HOUSING FINANCE

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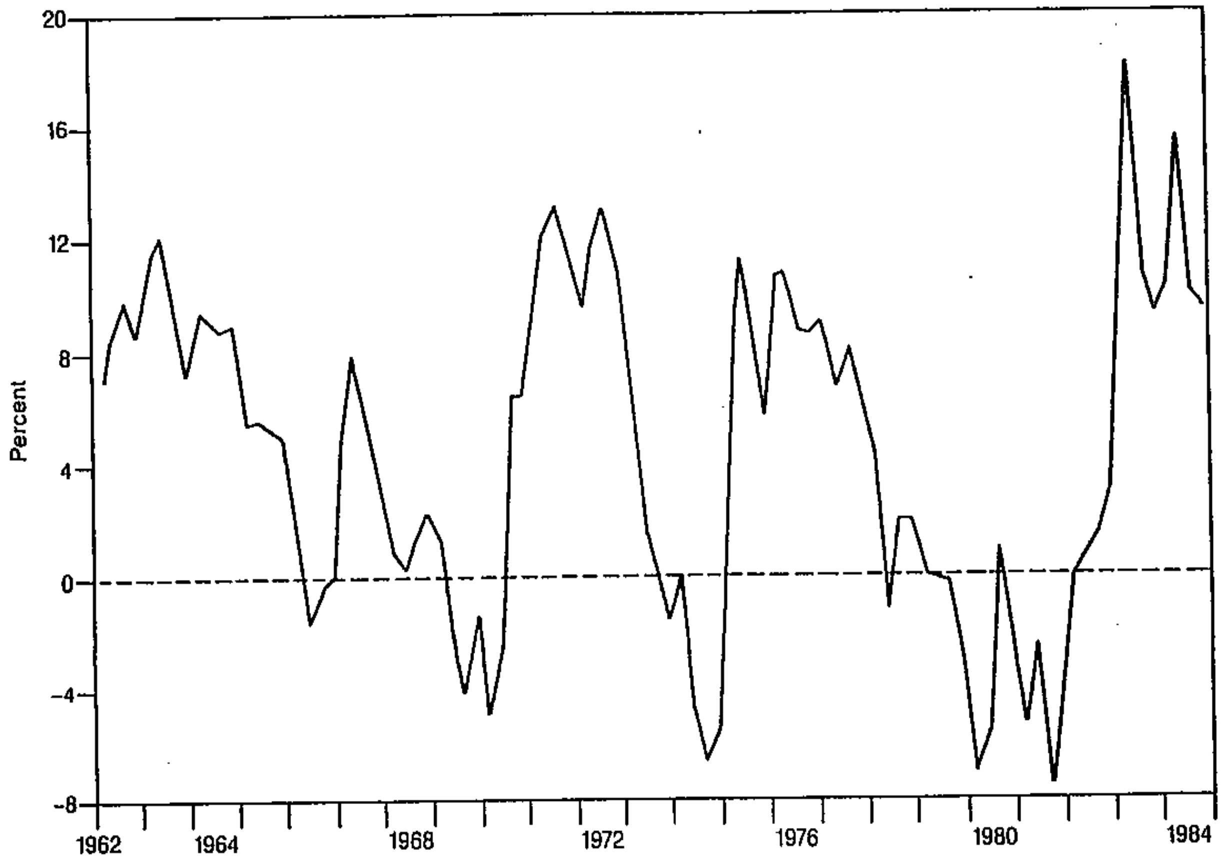
Financial innovations

- Robert Shiller: The New Financial Order
- Stocks, insurance, social security, options
- Housing markets: mortgages, FRM, ARM, securitization

Hendershott: Housing Finance in the US

- 1960s-1970s:
- Mostly FRM, almost no ARM
- Portfolio restrictions & tax inducements => 2/3 of the mortgage market supplied by savings and loans institutions (S&L) and mutual savings banks (MSBs).
- Deposit rate ceilings
- No securitization of mortgages
- As a result, the US housing sector was sensitive to changes in interest rates
- 1980s: restrictions lifted, ARMs, 1986-1989…only 23% of the mortgage market supplies by S&L's and MSBs. The rest is commercial banks and Federal National Mortgage Association (Fannie Mae).

