Housing Finance and Real Estate Booms: A Cross-Country Perspective

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PRESENTATION OUTLINE

- Motivation - Why study housing finance?

- Mortgage markets around the world

- Housing finance and real estate booms

- Conclusions/Policy Implications

MOTIVATION

▸ Adjustments in real estate markets played an important role in the global financial crisis.

▸ During the 2000-2005 period, mortgage lending experienced generalized boom across many countries

MOTIVATION

Occurrence of House Price Booms and Credit Booms
(as percentage of countries in the sample)
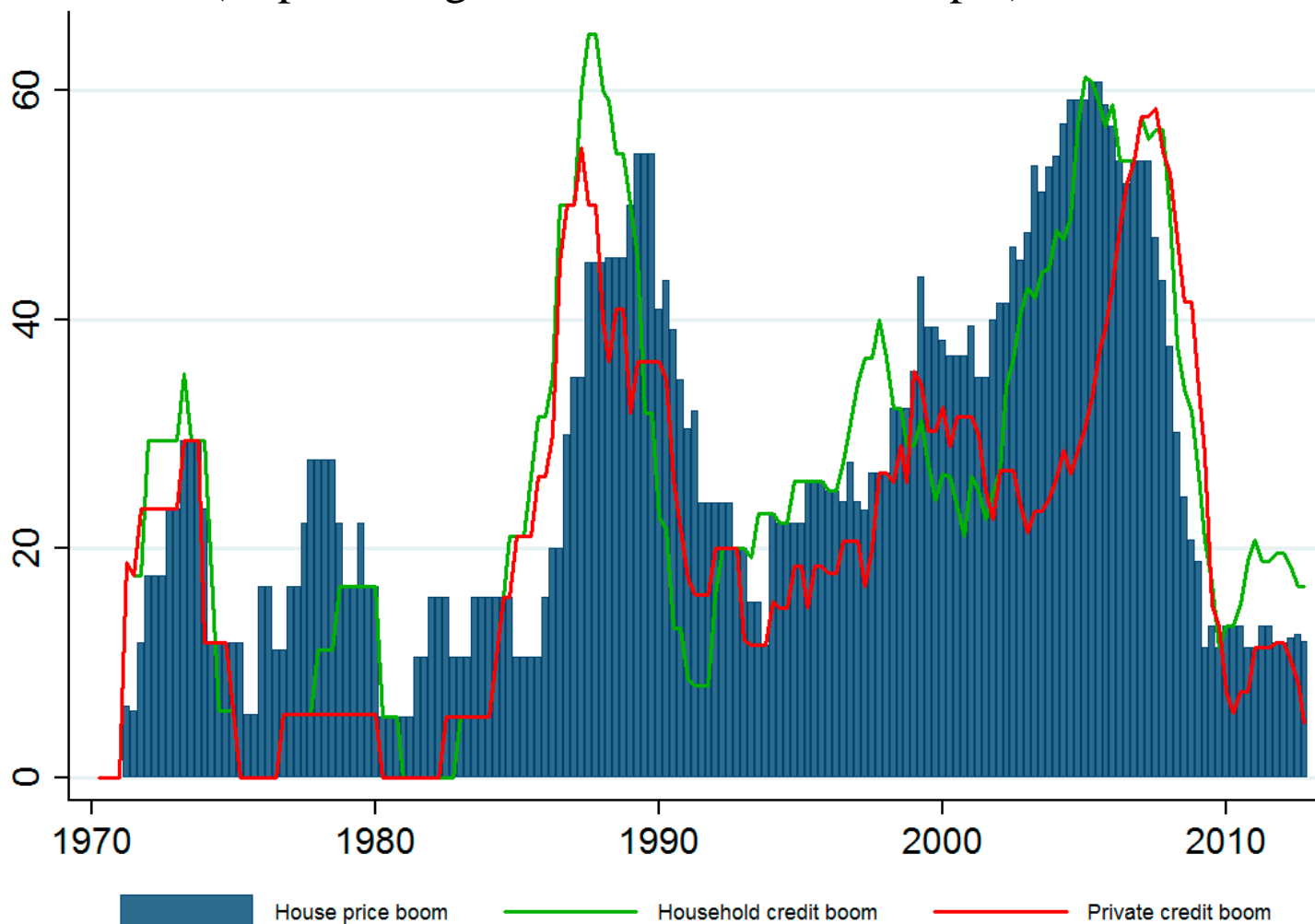
MOTIVATION
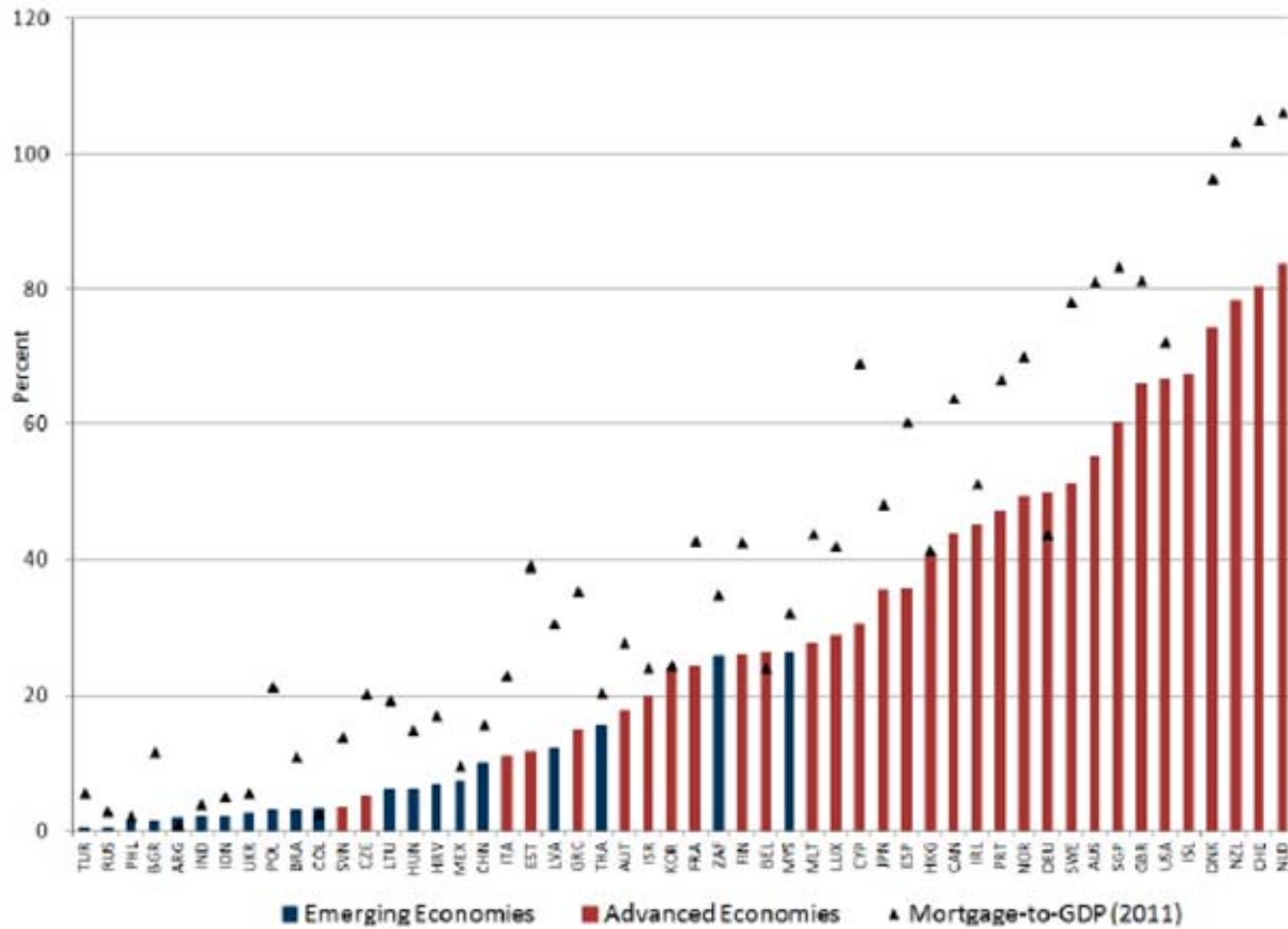
▸ How to achieve homeownership objectives without creating risks to financial stability?

▸ The paper aims to explore these issues using new dataset on housing finance characteristics, house prices, and credit for a sample of more than 50 countries.

