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New research on housing affordability

1. Introduction

Recent years have witnessed widespread popular concern and policy attention to problems of housing affordability. That concern is buttressed by evidence of prevalent and elevated rent burdens among U.S. households. Indeed, by 2015, a full one-half of renter households were "rent burdened" with monthly payments in excess of 30 percent of household income. Substantially higher incidence of rent burdens was evidenced among low income and undocumented households and households with children, particularly in the wake of the Great Recession.

As discussed below, higher rent burdens have adverse consequences for households and for local economies. In response to affordability concerns, governments have enacted a number of measures, including tax and other incentives to elicit low income housing supply, demand-side housing vouchers and subsidies to targeted populations, and actions to mitigate local regulatory barriers to development. Efforts to enhance affordability also have focused on mortgage underwriting and related innovations in mortgage design.

This *Special Issue* of *Regional Science and Urban Economics* is comprised of new research on housing affordability. The included papers derive from a series of academic and policy conferences convened during 2015–2017 by a consortium including the American Enterprise Institute, Bank of Israel, the Board of Governors of the Federal Reserve System, Tel Aviv University, and UCLA. Those conferences sought to shine a light on the affordability challenge and to bring forward new salient economics, finance, and policy research.

The volume opens with an introductory essay by Gabriel and Painter (2019) titled "Why Affordability Matters". The authors provide evidence of sizable and rising rent burdens for large segments of urban and rural households in the United States. The authors cite studies showing that elevated rent burdens are associated with a myriad of adverse household outcomes, including residential crowding, long commutes, lower levels of family expenditure on health care and other vital family needs, and problems of child well-being and development. They also point to metropolitan level concerns, including out-migration of households and firms to lower-cost and peripheral areas, increased levels of urban congestion, and related constraints on local job growth and economic viability.

This introductory essay is followed by four overview papers on key topics in housing affordability: Raven Molloy's review of the effects of housing supply regulation on affordability; Michael Eriksen and Bree Lang's assessment of the Low Income Housing Tax Credit program; Ingrid Gould Ellen's essay on housing vouchers; and Mark Garmaise's analysis of alternative mortgage products as a tool to promote affordability. Our hope is that these four overview papers, combined with the Gabriel and Painter introductory essay, will serve as a concise and readable reference on housing affordability for both the academic and policy communities.

The volume also includes a number of research papers that provide new results on specific topics related to housing affordability. Among these papers, Ben-Shahar et al. (2019) develop new insights into affordability measurement and discuss the challenges of and policy responses to constraints on affordability in superstar cities. The authors use data for Israel to analyze affordability distance to a superstar city, which they define as the increment to household income required to consume a quality- and consumption-adjusted housing unit in the proximate superstar city. They address the bias in standard affordability measures that fail to account for differences in housing consumption across cities. The analysis shows that affordability distance to Tel Aviv (Israel's singular superstar city) rose by roughly 60 percent over the 2000–2015 period, particularly among unmarried, non-college educated, and immigrant households. The upward movement in affordability distance was associated with increased out-migration from the city. Analysis of panel data suggests that policy interventions including investment in regional transportation infrastructure and new local housing supply were effective in mediating affordability distance.

The other research papers in the *Special Issue* fall into three broad areas that are central to discussions of affordability: the role of housing supply, the effects of rental subsidies, and innovations in mortgage finance to enhance affordability. The rest of this essay summarizes key results from the research papers – and the associated overview papers – for each of these topics.

2. Housing supply

Issues of supply are central to discussions of housing affordability, as greater supply should enhance housing access for affordability-constrained households. Four papers in this *Special Issue* consider housing supply-related issues.

Molloy's (2019) overview paper on housing supply regulation concludes that regulations designed to address housing market failures do not come without costs. The literature shows that regulation typically raises house prices and (to some extent) rents and further affects the distribution of house values and rents across and within metropolitan areas. Molloy raises concern regarding the geographic distribution of regulation and related household sorting within metropolitan areas. She notes that future research should particularly address the effect of regulations on housing quality, which potentially affects the distribution of prices and rents and hence affordability. In that vein, future research should extend our understanding of the overall welfare gain (net of the higher cost of housing) of housing supply regulation.