Real deposits at thrift institutions



Securitization of conventional FRMs

- Federal Home Loan Mortgage Corporation (Freddie Mac) – introduced pass-trough security in 1971 and Fannie Mae in 1981.
- Investors receive a pro rata share of the underlying mortgage payments, implicit government guarantee.
- The dollar limit changed with a house price index (187,000 USD in 1989) – 90% of home loans were eligible.
- New (<1 yr since origination) conventional FRMs eligible for agency securitization 4% in 177-1981, 25% in 1982-1985, 69% in 1989.
- Factors behind securitizations

\- Thrifts maintained their share of mortgage originations but sold some of the original mortgages (less profitable than other assets)

\- Pass-troughs good collateral for borrowing

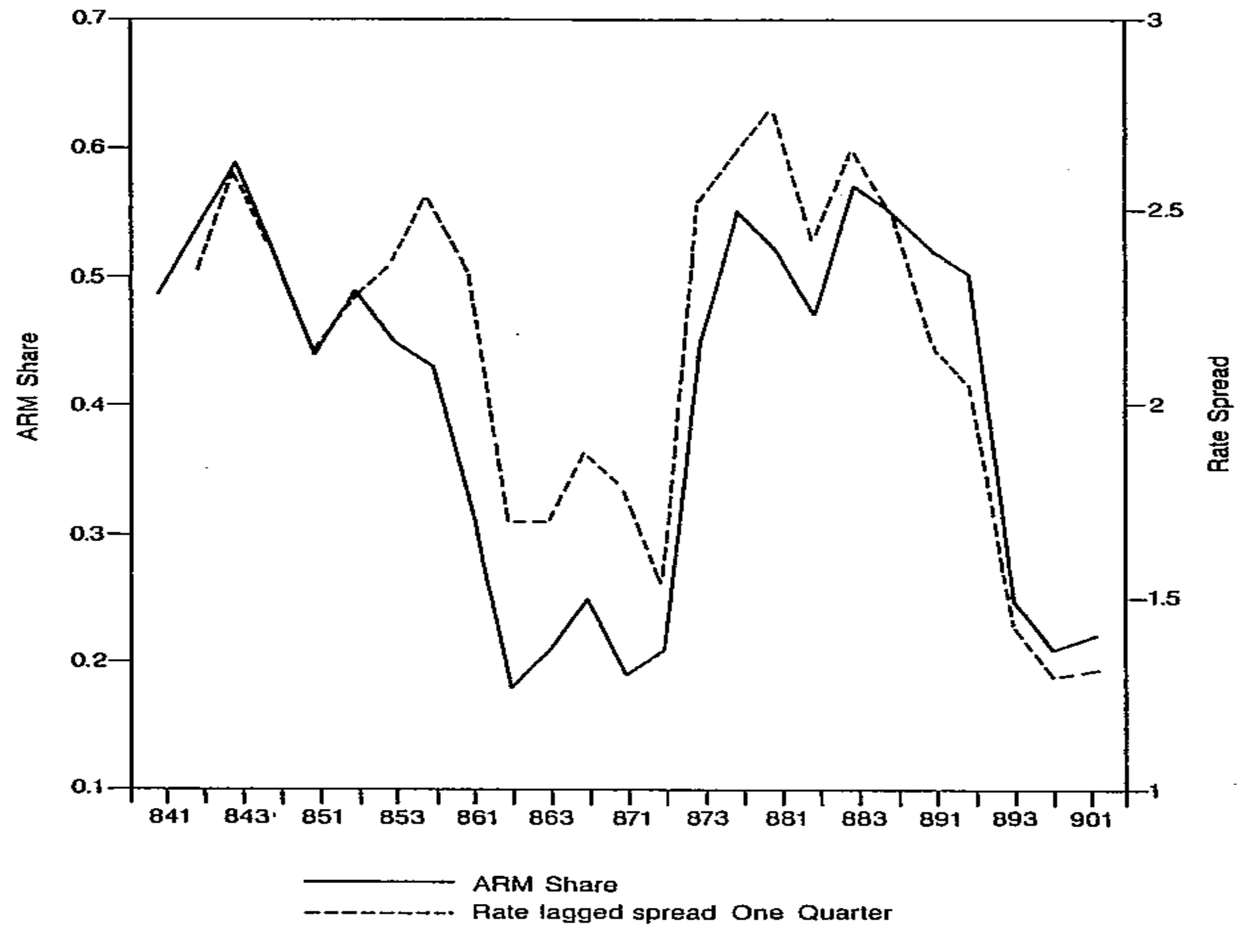
ARMs

- 1960s&70s… ARMs legally not allowed
- 1981…liberal regulations for federally chartered thrifts
- ARM vs FRM…the choice depends on the level and structure of interest rates