MORTGAGE MARKETS AROUND THE WORLD

▸ Mortgage markets vary substantially across countries:

   ▸ Quantitatively: depth of mortgage/household credit markets

   ▸ Qualitatively: characteristics of loans and lenders.
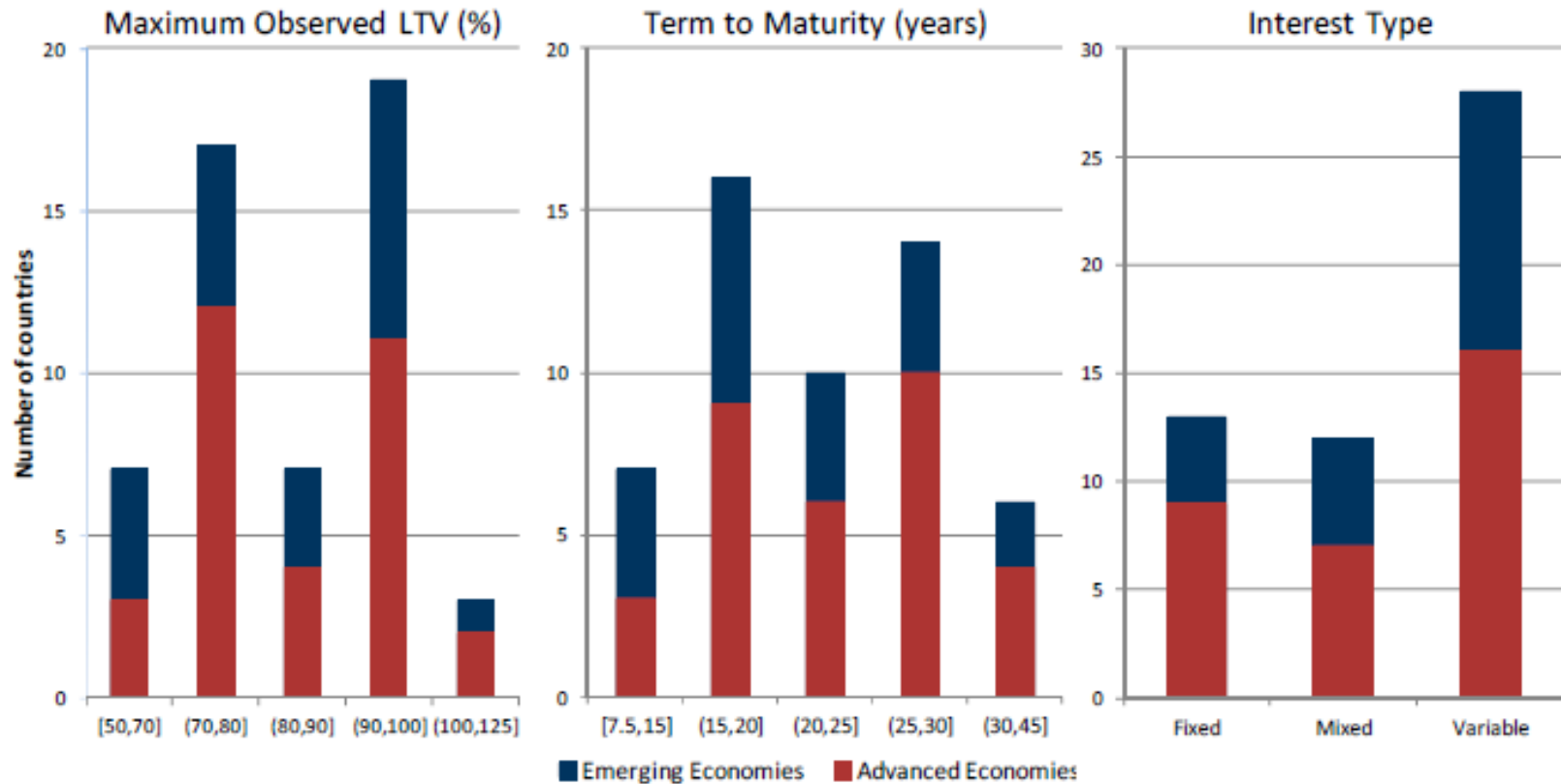
MORTGAGE MARKETS AROUND THE WORLD

The cross-section of outstanding mortgage debt/GDP (2001-05 avg)

