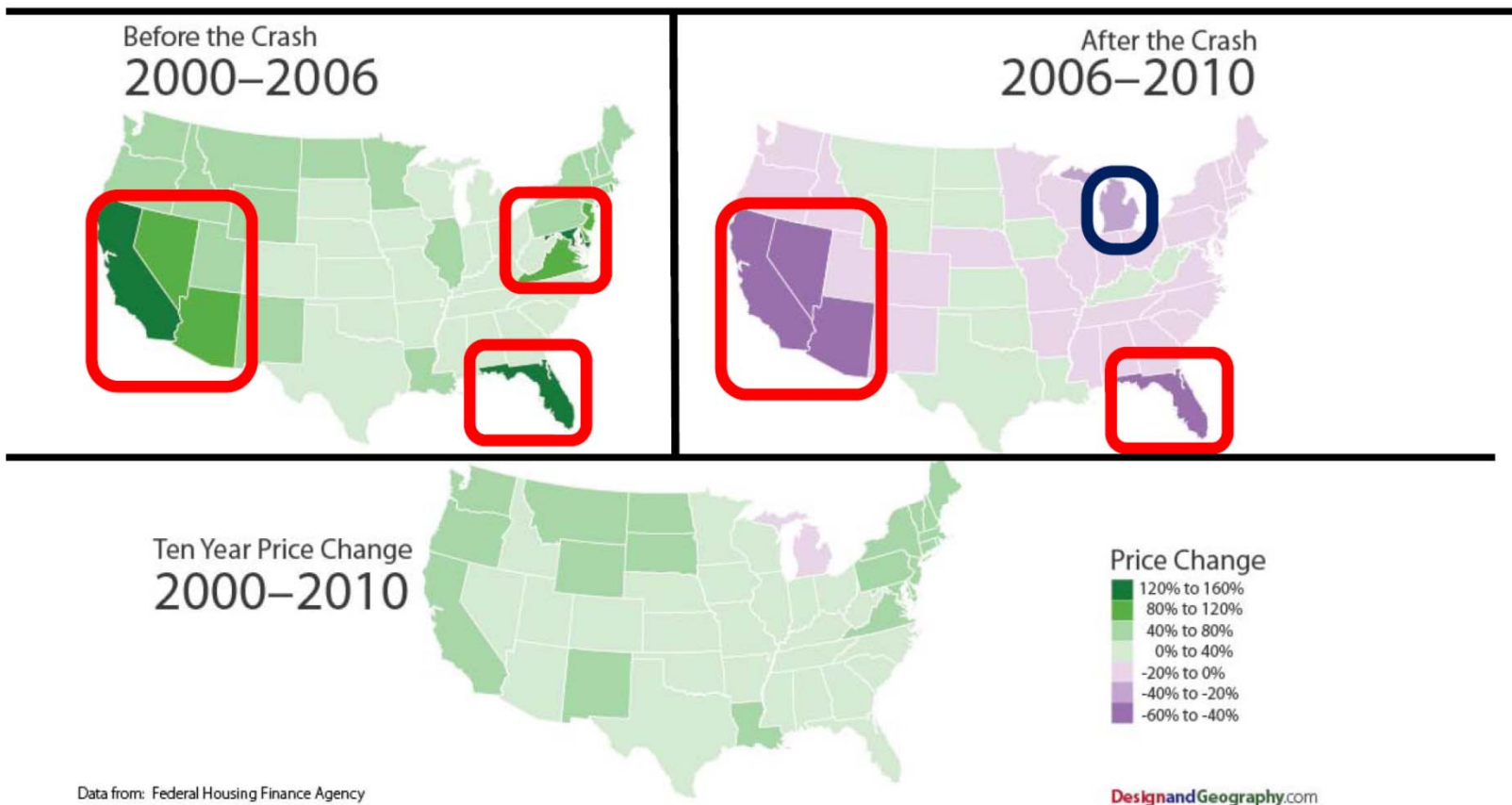
Should monetary policy [setting the policy interest rate] be driven by real estate valuation?

- Chances are that there are better direct instruments. 'Housing shocks' frequently are driven by policy shocks.
- **The first best policy is to adopt long run supply policy that refrains from subsidizing housing ownership.**
- **Leverage, credit and housing supply policies are the first best instruments dealing with destabilizing housing shocks.** Yet, their applicability is subject to structural and political economy constraints.
- Policy interest rate is not an effective tool to deal with these issues.

Exhibit 1: USA – The housing bubble and its correction is the story of less than 10 states out of the 50

Change in U.S. Housing Prices: 2000-2010

Purchase only index for lower 48 states estimated using sales price data (not inflation adjusted)



The US story: Financial deregulation, massive increase in LTV ratio [LTV of 103%...], drop of lending standards due to political economy forces [Rajan] were the drivers of the 'housing shock' in the US. These changes impacted those states with relatively inelastic supply of housing, and areas populated with more sub-prime borrower [zoning, attractive shores, nice weather, etc...].