Experiment	FRM Rate	FRM-ARM Spread	Probability of Choosing ARM
Mean values	11.23	2.15	.31
Changing FRM rate	10.00	2.15	.28
	15.00	2.15	.99
Raising spread, low FRM rate	11.23	1.30	.12
	11.23	2.75	.50
Raising spread, high FRM rate	14.00	1.30	.82
	14.00	2.75	.95

Source: Hendershott 1990, table 1

ARM share; FRM-ARM spreads, 1984-1989



Real house prices and after tax interest rates

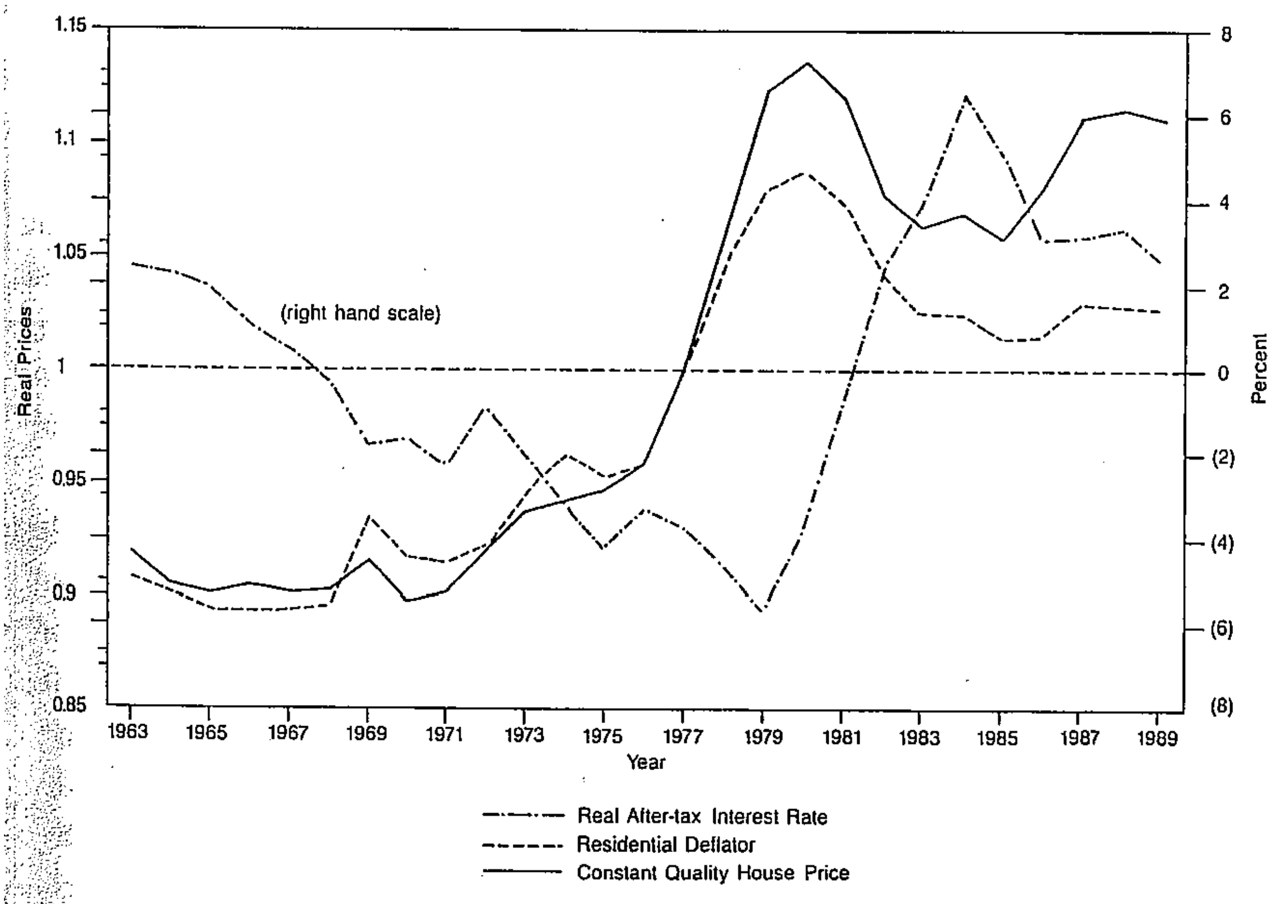


Table 4.6 **Home Ownership Rates of Married Couples (%)**

Age of Head	1960	1970	1980
Under 25	23	26	37
25–29	44	49	58
30–34	62	66	75
35–44	73	77	84
45–64	75	81	88
Over 64	78	79	84

Source: Census of Housing, 1960, 1970, 1980.

Table 4.7 **Home Ownership Rates by Household Types and Age of Head, Selected Years (%)**

	Married Couples			Singles		
Age of Head	1974	1980	1987	1974	1980	1987
Under 25	32.7	34.9	29.9	7.0	11.5	9.7
25–29	54.2	58.2	52.5	13.0	20.2	19.4
30–34	71.9	74.7	69.2	22.5	30.5	28.8
35–39	78.1	82.2	78.0	26.2	37.1	35.7
40–44	82.4	84.7	83.1	29.2	36.6	44.0
45–49	85.1	86.2	86.0	35.3	35.5	44.0
Over 49	83.7	87.1	88.9	54.4	57.4	59.5

Sources: Annual Housing Survey and *Housing Vacancy Survey.* Data kindly supplied by David Crowe of the National Association of Home Builders.

Mortgage Finance in Central and Eastern Europe – Opportunity or Burden?
Thorsten Beck, Katie Kibuuka, and Erwin Tiongson

- Household credit, especially for mortgages, has doubled over the past years in the new European Union member countries, raising concerns about the economic and social consequences of household indebtedness in the event of a macroeconomic crisis.
- Using household survey data for 2005, 2006, and 2007 for both old and new European Union members, this paper assesses the determinants of access to mortgage finance. It also examines whether mortgage holders were more likely to suffer financial distress compared with non-mortgage holders in the period before the global financial crisis.

Preliminary overview of results

- The analysis does not find any systematic evidence that mortgage holders are financially more vulnerable than renters or outright owners; in fact, the incidence of financial vulnerability generally fell between 2005 and 2007, possibly reflecting the strong income growth experienced by these countries over this period.
