More mortgages, less housing? On the paradoxical effects of housing financialization on housing supply and residential capital formation

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Abstract

This paper argues that the explosion of mortgage finance has not led to a proportional extension of housing supply across most of OECD countries in historical perspective. Based on a unique collection of long-run data of housing construction and residential investment across most OECD countries, it shows that the co-cyclical behavior of construction, prices and mortgage credit has been replaced since the 1980s by a decoupling of house-price-mortgage spirals from the underlying stagnating or declining construction. Mortgages have a hyperbolic effect on construction: positive until a threshold, negative thereafter. The paper argues that local anti-growth coalitions, budget austerity and concerns about bursting house price bubbles have impeded new construction from taking off. Private mortgage markets have thus been a less reliable policy alternative to traditional state-led housing construction policies.

Keywords: financialization, housing, construction, capital formation

Introduction

Many contemporary OECD countries have been debating housing shortages, while simultaneously witnessing high levels of mortgage debt, house prices and rents. This combination has not only led urban scholars to speak again of the comeback the "housing question" (Aalbers, 2016) or the "new urban question" (Merrifield, 2014), as housing affordability has become a widespread problem. What is more, in many advanced economies, there is a debate about global or at least local problems of housing shortages, notably of affordable housing and particularly in growing cities. It seems puzzling that the stimulus of higher prices and the demand shock of mortgage extensions continuous to coexist with problems of housing supply shortages.

This paper uses original long-run data to investigate the historical relationship between housing production and mortgage credit. It reveals a decoupling of housing finance (prices, mortgages) and real housing supply indicators (new construction, residential capital formation, construction employment). While more mortgages generally increase building activity up to a certain point, the unique explosion of private mortgage credit since the 1970s has not led to a proportional extension of the housing stock, but

rather to an inflation of house prices and construction-depressing effects. The association between mortgage debt and construction (investment) looks like an inverted hyperbola. While the increase of mortgage availability has led to more construction in many historical time periods and in certain country contexts, it has rather dampened new construction, investments in housing and residential capital formation in the last few decades, particularly in combination with rising house prices and particularly in countries that witnessed mortgage boom. The extension of private mortgage credit – or what some have called the privatized Keynesianism through housing (Crouch, 2009) – has thus not fully lived up to the promise to take over the role of state-led housing policies when the postwar reconstruction boom was over.

The paper further explores *why* more mortgages have not led to more housing investment beyond a certain point and proposes three answers: *first*, on the supply side, there are local anti-urban-growth coalitions of local not-in-my-backyard residents, environmentalists and speculators which create the bottleneck of construction land through restrictive land policies. These local supply policies are difficult to realize by national politicians. Instead and across party cleavage lines, these politicians promoted easier access of more and more private mortgage credit nationally. But more national credit was not to extend local supply of new residential land or more cities. *Second* and again on the supply side, the state withdrawal from supply-side housing policies has left a void of instruments to directly intervene in the construction of new housing. The social-housing-construction machine of the post-war era was not only about giving out credits, but implied a whole infrastructure of government construction loans, the social housing providers as builders, regional and development plans. With the switch from supply- to demand-side policies the governmental grip on new housing supply was replaced by the faith in the mortgage-price transmission mechanism which seems to work less smoothly than hoped for. *Third*, on the demand side, those taking out new mortgages are not necessarily those contributing to new constructions, particularly the elderly or housing rentiers. Mortgages can thus be used more readily by owner-occupying insiders of housing markets and for all kinds of purposes other than new construction.

The paper makes a contribution by collecting for the first time a long-run dataset on residential construction activity for 17 countries (and a short-run dataset for 20 more). The descriptive trends alone reveal a unique tendency of housing-financial decoupling from real construction activity which most have suspected but no one has shown. The central contribution, however, is the finding of a long-run hyperbolic relationship between mortgage credit and construction: mortgage extensions have a positive effect on construction but only up to a certain country- and time-specific threshold. The paper thus contributes to the growing literature on financialization in housing which is more and more critical of the socially problematic effects of too much finance in housing. This paper shows that too much housing finance even has problematic effects for the very subject matter it is made for: new construction and physical capital formation.

The paper is structured as follows: I first survey the existing literature explaining housing construction and dealing with the "financialization of housing." I then present the unique collection of data. In the result section, I first present the descriptive trends of housing construction and mortgage development to then investigate in a multi-variate time series regression whether the later impacts on the former. The discussion enquires about why more mortgages do not end up in more housing. I conclude by pointing to the social consequences of the main finding.

Existing literature

For this paper, two kinds of literature are particularly relevant. First, there is a long-standing literature in economics about what drives new construction and new housing investment. This literature already reaches back to more than a century ago when scholars of the business cycle in particular started wondering about the relationship of building and business cycles. The second thread of literature – more addressed by political scientists or financial geographers – concerns the effects of financialization on the real economy and in particular those on housing and construction phenomena.