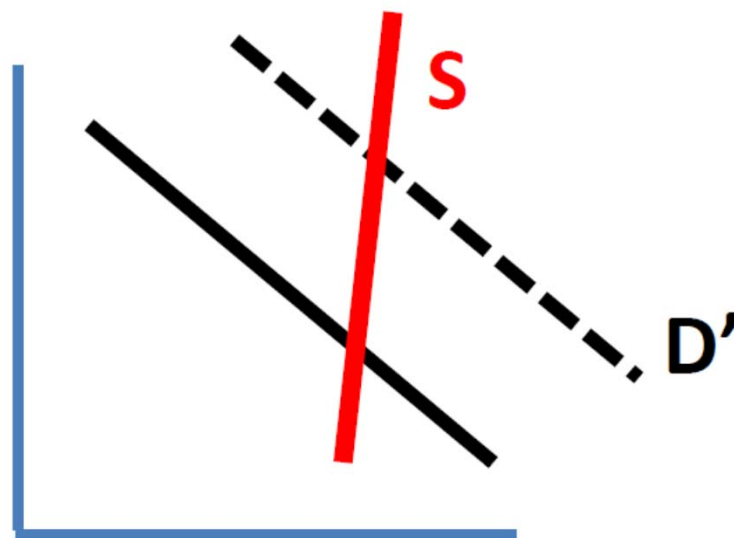
- It became 'US and a global shock' following the bundling and reselling of mortgage backed securities, promoted as AAA, until they turned out to be mostly FFF...

Layers of moral hazard magnified the costs

A too liberal lending policy, supported by
Deregulation.

Under-regulation of mortgages and LTV, and
securitization.

Preferential tax treatment of housing and quasi
federal insurance institutions
magnifies the swings.



Mian and Sufi papers provide the best evidence: They exploit the variation of the experience of 2,920 zip codes in the US, covering most of the US households.

- The sharp increase in mortgage defaults in 2007 is amplified in ZIP codes with larger shares of subprime borrowers as of 1996.
- Prior to the default crisis, these subprime ZIP codes experience an unprecedented relative growth in mortgage credit despite sharply declining relative income growth in these neighborhoods.
- The expansion in mortgage credit to subprime ZIP codes and its dissociation from income growth is closely correlated with the increase in securitization of subprime mortgages. [*QJE (2009) 1449-1496*]

- Zip codes that had high latent, unfulfilled demand for mortgages in 1996 (defined as the percentage of mortgage applications that are denied) continue to get rationed out of the credit market for a few years but then see a sharp reduction in their mortgage denial rates.
- The rapid expansion in the supply of credit to zip codes with high 1996 latent demand for mortgages -- namely sub-prime customers who were traditionally marginal borrowers unable to access the mortgage market -- led to both greater house price appreciation and the subsequent sharp increase in defaults from 2005 to 2007.

- The expansion in the supply of credit was accompanied by a shift in the mortgage industry -- originators sell mortgages in the secondary market shortly after origination.

Zip codes that saw the largest increase in mortgage credit, house price appreciation, and subsequent defaults also saw the largest increase in rates of disintermediation. Moreover, the increase in sales to the secondary market is related to a subsequent increase in default rates only when the secondary sale is to a non-affiliated entity -- moral hazard concerns. Moral hazard on behalf of originators selling mortgages is a main culprit for the U.S. mortgage default crisis.

2008. "Summary of The consequences of mortgage credit expansion," Proceedings, Federal Reserve Bank of Chicago, issue May, pages 129-132.

Conclusions: the housing crisis in the US is the result of 'housing shocks' induced by financial deregulation, massive rise in LTV ratios, increasing the share of sub-prime borrowers.

These borrowers were served by suppliers of credit that re-sold the bundled mortgage portfolios at an inflated valuation.

All went well until the music stopped. The timing of the crisis was a surprise. Yet, the fault lines of the system were inedited by several economists [Gramlich, Shiller, Rajan].

Exhibit II: The global story and the ECB

- Until the GFC, mild deflation of real estate valuation in Germany, sharp increases in valuations in the Spain and Ireland.
- **Don't expect the ECB to adjust policy interest rates to deal with bubbly real estate in Spain, or for the US FED to deal with bubbly California.**

No reason to do it.

- There are other, more potent policy instruments that are at the discretion of each country – dynamic LTV regulations in the short run, and supply policies in the long run [more on it below].
- These policies have not used enough in the US, UK, Spain and the like due to political economy factors.