- In addition, although tenure status is more difficult to explain in the new European Union member countries, the analysis finds that many of the same drivers of tenure status in the older member countries generally drive tenure status in the newer member countries as well.

Household indebtedness

- Household indebtedness has grown rapidly in recent years in a number of countries in Central and Eastern Europe and the Baltic region.
- Between 2001 and 2006, for example, household debt grew at an average rate of close to 40 percent across these countries, while rising only by 11 percent in the older EU member countries.
- Though household debt levels in the new EU countries (about 11 percent of GDP, on average) are still not at the level of more advanced economies (close to 50 percent of GDP), there are significant variations across new EU countries.
- Much of the growth in household indebtedness has been driven by increasing mortgage debt, underpinned by the availability of a broad range of mortgage instruments

Costs and benefits of indebtedness

- On the one hand, the rising indebtedness could reflect the benefits of financial deepening, allowing households to smooth consumption and acquire home ownership without significant previous saving periods. A dwelling can constitute an important, if not the most important, asset for households and access to and cost of financing the acquisition of a dwelling has therefore important repercussions for household welfare.
- On the other hand, while a dwelling can be the most important asset, the loan on the dwelling can also be the largest liability of the household, with implications for its financial vulnerability. The implications for financial stability of rapidly rising household indebtedness and the exposure of banking industries to vulnerable households and “risky” borrowers are causes for concern. The poverty and social implications of a rising debt burden can be enormous, especially in the event of a significant economic slowdown, credit tightening or a macroeconomic crisis.