MORTGAGE MARKETS AROUND THE WORLD

Cross-country differences in loan types

Maximum Observed LTV (%) — Term to Maturity (years) — Interest Type

Emerging Economies   Advanced Economies

MORTGAGE MARKETS AROUND THE WORLD

Cross-country differences in funding models and regulation
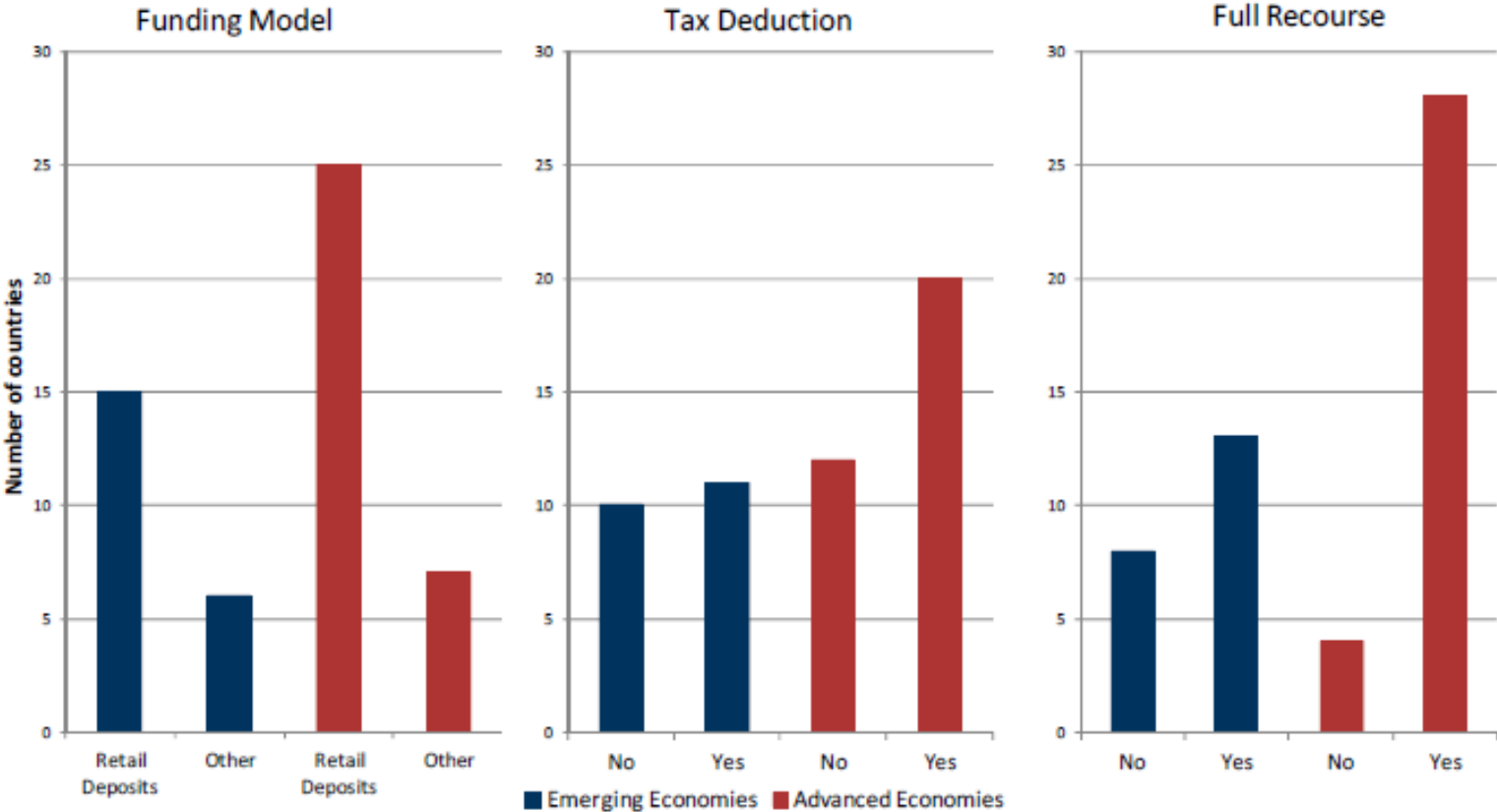
MORTGAGE MARKET DEPTH, HOMEOWNERSHIP, AND WELFARE

▸ At the country level we see a positive relation between mortgage credit and homeownership (see U.S. example)

▸ Several papers exploiting micro data find that increases in mortgage availability through innovations and higher LTV have a positive impact on homeownership.