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Eriksen and Lang (2019) review the Low Income Housing Tax Credit (LIHTC) program, the primary program in the United States to encourage the construction of low income housing. As they describe, the tax credit is granted to developers who construct or rehabilitate long-term rental housing with ceilings on tenant incomes and rents. As of 2014, the LIHTC program—originally enacted in 1986—had subsidized the development of more than 2.78 million rental housing units. The cost of the program comes from lost tax revenue: In 2017, for example, lost tax revenue was estimated at $8.4 billion. The authors discuss the literature on the cost effectiveness of the LIHTC vis-à-vis alternative housing subsidies. Given the substantial foregone tax revenue from the program, the authors conclude by proposing potential reforms to increase the number of subsidized units without increasing the aggregate tax costs by incentivizing developers to (a) minimize per-unit development cost; and (b) use the tax subsidy more effectively when transferring the tax benefit to investors with greater tax liabilities.

Relatedly, Luque (2019) sets up a theoretical framework to explore the impact of Tax Increment Financing (TIF) and the LIHTC on the development of affordable housing in a competitive equilibrium model. TIF programs encourage the supply of affordable housing by allowing developers of such housing to pay back loans using the property taxes generated by the units they developed. The model in his paper shows that TIF may effectively address developers' need for equity so as to result in improved affordability in locations that implement a TIF program. Among other key results of his model, he shows that implementing a TIF program in one jurisdiction may channel more equity into affordable housing development projects in another jurisdiction; TIF may be effective in offsetting the negative impacts of constraining factors such as zoning and NIMBYism on the supply of affordable housing; and TIF may induce corporations to rebalance their portfolios of LIHTC equity away from jurisdictions that adopt TIF.

Anenberg and Kung (2019) use a neighborhood choice model to analyze the relationship between housing supply and rents. Their results indicate that increased supply alone is not likely to significantly decrease the rent burden, owing to the low estimated elasticity of rent with respect to housing supply. According to their analysis, a more effective avenue to reduce rents in high-priced locations (and thereby increase affordability) is to improve housing amenities in less desirable locations, an example of which would be greater access to high-quality public transportation. Increasing amenities in these neighborhoods would reduce housing costs in high-cost areas by creating closer substitutes for those areas.

3. Rent subsidy programs

A central tool for promoting housing affordability among disadvantaged populations is to provide direct and indirect demand-side subsidies under the umbrella of various housing programs. One of the major programs—assisting roughly 2.2 million households in the United States—is the Housing Voucher Program. Ellen (2019) provides an overview of this program and related literature. As she describes, the voucher program assists recipients in paying rent on the private market, with the federal government covering any rent cost above 30 percent of the household's income, up to a pre-defined maximum based on local standards. A number of important conclusions arise from her study: There is a strong body of evidence supporting the argument that vouchers reduce rent burdens and improve affordability; vouchers appear to reduce homelessness; vouchers have only limited success in providing better education and opportunities for economic advancement for low income households; there is mixed evidence on the effect of vouchers on non-housing outcomes of recipients; many voucher recipients never successfully exercise their voucher option mostly due to limited supply of acceptable housing units; and, finally, there is a long waiting list for receiving a voucher such that only one in four eligible households receives the subsidy. As far as enhancing the effectiveness of the voucher program, Ellen proposes that the authorities specifically focus on increasing the share of vouchers that are successfully exercised, increasing the number of voucher holders who move to better neighborhoods, improving the selection system, and expanding the program's reach to the populations in need.

The Housing Choice Voucher program creates a kink in an eligible household's budget constraint at the pre-determined local maximum rent. This kink would be expected to lead to a bunching of market rents around this level. McMillen and Singh (2019) use data on apartment rents in Los Angeles for 2007–2015 to test for this bunching. Confirming the prediction from theory, they find evidence of bunching at the expected rent level. Their results show that vouchers change the distribution of rents from what would be observed without the program.

Two other papers present evidence related to housing subsidy programs outside the United States. Braakmann and McDonald (2019) study the effect of a reform in the Housing Benefit program in the United Kingdom, which provides rent subsidies for low income households. The authors explore the effect of the 2011 reform in the program that reduced the subsidy amount for the vast majority of recipients. They find that the subsidy reduction had a negative and lasting effect (more than two years after the reform) on house prices, particularly for the property types typically rented by benefit recipients. The authors further show that the subsidy cut was associated with an increased likelihood of subsidy recipients moving to another home. Overall, the results suggests a trade-off for policymakers: while the subsidy cut may have alleviated affordability problems for home buyers by reducing prices, some subsidy recipients likely were displaced from rental properties they could no longer afford.