Financial deepening

- The costs and benefits of rapidly increasing mortgage holdings and household indebtedness can be compared to a similar debate on financial sector deepening in general. While financial deepening is associated with faster economic growth and reduction in poverty levels, rapidly increasing credit levels have, at the same time, been found to be good predictors of crises.
- As financial systems deepen and economies develop, typically a larger share of bank lending goes to households as opposed to enterprises.

Distribution of the household indebtedness across tne new EU members

- To date, little is known about the incidence of household indebtedness and its distribution in the new EU countries. Although some institutions have called for greater use of micro data to assess household indebtedness and overall financial stability, current assessments of the financial risks faced by the banking sector have been largely based on macroeconomic data, including in many advanced economies.
- Aggregate or macroeconomic indicators based on average household indebtedness, however, mask the likely concentration of borrowing among selected households, including among those that are more vulnerable or less able to service their debt in the event of an economic slowdown. Debt holding could vary significantly across household income groups, across age and other demographic groups.

Outline of the study

- documents the recent rapid increase in access to consumer and mortgage credit by households in the new EU member countries.
- compares use of mortgage credit by households of different characteristics across old and new EU member countries
- assesses whether mortgage holding can result in a financial burden, at least during the period preceding the current global financial crisis.
- aggregate lending data across European countries to document recent trends
- Micro data from the EU Statistics on Income and Living Conditions (EU-SILC) to explore benefits and costs of mortgage holding on the household level across countries.

Policy relevance

- These questions are of immediate policy relevance beyond the economies of Central and Eastern Europe and the Baltics. First, recent research for the U.S. has shown that the product variety introduced in the 1980s (such as variable rate mortgages) and the liberalization of the market has benefitted homeowners, as their borrowing capacity was increasingly based on their expected lifetime income rather than their current income.
- Second, the recent mortgage crisis in the U.S. has also shown the risk of greater access to mortgage credit. Specifically, mortgage debt beyond a certain threshold ratio of disposable income and with variable interest payment makes households very vulnerable to shocks and can convert the opportunities offered by a mortgage turn into a financial burden.

Variation in tenure status

- Before 1990, 84% of houses in Bulgaria were privately owned, but only 26% in Russia. If not privately owned, housing was provided by cooperatives or directly by the government.
- In most countries, the transition process included the privatization of the state-owned housing stock and its distribution to the population.
- This did not, however, necessarily imply that households immediately used their houses as collateral to obtain financing.

Aggregate data evidence

- The positive effect of financial development on growth and its dampening effect on income inequality have been driven by enterprise credit, while a deeper household credit segment is associated with more consumption smoothing over the business cycle.
- The composition of overall bank lending in enterprise and household credit is mostly driven by socio-economic and demographic country characteristics and less by policy variables.
- information-sharing arrangements (such as credit bureaus) and judicial enforcement are positively related to household indebtedness and negatively related to defaults.I.e., credit information systems, strong legal rights for both borrowers and lenders (e.g., bankruptcy law), and macroeconomic stability all serve to promote housing finance systems.
- Financial deregulation also drives mortgage debt growth.

Tenure status

- the determinants of being a mortgage holder
- there are still significant structural differences between old and new EU countries. Specifically, the probability of being a mortgage holder is less sensitive to income and age in the new than in the old EU countries. In general, it is more difficult to explain variations in tenure status in the new than in the old EU countries.
- no evidence that prospective, rather than current, income determines the use of mortgage finance in any of the new EU countries, though this seems generally true for the older EU members as well.
- empirical analysis also suggests that in spite of the rapid aggregate increase in mortgage finance, mortgage holders are not more likely to report financial burden or incur arrears than renters or outright owners. In fact, the likelihood of financial distress among mortgage holders in the new EU member countries fell between 2005 and 2007, possibly reflecting the generally strong income growth experience by these countries over this period.