▸ In some countries, the welfare implications of homeownership are:

  ▸ + on community investment, education, and less crime

  ▸ - on labor mobility

Factors associated with cross-country differences in mortgage markets

Regressions of Mortgage Credit to GDP on Institutional and Other Variables

	(1)	(2)	(3)	(4)	(5)	(6)
Legal rights index	3.320**	2.190*	2.128*	1.679	1.751	1.177
	(0.016)	(0.052)	(0.054)	(0.129)	(0.117)	(0.309)
Credit info. Index	2.871*	0.504	0.576	0.547	0.315	0.580
	(0.093)	(0.727)	(0.683)	(0.694)	(0.823)	(0.673)
CPI volatility (90-07)	-2.279**	-0.983	-0.808	-0.537	-0.941	-0.622
	(0.014)	(0.206)	(0.291)	(0.488)	(0.215)	(0.424)
Ease of registering property	0.0772	0.0877*	0.0540	0.0895*	0.0805	0.228**
	(0.232)	(0.096)	(0.323)	(0.079)	(0.118)	(0.029)
Log of GDP per capita		12.62***	12.96***	12.10***	13.25***	14.32***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tax deduction						-4.312
						(0.372)
Max Observed LTV			0.319*			0.420**
			(0.083)			(0.034)
Full recourse						-9.777
						(0.102)
Interest type						1.434
						(0.604)
Term to maturity				0.702**		0.288
				(0.039)		(0.422)
Retail funding					-9.816*	-10.86**
					(0.073)	(0.046)
Observations	53	53	53	53	53	52
R2	0.375	0.600	0.625	0.635	0.627	0.690

-Institutions (e.g., legal rights, etc.) are important

-Country income levels (proxy of financial development) too

-Also role for house finance characteristics (LTV, funding model)
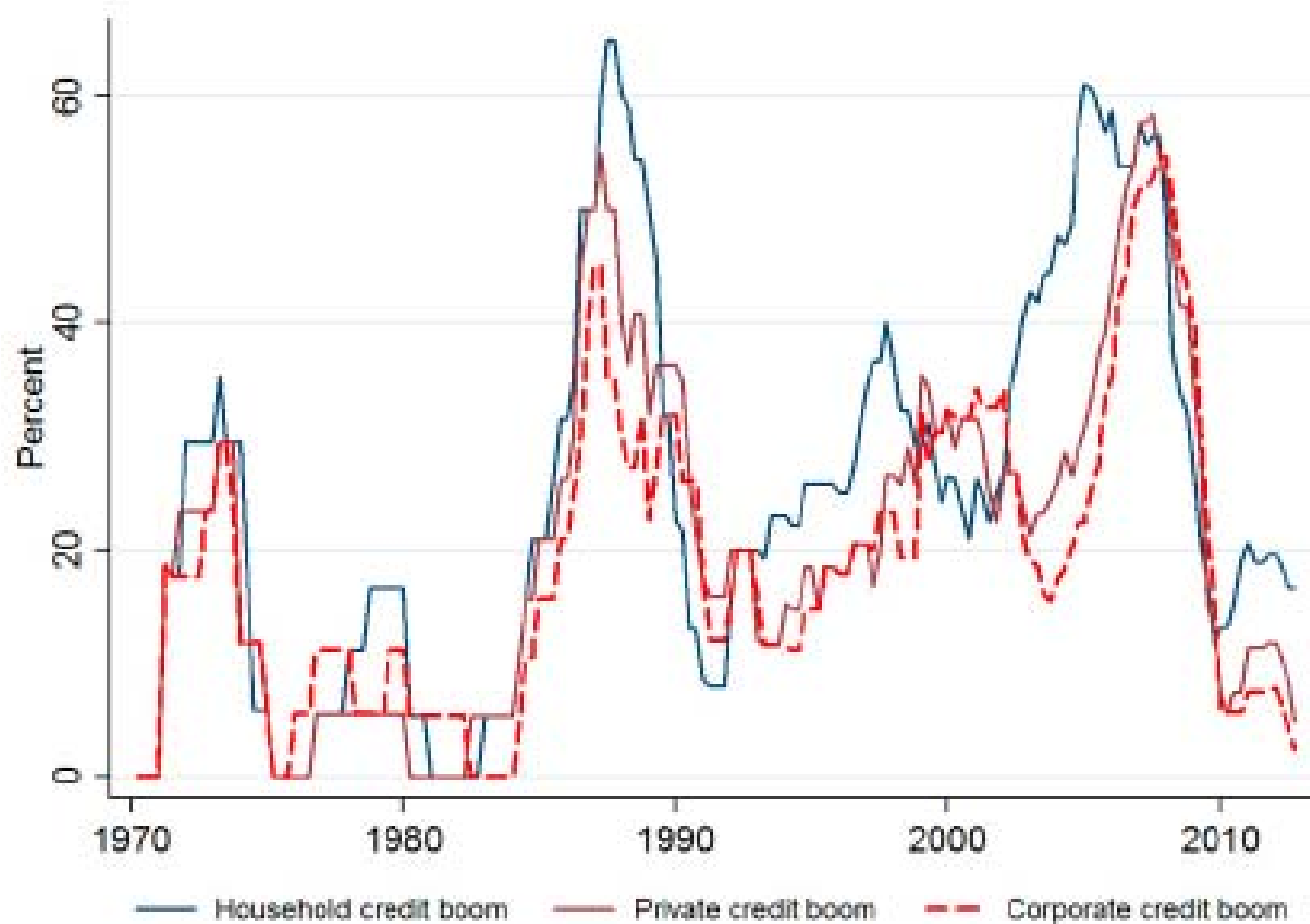
HOUSING FINANCE AND REAL ESTATE BOOMS