Sayag and Zussman (2019) similarly use a natural experiment framework to explore the effects of a rent subsidy program that was directed toward the student population in Jerusalem, Israel. The authors find that the program significantly increased the number of students living in the specific neighborhoods targeted by the subsidy. Further, results indicate that even though the program was associated with a modest increase in market rent, the majority of the subsidy (roughly 60–80 percent) ended up benefitting the students.

4. Mortgage finance

The *Special Issue* includes five papers that study the connection between mortgage finance, housing affordability, and sustainable homeownership. The overview paper by Garmaise (2019) discusses the broad class of alternative mortgage products, defined as mortgages that reduce payments in the early years of the loan, pushing the required catch-up payments into later years. These mortgages have the potential to increase affordability for borrowers who expect their income to rise in the future. The *Special Issue* also includes research papers on specific issues related to mortgage finance. Bäckman and Lutz (2019) document the Danish experience with interest-only mortgages, which are a common type of alternative mortgage product. Fout et al. (2019) analyze the credit risk of mortgages extended to low and moderate income homebuyers. Passmore and von Hafften (2019) describe a new mortgage product, the Fixed-COFI mortgage, which is designed to improve affordability and build equity faster than the traditional 30-year fixed-rate mortgage. And Oliner et al. (2019) discuss another innovative mortgage, the Wealth Building Home Loan, that has the same objectives and is already available from some lenders.

Garmaise's paper begins with the simple intuition that alternative mortgage products can improve housing affordability by expanding the set of available mortgages. He summarizes recent theoretical work that shows the backloading of payments in these contracts can be especially helpful to constrained borrowers when house prices are high and rising and income is expected to grow. In the United States, the use of alternative mortgage products surged during the housing boom in the early and mid-2000s, but these loans essentially disappeared during the financial crisis and have not returned. The alternative mortgages used during the boom were primarily interest-only (IO) loans and negative-amortization loans in which the monthly payment covered only part of the interest due. These loans experienced very high default rates, and

Garmaise concludes that they likely served as a vehicle for speculation during the boom. Importantly, the main users of these mortgages were not lower income borrowers but more affluent borrowers with relatively high credit scores. This borrower profile meshes with theoretical work that identifies younger, well-educated households who expect substantially higher income in the future as the prime users of mortgage products that backload payments. This leads Garmaise to conclude that "We lack compelling evidence that alternative mortgages can address broader issues of housing affordability for less fortunate Americans."

Bäckman and Lutz (2019) provide a case study of the experience with IO mortgages outside the United States. In 2003, Denmark legalized the use of these mortgages, with the aim of improving affordability for younger and lower income households. Policymakers expected demand for IO loans to be limited to the target groups and to have no effect on the broader housing market. As Bäckman and Lutz document, the actual outcome was quite different. The IO mortgages proved very popular with borrowers of all ages and incomes, especially in areas with high house prices. Indeed, by 2006, more than 60 percent of all homebuyers were using IO mortgages. Almost immediately after the policy change, the volume of home sales and house prices both accelerated. The higher house prices offset the gain in affordability from using IO mortgages, leaving the homeownership rate for the targeted groups (and the entire population) unchanged.

These results have important implications for policymakers. First, mortgage products that reduce initial monthly payments will have broad appeal because they ease household budget constraints. As a result, products to improve affordability for a targeted group cannot be made available to the general population, as the broad take-up will dilute the intended benefit. In addition, without a sufficient increase in housing supply, policies that boost demand will raise home prices – benefitting existing homeowners – and have limited effects on homeownership among targeted populations.