Mortgage credit across Europe: the aggregate view

- **Fig. 1** Household credit to GDP increased from less than 5% in 2000 to over 25% of GDP in 2007 across the new EU countries, while at the same time, it increased from 42% to 50% in Western Europe. A wide variation.
- **Fig 2.** While mortgage credit constituted 80% of household credit in Estonia in 2007, it constituted less than 20% in Romania. In Western Europe, the share of mortgage credit in total household credit ranged from 54% in Austria to almost 90% in the Netherlands.
- **Fig 3.** The rapid increase in the importance of household credit has gone hand in hand with adecreasing importance of enterprise credit in overall bank lending
- **Table 1** In the old EU countries, almost all household and mortgage loans are denominated in local currency; in contrast, a large proportion of mortgage loans in the new EU countries are denominated in foreign currency, mostly Euro or Swiss Franc (Table 1). The share of foreign exchange mortgage loans, however, varies enormously among the new EU countries, ranging from less than one percent in the Czech Republic to more than 50% in Hungary and almost 90% in Romania.

Who has access to mortgage finance?

- **Fig. 4** The share of mortgage holders varied from 1.9% in Slovenia to 57.6% in Denmark, while the share of renters ranged from 10.7% in Lithuania to 48% in Austria. The average share of mortgage holders increased from 31.7% (12.9%) in 2005 to 32.4% (18.3%) in 2007 in old (new) EU member countries. High share of outright owners –due to housing privatization in the transition process.
- **Fig. 5** the share of mortgage holders against the ratio of mortgage credit to GDP shows a positive correlation suggesting that the SILC surveys capture aggregate trends in the population
- **Fig. 6** Richer households are less likely to rent and more likely to hold mortgages. No clear relationship between outright ownership and income across countries. The sensitivity of tenure status to income varies significantly across countries. Mortgage holdings are significantly lower at all income quintiles in the new EU member countries, whereas outright ownership is typically higher in transition economies.
- **Fig. 7** outright ownership increasing with age, while renting decreases with the age of the household head. The share of households with mortgages first increases then decreases with the age of the household head.

Can mortgages turn into a financial burden?

- The main benefit of a mortgage loan, as of loans for consumer durables such as cars, is that the consumer is not forced to save the whole amount for the good or house upfront, but can smooth payments over time. In the case of mortgages, the underlying asset – the house – typically appreciates over time, both in real and nominal terms, at least in the medium to long-term.
- However, while a mortgage can help mitigate liquidity constraints and help realize large investments in housing earlier, mortgage debt holding itself may turn into a financial burden. If the income stream used to make repayment is subject to macroeconomic shocks, in the absence of a savings buffer, a household may fall into financial distress.
- These shocks can be channeled through income shocks (such as an economic slowdown) or through exchange rate (if the mortgage is in foreign currency) or interest rate (in case of variable-interest mortgages) shocks. Further, if the mortgage payments represent a large share of disposable income, rising debt burden may curb the household’s ability to respond to shocks to other expenditure categories, such as in case of rapidly rising food and energy prices, as observed in 2007 and 2008.

Measures of fin. distress/ risk of default

Measures in literature:

- "Financial margin" or the disposable income net of debt service payments and average basic living costs.
- Some indicative threshold debt service obligation as a share of disposable income, typically around 30 percent.
- Actual financial distress, as evidenced by mortgage payment arrears and other types of payment arrears – the approach taken here.

Measures used here:

- FINBURDEN, the question how burdensome the total housing cost is. Responses vary from 3 = a heavy burden, over 2 = somewhat a burden, to 1 = not a burden at all, subjective.
- variables indicating whether a household has (i) arrears on mortgage or rent payments, (ii) arrears on utility payments, and (iii) arrears on hire purchase installments or other loan payments. FINVUL a binary variable indicating whether a household had any arrears on one of the above payments.
- variable indicating whether a household has unmet medical needs due to lack of finance.

Financial burden across countries in 2007

- **Table 5** Self-reported burden are significantly higher in the new EU countries than in the old EU countries. The new EU countries still had, on average, a higher share of the population with arrears on utility bills.
- **Fig. 8** shows a significant negative correlation of income with financial burden across all countries in 2007.
- **Fig. 9** on average, arrears in payments decrease with the income deciles, though not monotonically, most likely due to the small number of households with arrears.
- **Fig. 10** the financial burden is, on average, not correlated with the age of the household age, with the exception of Denmark, Great Britain, Ireland, Netherlands, Norway, Sweden and the UK, where we see a decline in self-reported financial burden with the age of the household head.
- **Fig. 11** with few exceptions – most prominently Greece – there is a negative relationship between the age of the household head and the likelihood thatthe household is in arrears.