- Defining credit and real estate booms:

  - Real growth rate of credit (house prices) is greater than 10 (5) or two s.d. above the country specific average in a given quarter.

  And

  - Above 10 (5) or one s.d. above the country specific average for 2 years or more.

HOUSING FINANCE AND REAL ESTATE BOOMS

Occurrence of credit booms during 1970-2012
(as percentage of countries in the sample)

HOUSING FINANCE AND REAL ESTATE BOOMS

- Triggers of house price booms

$$(housing\ boom = 1)_{it} = \alpha + \beta X_{it-4} + \gamma Y_t + \theta\, credit\_boom_{it-4} + \varepsilon_{it}$$

Where:

$X_{i,\ t-4}$ = House finance factors (GDP per capita, HH indebtedness, CPI inflation, etc.)

Y_t = Global time-varying factors (VIX, US Fed Fund Rate)

$credit\ boom_{i,t-4}$ = Presence of Private and/or HH credit booms

HOUSING FINANCE AND REAL ESTATE BOOMS

Triggers of House Price Booms

Variables	(3)	(4)	(5)
HH Credit Boom (lag)	0.746***	0.763***	0.606***
	(0.240)	(0.241)	(0.210)
Private Credit Boom (lag)	0.355	0.574**	0.436**
	(0.229)	(0.236)	(0.221)
HH Indebtedness (lag)	-0.0292***	-0.0385***	-0.0162***
	(0.0102)	(0.0127)	(0.00396)
Log of GDP per capita (lag)	0.497	-0.0853	0.328***
	(0.647)	(0.858)	(0.110)
US Fed Fund Rate	-0.0236		
	(0.0259)		
VIX Index		-0.0184***	-0.0310***
		(0.00698)	(0.00630)
Current Account (lag)	0.0539***	0.0623***	0.0332**
	(0.0169)	(0.0224)	(0.0135)
GDP Growth (lag)	0.0668***	0.0579***	0.0424***
	(0.0169)	(0.0198)	(0.0156)
CPI Inflation (lag)	-0.0587**	0.0219	-0.0187
	(0.0244)	(0.0317)	(0.0270)
Max Observed LTV			0.0251***
			(0.00781)
Country FE	YES	YES	NO
Observations	4,121	2,960	2,290
R2	0.255	0.302	0.226

-HH credit boom good predictor of house price booms

-Initial high HH indebtedness reduces occurrence

-Global factors (VIX) play a role

-Higher max LTV also increases occurrence

HOUSING FINANCE AND REAL ESTATE BOOMS

▸ Classifying house price booms based on the evolution of credit

Characteristics of House Price Booms

Boom Classification	Number of episodes	Duration		Average growth of house price		Average growth of household credit		Average growth of firm credit		Average growth of private credit	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Housing booms without any credit boom	18	13.6	10.5	10.1	8.7	4.7	5.9	4.8	5.4	5.2	5.3
Housing booms with only household credit boom	16	13.9	13.0	9.4	9.0	11.2	10.5	2.8	3.8	5.6	6.3
Housing boom with private credit boom	49	18.3	14.0	14.4	13.2	20.5	14.6	13.2	11.2	15.1	13.1
No Housing boom episodes	-	-	-	-1.7	-1.1	5.2	4.3	3.8	3.2	4.3	3.6