Given the widely admitted centrality of housing investment for the general business cycle (Leamer, 2007), the literature explaining housing supply is rather scare and rather inconclusive (DiPasquale, 1999; Vermeulen & Rouwendal, 2007). Generally, studies explaining new construction (in single- or multi-family buildings), in new residential investment (or repair investment) find a positive house-price-elasticity that can range between 0 and 6 depending on the country and the short- and long-run (Malpezzi & Maclennan, 2001). But prices alone do not suffice to explain variation in construction. Usually, additional factors such as demography (population size, growth and structure), inflation and the time it needs to sell are also found to play a role. In a study of four historical German cities during the pre-WWI urbanization wave, for instance, the number of marriages was found to be almost the single most-important predictor of new supply (Wellenreuther, 1989). Surprisingly, construction costs are often found to be insignificant or indeterminate in direction (Caldera & Johansson, 2013). Supply of sufficient land for construction has been found to impact on the supply elasticity in construction (Glaeser, Gyourko, & Saiz, 2008). Mortgage market conditions themselves are hardly mentioned in this literature which is probably due to the fact that many studies use regional US data and urban or regional mortgage data are difficult to come by. In the few cases where interest rates, credit constraints or savings deposits are mentioned (DiPasquale & Wheaton, 1994; Poterba, 1984), they point in the expected direction: more permissive mortgage conditions are a demand stimulus for housing supply.

While finance has thus not played a major role in explaining construction, housing construction has not played a major role in the financialization literature. The interplay of finance and the real economy has traditionally been investigated in light of finance's positive role for economic development (Goldsmith, 1969). The more recent literature grouped under the key term "financialization" has taken a rather critical stance towards the influence of growing financial markets, growing household debt or growing financial profits on the economy (Debelle, 2004). Thus, critics of "too much finance" have pointed to its negative effects on productivity and growth (Cecchetti & Kharroubi, 2012), on negative effects on physical capital formation and hence growth (Stockhammer, 2004) and positive effects on inequality (Bezemer & Samarina, 2016).

An application of the financialization literature to housing phenomena is of more recent date (Aalbers, 2008). Based mainly on case studies of developments in the 1990s and 2000s, this literature has focused more closely on how mortgage market liberalization in the 1970s and 1980s increased debts and house prices, so in the UK (Meen, Gibb, Leishman, & Nygaard, 2016; Monnery, 2011), in the US (Mian & Sufi, 2009) or the Netherlands (Aalbers, 2004). This literature is often critical of financialization and considers it to be the source of growing inequalities, the financial crisis and the ensuing Great Recession. It suggests that higher indebtedness before the crisis in the US – similarly to occurrences before the Great Depression of the 1930s (Brocker & Hanes, 2012) – has led to rising foreclosures and falling homeownership rates

(Mian & Sufi, 2016). But while there is a growing number of descriptive accounts of how and why financialization of the different sorts takes place, there is not much demonstration of what the actual consequences of financialization actually are, particularly for housing construction. This paper is meant to fill this gap.

Data: New construction activity data and control variables

There is no established international database for construction activity, let alone for a long-run view, to operationalize the dependent variable – housing output – in terms of volume and value variables. The volume variables can be measured in square or cubic meters, housing or building units; the value is measured as the investment directed to the housing sector. Both are available for the existing housing stock or for the annual flow of new constructions (and the conversions, additions, maintenance, etc.). For current purposes, I will use the annual new constructions and its monetary equivalent, the housing investment share in overall capital formation. Construction statistics are collected from a great variety of different national and historical sources which are documented in a 30-page online appendix[1]: the investment data are taken from the OECD capital formation statistics from harmonized national accounts. The latter excludes the investment in existing assets and the investment in repair or maintenance, but includes improvements (extensions, modernizations) as they are considered to increase capital formation.

The former, new construction volumes, is available as permits, starts and completions, unfortunately with different country coverage. The advantage of housing starts (and permits) as measure is that they are the most sensitive measures to reveal macroeconomic impacts on initiated construction activity. Their obvious shortcoming is that not all housing starts end up in completions and capital formation due to construction-loan problems, bad calculations or speculation. Completions, in turn, have the disadvantage that they lag behind starts with one or two years. On the positive side, however, they report what really has been constructed and resulted in physical capital formation and their coverage across countries is highest. For these reasons and for my interest in the actual resultant of mortgage extension on construction, I opt for completions as the measure for new construction volume. To control for demography right from the start, I divide completions by the current population which yields a commonly used variable in the range of 2 to 15 completed units per 1000 inhabitants. To smoothen the normal distribution I take the log of this variable as the unit-based dependent variable. In cases of missing completion data due to countries' not having surveyed them at all (Belgium) or at certain points in time (USA), I approximated completions through housing starts and permits.[2]

On the side of explanatory variables, I rely on the Macrohistory dataset for long-run series on mortgage debt and house prices for the 17 OECD countries which are the core of this analysis (Jordà, Schularick, & Taylor, 2017; Knoll, Schularick, & Steger, 2015). As extension, I also use the Bank of International Settlement household debt per GDP data to take a comparative look at a sample of 20 more countries, including emerging economies. As mortgage variable I use the ratio of mortgage debt per nominal GDP

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[1] See https://sites.google.com/view/sebastiankohl/data
[2] My rule of approximation is the following: If available, I use the first lag of housing starts multiplied by the median ratio of housing completions and starts in my sample excluding the war and post-war years, namely 0.98. If starts are also not available, I use the first lag of permits again multiplied by the average ratio of housing completions and permits, namely 0.95. This is to make sure that the *levels* of completions is approximated, as the over-time *trends* is highly similar. Both lagged permits and lagged housing starts correlate at r = 0.98 for the available data.

which strongly correlates with the deflated mortgage volume time series, but has the advantage of not being nominally denoted. It also correlates with the less well covered OECD measure of household debt per disposable income. I also use real interest data from this data source.