Fout et al. (2019) examine the credit risk of mortgage lending to low and moderate income households, using a rich dataset of home purchase loans acquired by Fannie Mae from 2002 to 2013. They find that low and moderate income households had substantially higher default rates than more affluent households, both during the 2000s housing boom and after the financial crisis. For all but the lowest income households, these differences in loan performance are well explained by differences in the risk factors considered by standard underwriting models (such as the borrower's credit score, downpayment, and monthly payments relative to income). In contrast, for the lowest income borrowers – those with incomes less than half of the median income for their metropolitan area – the default rate was about 25 percent greater than predicted by the standard underwriting factors, but this gap was stable over time. These results imply that lenders and policymakers can assess the risk of lending to low and moderate income households with the same accuracy as for higher income borrowers. Thus, model-driven risk assessments can provide a sound basis for designing loan programs for lower income borrowers.

At the same time, Fout et al. demonstrate that loan programs need to maintain prudent lending standards if they are to support sustainable homeownership. They show that the lax standards during the housing boom resulted in high default rates on loans for lower income borrowers guaranteed by Fannie Mae. Had today's more stringent standards been in place during the housing boom, Fout et al. estimate the default rate for lower income borrowers would have been only about one-fifth the level actually observed.

Policies that promote homeownership for lower income households are rooted in the idea that owning a home will help these households build wealth. However, two papers in the *Special Issue* argue that the standard 30-year fixed-rate mortgage (FRM) is poorly suited to meet this objective and describe new mortgage products that would do a better job. Both of these mortgage products enable borrowers to build wealth more rapidly than they would with a 30-year FRM and both require little or no down payment.

Passmore and von Hafften's (2019) alternative to the 30-year FRM is the Fixed-COFI mortgage. With this mortgage, borrowers make monthly payments calibrated to pay off the loan principal over 30 years given the FRM rate at the time of origination. From the borrower's perspective, the loan appears to be a typical 30-year FRM. However, the lender receives a different – and generally smaller – payment, which equals the cost of funds index (COFI) for banks plus a margin calculated to produce an attractive return on equity. The difference between the borrower's monthly payment and what the bank receives is either deducted from the loan principal as extra amortization or rebated back to the borrower. The extra amortization increases housing wealth, while the rebate could be used entirely or in part to boost wealth through the purchase of financial assets.

In the Fixed-COFI mortgage, borrowers get the certainty of a fixed monthly payment and also reclaim the time-varying wedge between the FRM rate and the adjustable COFI-indexed rate. Lenders are willing to give up the wedge because the loan nearly eliminates prepayment risk, as borrowers have little incentive to refinance given that a decline in the COFI-indexed rate accrues to them as extra equity accumulation or a rebate. In effect, the loan works by greatly reducing lender compensation for prepayment risk that is built into the 30-year FRM rate.

The Wealth Building Home Loan (WBHL) described by Oliner et al. (2019) is a different approach to improving on the 30-year FRM. The WBHL is not a specific product but rather a class of shorter-maturity mortgages that provide more rapid equity accumulation than a 30-year loan. The WBHL can be either an FRM or an adjustable-rate mortgage (ARM) designed to have only a modest increase in monthly payments when the rate resets. WBHLs are easy-to-understand loans that combine standard mortgage features in a novel way. The key insight is that shorter-maturity mortgages make it possible to eliminate down payments and enhance buying power through an ARM rate structure while at the same time keeping default risk low via rapid equity accumulation. About 35 community banks and credit unions currently offer WBHLs, and the most common loan type is a 20-year ARM. This loan type is virtually unheard of outside the WBHL program, indicating that the WBHL fills out the existing product space.

One of the paper's main results is that 15- and 20-year ARMs provide substantially greater protection against payment shock than do 30-year ARMs. This occurs for the simple reason that more of the principal has been paid down by the time of a rate reset. Accordingly, the ARM structure is much better suited to 15- and 20-year loans than to 30-year loans and can provide a safe way to hold down initial monthly payments. Indeed, 20-year WBHLs can be structured to have initial payments for many borrowers that are only slightly higher than for a 30-year FRM guaranteed by the Federal Housing Administration, the largest government program for low-downpayment loans. This comparison shows that borrowers who opt for shorter-maturity mortgages need not sacrifice considerable buying power.

In sum, the papers included in this *Special Issue* provide new analysis of policy and programmatic interventions designed to address widespread affordability concerns. We hope these papers are of broad interest among those seeking to better understand and address affordability challenges. Further, we hope those papers spur additional research and policy insight regarding this critical and abiding societal concern.

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