-Most housing booms coincided with private credit booms (49 out of 85)

-The duration of housing booms with private credit booms is longer

-Also housing booms with private credit booms see higher growth in house prices and credit growth

HOUSING FINANCE AND REAL ESTATE BOOMS

▸ Macroeconomic performance during house price booms

Boom Clasification	Type	Number of Observations	Macro performance during the boom					
			Average RGDP growth	Average Inflation	Average change of Exchange rate (NC/$)	Average Consumption growth	Average Investment growth	Average Current account (percent of GDP)
Housing booms without any credit boom	0	18	3.95	5.95	0.22	3.65	4.51	1.01
Housing booms with only household credit boom	1	16	4.06	3.69	-4.10	1.02	1.74	-0.81
Housing boom with private credit boom	2	48	5.54	4.91	-1.34	2.22	4.72	-1.92
Non boom episodes	3		2.67	5.23	2.02	1.31	1.19	0.01
Joint coefficients tests			*(p values)*					
Type 0 and 3 are the same			**0.03**	0.56	0.27	0.07	**0.08**	0.39
Type 1 and 3 are the same			**0.01**	**0.03**	**0.00**	0.25	**0.05**	0.45
Type 2 and 3 are the same			**0.00**	0.74	**0.00**	**0.02**	**0.00**	**0.06**
Type 0 and 1 are the same			0.87	0.12	**0.02**	**0.05**	0.14	0.25
Type 0 and 2 are the same			**0.04**	0.41	0.39	0.16	0.77	0.10
Type 1 and 2 are the same			**0.05**	0.12	**0.09**	**0.08**	**0.02**	0.56

-Economic activity is higher during housing booms

-Inflation not much different than in tranquil times

PERFORMANCE AFTER HOUSING BOOMS

Change in House Prices after Housing Booms

Maximum Change of House Prices after Housing Booms

Change of House Prices at the end of the third year
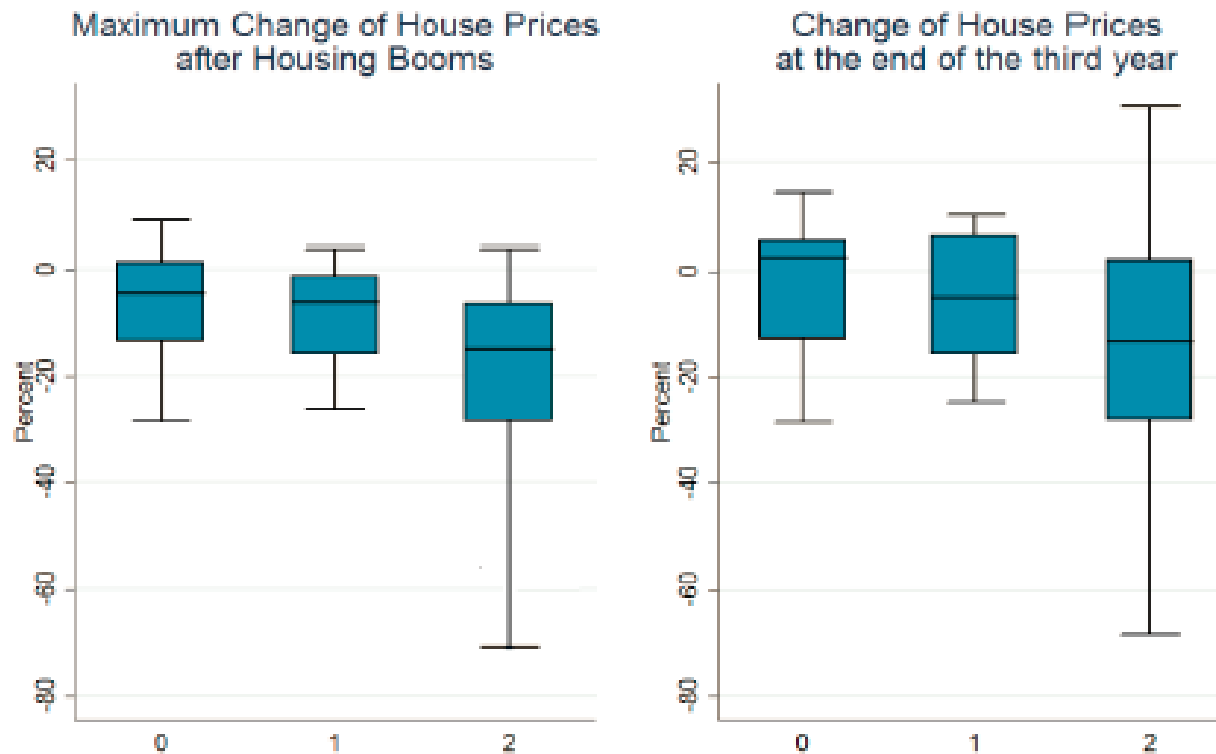
Note: Type 0 is housing boom with no credit boom
Type 1 is housing boom with only HH credit boom
Type 2 is housing boom with private credit boom