What concerns other control variables, I use Mitchell's historical statistics in combination with the OECD for demographic information of marriages and population aging. For urbanization I combine the Cross National Time Series data (CNTS) on the growth rate of the per capita population of cities with more than 100.000 inhabitants until 1960 (Banks & Wilson, 2013) and combine this rate with the urbanization growth rate from the World Bank data after 1960. The CNTS also provides long-run data on cement use per capita. I rely on the most recent Maddison Project data for population and GDP development (Bolt, Inklaar, de Jong, & van Zanden, 2018). All stock variables are used as first differences as the dependent variable is a flow variable.[3] I lag the independent variables by one period as their effects on eventual completions or the decision to invest will most probably not occur in the same year.

Results: Financial decoupling and the inverted hyperbola

Figure 1 presents the co-movement of house prices and outstanding debt per GDP to depict the financial side of housing. Simultaneously, it shows two indices for construction activity – completions by population and the residential capital formation by GDP – to represent the real side of the construction economy. The decoupling can also be found for these measures. Taking 1975 as the base for all indices – roughly the end of the postwar reconstruction boom – the post-1980s reveal a great disconnect between the take-off of house-price-cum-mortgage-credit spirals and the indices of the "real" construction economy in many countries, particularly Australia, Great Britain, Norway, Sweden and the Netherlands (note the country-specific scales). In comparison to the previous experiences of the 20th century, the scale of the mortgage-cum-house-price increase was unprecedented. In other countries, notably the United States, construction became less decoupled. Japan, with its unique house-price deflation since 1990s, also reveals a different development, as does Germany, one of the few countries with recently declining mortgage-debt levels. Southern European countries are different because many witnessed a new building cycle, boom and bust which accompanied the mortgage boom. But the decoupling of all price-based from the unit-based or real-activity measures is even visible in these cases.

The distinction between the "real" and the "financialized" side of housing can also be approximated by other measures than the ones shown here. The "real" side can alternatively be represented by the building costs, the employment share in the construction sector and the cement production per capita. For the financial side, I also used the imputed land prices from Knoll et al. (2015) or the construction investment per GDP to represent the financial side. The resulting picture resembles the one shown in Figure 1: as land prices make up, on average, more than 80 percent of the house price increase (ibid.), with building cost increases being the remainder, they almost take off as much as the house price index. As construction investment is also used for acquiring land, this measure also witnesses a take-off. The building cost index – which usually reflects both material and labor costs – increases only moderately over the long-run. The

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[3] Housing stock data themselves are notoriously imprecise as they are completely surveyed (or estimated) at every housing census. The inter-census years are estimated using demolitions, new constructions and depreciation data. At the last German census, for instance, there were about 500.000 units more than estimated, in 1987 even one million less.

same holds true for the main components of the material construction input such as the cement production per capita and the construction employment share: in countries where a construction boom accompanies the mortgage boom, these measures also show cyclical increases, but in the realm of building cycles' traditional amplitude.