Exhibit III Germany versus the US: Aizenman and Noy (2012) “Policies between Germany and the US: Real estate versus human capital,” Voxeu

- During the lead up to the global financial crisis, 1994-2006, home prices in the US exhibited a cumulative nominal appreciation of 115%, whereas in Germany there was a nominal depreciation of 4%.
- The US prioritized housing ownership, promoted by a preferential tax treatment of mortgages and home ownership, subsidizing quasi-public institutions designed to deepen the ownership of real estate.
- In contrast, Germany does not provide public subsidies for home ownership, and has a much deeper residential rental market.
- Voigtländer (2009): the comparatively low homeownership rate in Germany is due to 3 public policy reasons, and the absence of ‘momentum’

- “Rental housing makes up a larger share of the market because of an extensive social housing sector. The high quality standard of social housing and the fact that private investors were included in the subsidization scheme from the beginning laid the foundation for a large private rental housing market.
- “Homeowners in Germany did not benefit from the same high subsidies as in countries such as Spain or the Netherlands.
- “The German rental housing market was not rendered inoperative by excessive interventions in rents, as was the case in countries such as Spain and the UK.
- “German house prices remained stable over a long period of time.”
- Ironically, the Eurozone crisis is the beginning of a bubbly real estate in Germany. Segments of the German real estate market have been viewed as a hedge against Eurozone instability by hot money.

To conclude:

Lesson from US and German's housing history

- The sustainability power of the US inefficient housing policy configuration reflects the dynamic effects of subsidizing home ownership.
- Once a subsidy of residential investment is adopted, it provided immediate gains to house buyers and to the construction sector, at growing costs to future taxpayers.
- This policy generated a growing club of supporters, as scaling down the policy would lead to capital losses for homeowners and to the construction sector.

Policy instruments

- Subsidizing housing ownership is costly, and an inefficient way of dealing with income inequality.
- An efficient long run supply policy provides a stabilizing anchor of housing prices, mitigating exposure to bubbly dynamics, controlling the 'momentum factor'.
- **Leverage, credit and housing supply policies are the first best instruments dealing with destabilizing housing shocks.**

Further discussion

Bubbly asset markets and behavioral economics: control lab experiments confirm the prevalence of bubbly dynamics with leverage and incomplete information.

Hussam, Porter and Smith, AER 2008

- “We impose a large increase in liquidity and dividend uncertainty to shock the environment of experienced subjects who have converged to equilibrium, and this treatment rekindles a bubble.”
- “High liquidity and dividend spread contribute to maintaining a substantial bubble despite subjects’ increased familiarity with the environment.”

Market structure matters, and is endogenous

Mian and Sufi 2014 *“House of Debt: How They (and You) Caused the Great Recession, and How We Can Prevent It From Happening Again.”* Univ. of Chicago Press

Leverage is the mother of bubbles: Economic disasters are almost always preceded by a large increase in household debt.

To prevent the next society should change the terms of debt contracts to make them more flexible and hence less harmful.

A proposed shared-responsibility mortgage would make economies less vulnerable to debt-fueled bubbles. In such a mortgage, lenders take some of the hit if housing prices fall and reap some of the reward if they rise.

- If an index of home prices in a home's ZIP code fell, say, x percent, then the borrower's monthly payment of principal and interest would also fall x percent. That's not achieved by stretching out the length of the loan, which lenders sometimes will do: Despite the smaller payment, the mortgage would still get paid off over 30 years.
- If prices recover, payments go back up, but never above the original amount. Lenders would ordinarily charge a higher rate for that protection.
- Mian and Sufi calculate that they would be willing to forgo a bump on the rate if they were given some upside potential: 5 percent of any capital gain the homeowner gets upon selling or refinancing the house.

If debt is dangerous, why has society balked at risk-reducing ideas? Public policy is the key for the long run structure of the market

Shiller, AER May 2014 “Why Is Housing Finance Still Stuck in Such a Primitive Stage?”

His list of explanations includes inflexible regulators; the risk of lawsuits; the likelihood that any good idea will be imitated, since financial patents are hard to enforce; and suspicion. “Mistrust by the general public of the financial community encourages the use of boilerplate mortgage contracts, virtually the same for all,”

Mian and Sufi cite another obstacle: The federal government probably wouldn't give their product the same preferential tax treatment it gives to a standard mortgage loan since it's part equity.

Ideally, the government should be encouraging, not discouraging, risk-reducing innovation.

Still, change is possible

- Shiller: long-term, self-amortizing mortgages were rare before the 1930s; it took the Home Owners' Loan Act of 1933 to launch them on a large scale. Now they're taken for granted as if they were natural objects rather than human inventions.
- “As it currently stands, the financial system benefits very few people, and those few have a vested interest in staving off any reform,” Mian and Sufi (2014).
- The contrast between the US and Germany vividly illustrates the fundamental impact of public policy on housing market design and performance.

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