PERFORMANCE AFTER HOUSING BOOMS

Can we tell bad real estate booms from good ones?
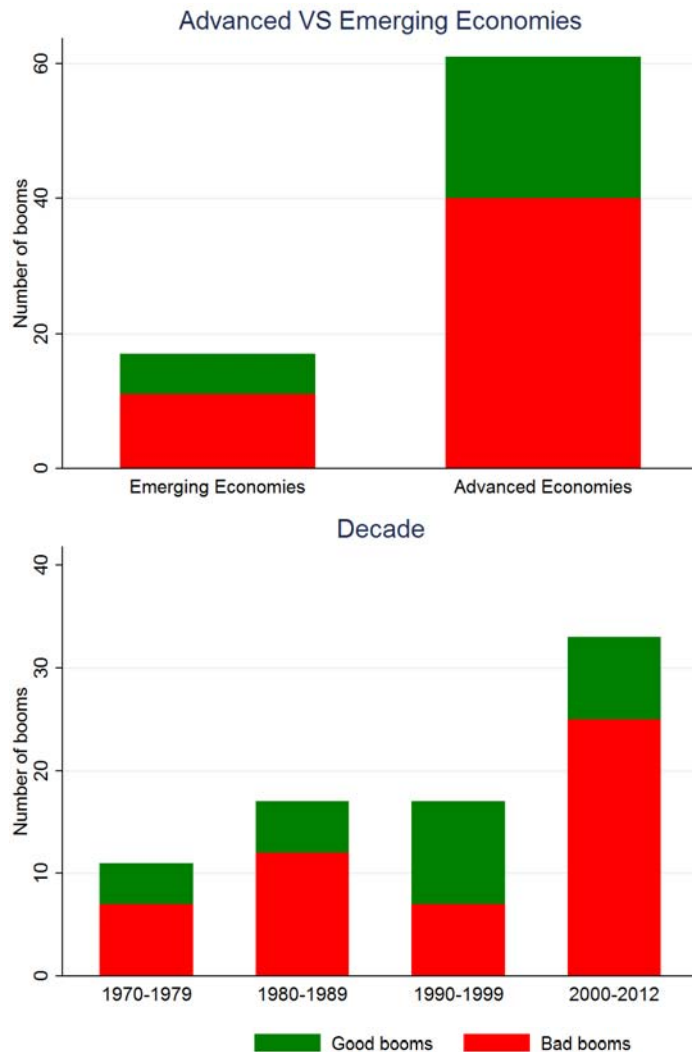
Definition: BAD boom is one that ended in recession

-Proportion (2/3) similar across EMs and ACs

-More bad booms during 2000s

-No clear relationship between duration and how it will end

-Housing booms with priv. credit booms more likely to end badly

POLICY CONCLUSION

▸ Cross-country analysis:

    ▸ The depth of the mortgage market is related to:

- Institutional
- Macroeconomic
- Housing finance characteristics.

    ▸ Space for policy action

POLICY CONCLUSION

▸ Dynamic analysis of booms:

  ▸ House prices are strongly correlated with household credit.

  ▸ Household/mortgage credit needs to be monitored.

  ▸ Macro-prudential policies can help in that respect.

  ▸ The role of Monetary policy should not be downplayed:

  • More than half of real estate booms occurred together with a private credit boom.

POLICY CONCLUSION

▸ Policies are available to deepen mortgage markets and increase homeownership (e.g. housing finance, institutional, macroeconomic stability)

▸ But policy makers should be cognizant of the risks from rapid growth in real estate market (prices and credit)

▸ Dealing with booms could require a mix of policies:

   ▸ Macro-prudential

   ▸ Regulations and policies that affect the supply of land/housing

   ▸ Monetary and fiscal policies