Figure 1: Housing construction, investment, house prices and mortgage indices (base=1975)
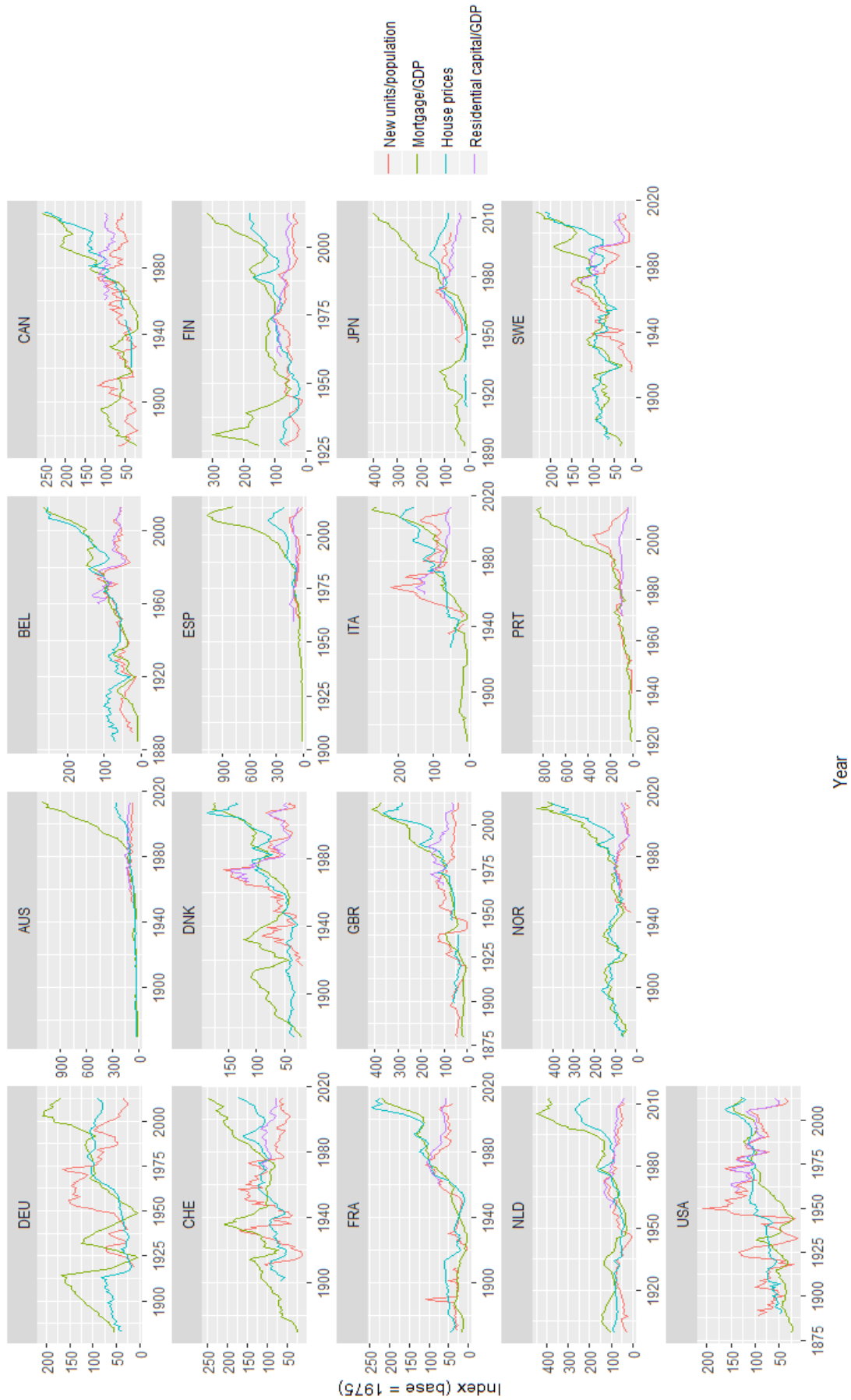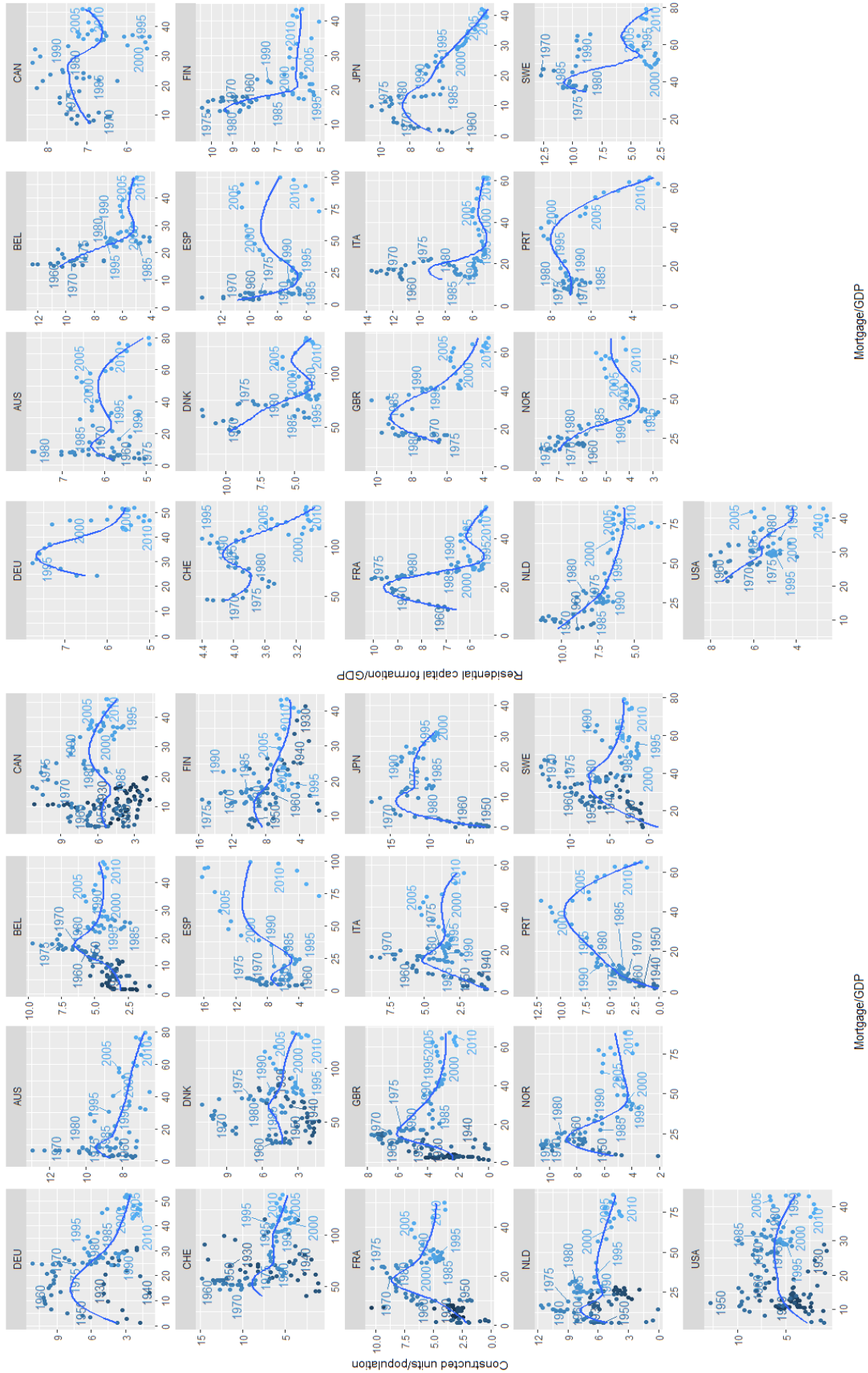
Figure 2: Mortgage debt and construction output (left) or residential capital formation (right)

By many different measures then, there has been a decoupling of the financial from the "real" side in housing construction, but is there an association of one with the other? The bivariate Figure 2 displays the absolute levels of mortgage debt per GDP on both X-axes and two different proxies for the construction activity on the Y-axis: on the left hand side, there is the unit-based measure of completed houses per 1000 inhabitants starting in the early 20th century. On the right hand side, there is the value-based residential capital formation per GDP starting in 1960. In almost all countries a non-linear, inverse U-shape describes best the relationship between mortgages and construction within countries (approximated by the non-linear Loess curve): up to a certain threshold which ranges between 20 to 50 percent of mortgage indebtedness per GDP, depending on the country, a positive effect of higher mortgage indebtedness levels on house construction or residential capital formation can be observed. Beyond this threshold, however, the effect becomes negative. In many countries, this threshold separates the pre-1980 from the post-1980 period, as revealed by the points' coloring, with very few exceptional periods such as interwar Finland or the United States. Some countries, such as Spain or Portugal, break the general hyperbolic trend as they saw another construction boom in recent years which accompanied the mortgage boom.

The turn to a generally negative within-country association of the old industrial economies can also be found in cross-country perspective of available years since 1990, as shown in Figure 3. Here the old industrial countries have accumulated the highest levels of outstanding mortgage debt per GDP without this being positively associated with correspondingly more construction activity per population. In the much less indebted emerging economies, particularly Turkey, Russia, China, Korea and some Eastern European countries – but not in Singapore and Hong Kong – , the initial mortgage-financialization of the economy is still associated with higher construction levels, hence a positive regression line slope.

Figure 3: Debt and construction in emerging versus old-industrial countries
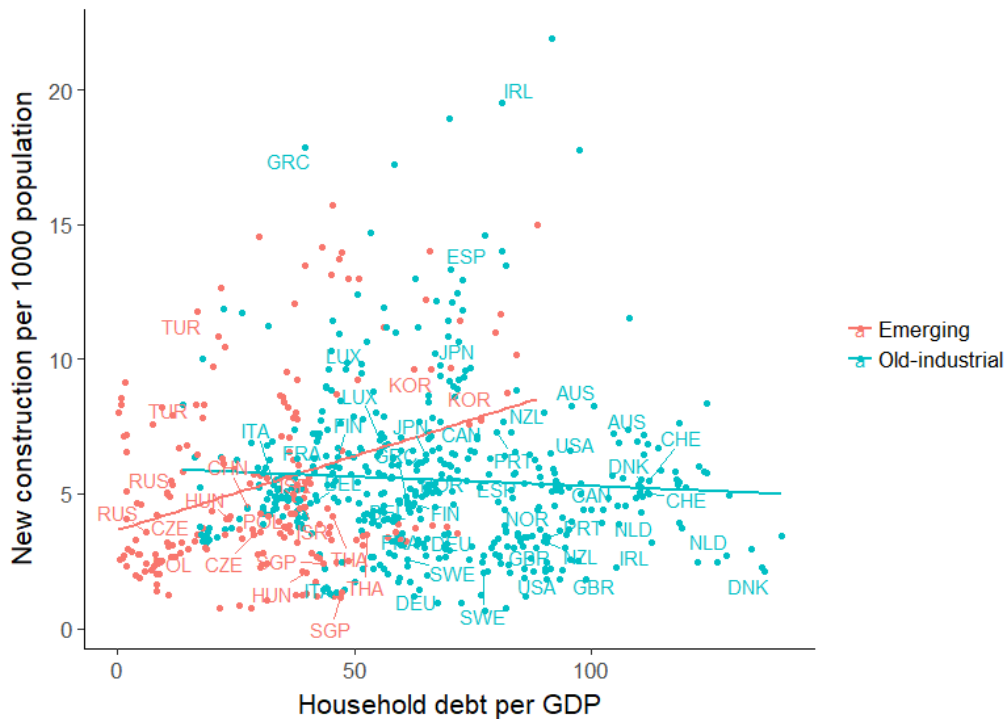
Thus, with country nuances, increases in mortgage finance since the 1980s have not been associated with proportional increases in physical capital formation of either new housing units or improvements of existing ones, but have rather inflated the asset prices of existing stock. While in some countries there also have been moderately rising building costs, the price boom is almost entirely driven by land prices (Knoll et al., 2015). The decoupling of housing finance and prices from real construction activity is not simply reducible to population stagnation or decline in Western countries, as the construction data are controlled for by population. They are also not a simple volume-effect as the curve for residential investment, which is measured as a proportion of monetary values, points in a similar direction. But this is still only the bivariate picture.

To investigate the effect of mortgage extensions on new construction with more controls, I turn to panel regressions with the housing completions by population (logarithm) as dependent variable which is non-stationary (non-significant Dickey-Fuller test) and approximately normally distributed, but auto-correlated which is why I include the first lag of the dependent variable. Non-stationarity problems in independent variables are solved by first differencing of the affected stock variables.

As main explanatory variable I use the deflated mortgages held on banks' balance sheets as lagged first differences, as not the levels but the additional mortgage debt should explain new construction.[4] As the timing of the mortgage effect is not straightforward, I examined the lag structure and opted for one lag of this and other variables. An inspection of this main independent and the dependent variable reveals again a curvilinear relationship, resembling an inverted hyperbola. For this reason I also include the squared term of the main dependent variable. As additional controls I use economic variables (GDP, interest rates) and demographic variables (population growth, marriages, urbanization), each time in the differenced form to fit the explanation of flow data. To control for particularities of countries' construction history – Japan, for instance, has a much lower building age and thus a higher turnover in stock – I use country fixed effects. To control for time-specific heterogeneity – some construction years show peaks or troughs – I use year fixed effects. To account for the particularity of the post-1975 period, I use an additional period dummy in interaction with the mortgage variable.

Model 1 in Table 1 shows the general effect of the lagged differenced mortgage share per GDP and its square term on new construction, controlled for the autocorrelation of the cyclical dependent variable. Mortgage debt remains without significant effect, but increasing mortgage debt has a negative impact on construction, confirming the basic inverse hyperbolic shape of the curve. In an interaction of mortgage growth with countries, only Portugal, the UK, Belgium and France have a significantly higher mortgage effect on construction when compared to Germany (not shown). The second model introduces a dummy for the post-1975 time period compared to all previous years. Relative to the generally negative mortgage effect, the post-1975 mortgage growth of 1 percent per GDP adds a supplementary 5.1 percent to construction growth. The hyperbolic effect itself, however, is also more pronounced such that additional mortgage growth turns into a negative effect. This overall pattern holds throughout the models 3 and 4 which introduce demographic and economic controls, respectively: the stimulus of higher previous house prices leads to more construction, but also represses it by the interaction with the growth in mortgage indebtedness. While GDP growth impacts positively on growth, interest rate growth decrease it. On the

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[4] Strictly speaking, the increase in outstanding mortgage debt cannot measure the flow of new mortgages, but it is the best available measure.

demographic side, the share of marriages[5] per population and population growth increase the need for construction, while urbanization growth is without effect.

Table 1: OLS-regression with fixed effects of mortgage debt on housing construction

	Dependent variable: Log housing completions by 1000 inhabitants			
	(1)	(2)	(3)	(4)
Mortgage growth	-0.001 (0.004)	-0.024*** (0.006)	-0.013*** (0.005)	-0.008 (0.005)
Mortgage growth square	-0.001* (0.0005)	-0.00001 (0.001)	-0.0002 (0.0005)	-0.0004 (0.001)
Housing completions lag	0.161*** (0.004)	0.161*** (0.004)	0.152*** (0.004)	0.141*** (0.004)
House price growth			0.005*** (0.001)	0.003** (0.001)
GDP growth			0.010*** (0.002)	0.015*** (0.003)
Real interest rates			0.000 (0.000)	-0.0001*** (0.00001)
Marriages				0.011*** (0.004)
Urban growth				0.003 (0.007)
Population growth				0.0001** (0.00003)
Mortgage growth*Post-1975		0.051*** (0.009)	0.032*** (0.007)	0.026*** (0.008)
Mortgage square*Post-1975		-0.003*** (0.001)	-0.002** (0.001)	-0.001* (0.001)
House-price*Mortgages			-0.0004 (0.0003)	-0.00003 (0.0003)
Constant	0.736** (0.317)	0.754** (0.313)	0.697*** (0.240)	0.888*** (0.242)
Observations	1,566	1,566	1,400	1,072
Adjusted R^2	0.763	0.769	0.827	0.838
Fixed effects	Country/year	Country/year	Country/year	Country/year
Residual Std. Error	0.313 (df = 1404)	0.310 (df = 1402)	0.235 (df = 1233)	0.202 (df = 921)
F Statistic	32.378*** (df = 161; 1404)	32.951*** (df = 163; 1402)	41.221*** (df = 166; 1233)	38.029*** (df = 150; 921)

*Note: *$p<0.1$; **$p<0.05$; ***$p<0.01$; all independent stock variables are lagged difference and growth variables*

The above finding is robust under different specifications: it holds when changes of the lag structure are tried out; it holds when replacing the mortgage-per-GDP by the deflated first differences of the mortgage volume variable. It also holds when replacing the annual data by 3,5 or 10 year averages that smoothen the shorter construction cycle and control for potential problems in the construction statistics.

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[5] Japan and certain historical time periods in other countries are lost as cases.

Discussion

The results support a hyperbolic relationship between mortgage debt and residential construction: While the effect of mortgages on construction is generally positive, particularly also after 1975, it turned negative once mortgage debt grew too much, particularly after 1975 when the financial decoupling took place. One could argue, of course, that in the financialized countries it was not necessarily the *new* construction and not even *new* capital formation (which includes value increasing extensions of existing buildings), but the rising repair and maintenance works which became necessary once the postwar reconstruction boom had provided every family with a home. By the 1980s, one could argue, the first maintenance cycle simply took its toll, as the postwar units started to depreciate. Even given stagnating building costs, the amount of investment going into maintenance simply increased in that view, without, however, improving the residential capital substantially.

In principle, the above lagged effects of the dependent variable but also the gross capital formation should control for this objection, as both depreciation and value increasing extensions of existing buildings are accounted for. But it is indeed true that in the 1980s, the housing investments in the existing stock began to overtake the investments in new constructions in some Western countries. This share could even go beyond 50% and could reach top levels of 80% in some countries. It is notoriously difficult to estimate these numbers, as they are not as clearly surveyed by permit systems as the new construction. Most countries, however, have estimates of their maintenance share and Euroconstruct collects these data for many European countries since the 1990s.[6] While it is true that the overall share of investment into the existing stock increased in some countries during this period, it also stagnated in some countries and even declined in others. The increases also do not necessarily go along with the respective increases in mortgages.

Thus, it is difficult to maintain that the observed decoupling of non-productive housing investment and real construction activity is simply reducible to an explosion of maintenance amount and costs. But why have rising prices and the availability of (more accessible) mortgages not led to more construction and real residential investment beyond a certain point?

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[6] I thank the ifo-Institute for providing me with the Euroconstruct data.

Figure 4: Share of investment into the existing housing stock
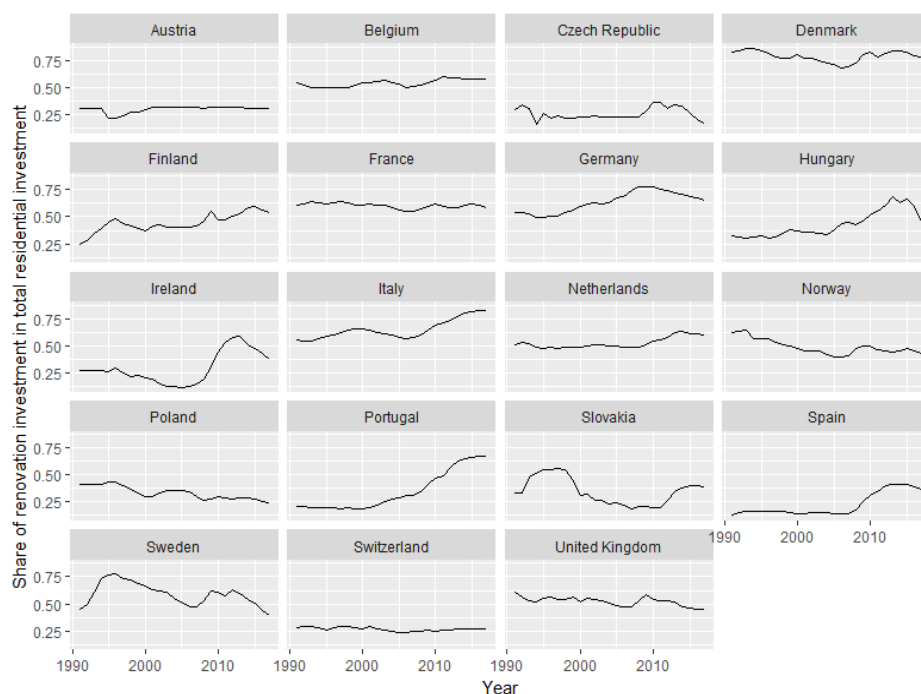
Source: Euroconstruct

A *first* explanation focuses on the supply of urban land. There are local anti-urban-growth coalitions of local not-in-my-backyard residents (NIMBY), environmentalists and speculators which create the bottleneck of construction land through restrictive land policies (Ihlanfeldt, 2007). Empirical work, almost exclusively using within-US variation, shows that more building- and land-related regulation increases housing prices, but not necessarily new construction (Glaeser & Gyourko, 2002). The members of this coalition are first and foremost local homeowners who, afraid of decreasing house prices, opt against new and denser construction in or close to their neighborhood (Coelho, Dellepiane-Avellaneda, & Ratnoo, 2017). This opposition is strongest in the Anglo-Saxon and particularly US context where the power of suburbs over their own zoning laws and building codes is particularly pronounced, whereas in many European countries, cities are more centralized and powerful against their suburbs (Nolte, 1988). But even here the austerity of municipal budgets is an obstacle to major suburb extensions as in former times. What is more, the stronger democratic sensibilities today make many of the urban redevelopment or city extension projects of the post-WWII kind not feasible and rising asset prices have created a housing rentier class that acts against local supply shocks.

A tacit coalition partner of this group are environmentalists or even climate-change activists as climate-inefficient and countryside-damaging suburbanization that moreover endangers natural habitats or agrarian land is a key item on their policy agenda (Engelke, 2011). A third group in this tacit coalition are promoters of the cultural heritage (and touristic capital) of cities, particularly in the European context, where ever since the opposition against elevated railways and skyscrapers in cities, building codes limited the height and thus vertical growth of most cities (Von Saldern, 2006). But also in the American context has closeness to the historical settlement centers been found to be associated with more intense land-use

regulation which – together with natural boundaries for cities – increases house prices and limits new housing supply (Saiz, 2010).

A final, more technological supply-side restriction is related to urban transport (Knoll et al., 2015): as most new housing demand has been focused on cities over the recent years, new urban land needs to be made accessible through means of transportation. But after the railway and car revolutions, cities have been waiting for the new technological breakthrough to extend even beyond the radius drawn by existing transport technology. With rail mileage per area on decline since the post-war era in most countries and car density plateauing in recent years, the vertical growth restriction is accompanied by a horizontal one.

A second set of supply-side explanations is about privatization of the post-war public housing policies which has not only led to a decline in social housing stock across OECD countries. But social housing association were also a disproportionately important construction circuit for new housing units, both in the private and the social stock (Anderson & Kurzer, 2018). They had established collaborations with local authorities for the provision of land for construction and the necessary local infrastructure, with state investment banks for short-term construction loans and with state agencies for the provision of subsidized mortgages. Their know-how also made them crucial government instruments for manipulating the new housing supply. Figure 5 traces the development of private (versus state-subsidized or non-profit) housing units in new construction and shows how most states had retreated by the 2000s to a highly privatized construction regime. They often left behind an uncompetitive private construction sector without the capacity or corporate organization to answer large demand shocks.

Figure 5: Share of private housing construction

Source: Own collection, https://sites.google.com/view/sebastiankohl/data
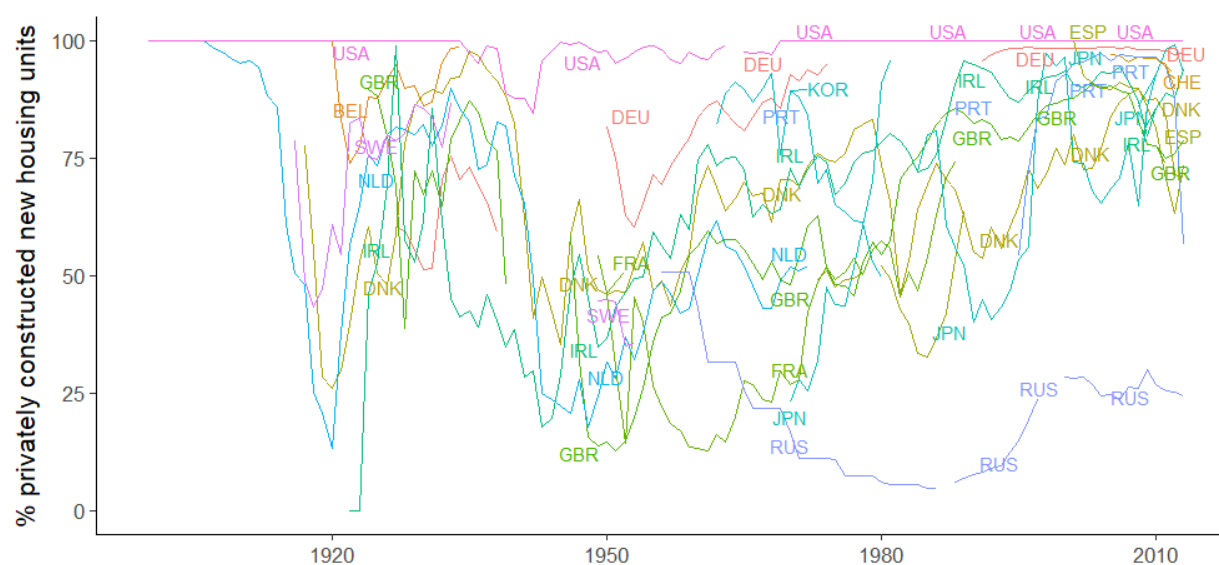
With the demise of this housing circuit, states thus lost an important supply-side policy instrument which they overcompensated through even more active demand-side policies, incentivizing more mortgage debt

or driving up prices through housing allowances. In an analysis of the housing content in 1805 party manifestos in 19 countries since 1945 (Kohl, 2018), I could trace how an extension of homeownership through private mortgage credit became the default policy stance of large parties, both on the right and the left (with the exception of German-speaking countries). Pushed not even necessarily by party ideology, but by party competition and the median homeowner-voter, they proffered ever more generous mortgage terms to becoming homeowners, partly because this was the most convenient instrument left for national politicians.

A *final* explanation is on the demand side: those taking out new mortgages are not necessarily those contributing to new constructions. Many new mortgages can be taken out without residential capital being formed: mortgages for other than residential purposes (ATM), mortgages for buying existing houses (primary or secondary ones), for pure repairs and maintenance (without capital formation), for speculative purposes, for refinancing existing mortgages, etc. (Haffner, Ong, & Wood, 2015). Mortgage equity withdrawal (MEW) for consumption purposes is even openly admitted to be a desired macroeconomic effect of house price rises (Smith, 2005). Particularly with an ageing population, more mortgages are not necessarily used for new construction, as housing supply is perhaps less of a problem than adequate levels of pensions.

Conclusions

This paper makes the observation that since the 1970s and in many advanced economies, there has been a decoupling of the financial side of housing – mortgages and prices – from the real economic activity – new houses and residential capital formation. Beyond a certain threshold of 20 to 50 percent mortgage-indebtedness per GDP, additional mortgage loads do not increase the housing supply any further but rather inflate house prices and have construction-depressing effects. While housing supply is positively affected by rising mortgage availability in the historical long-run, the 1970s marked a turning point both in steepness of the initial positive effect and in strength of the depressive effect of too much mortgage debt. This result holds when controlling for the demographic and economic background that also predicts housing supply. I suggest that institutional and political restrictions on the local supply-side of urban land and construction, but also a bias of mortgage lending to mortgagors who don't build up more residential capital make mortgages explode without leading to proportionally more construction.

The great decoupling is not a trivial matter, as urban economists have shown that the more inelastic housing supply is (with regard to prices), the larger and deeper the house-price bubbles become (Glaeser & Nathanson, 2014). On the urban level, this implies the rise of urban inequalities, either in terms of segregation into high-price and low-price neighborhoods, or the complete exodus of lower-income groups from the emerging superstar-cities (Gyourko, Mayer, & Sinai, 2013). Macroeconomists in turn have shown that business cycles downturns are also longer and deeper if they were fueled by exploded mortgage- and housing bubbles (Jordà, Schularick, & Taylor, 2015).

Another consequence beyond housing concerns the potential misallocation of capital that economists have pointed to (Martín, Moral-Benito, & Schmitz, 2018), when mortgage credits crowd out business loans in banks' lending behavior (Chakraborty, Goldstein, & MacKinlay, 2018) or crowd-out state finance. The construction sector, although good for employment and local-stimulus effects, suffers from

lower productivity when compared to manufacturing and services. It is not a coincidence that governments planning economic leaps in post-war Europe or the Soviet Union always gave priorities to more basic industries to stimulate the economy (Finkel, 1997). But the crowding-out effect is potentially more worrying if the use of mortgage credit is not even channeled into new construction but rather used to inflate an asset-bubble. For this, housing seems to be particularly well made because it can be used as leveraging collateral and because it faces relatively inelastic demand: in ownership-dominated markets, households need to buy to live somewhere, no matter whether they dream the homeownership dream or not.

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