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THINKING ABOUT THE GROWING HOUSING AFFORDABILITY PROBLEM

A PRIMER FOR SOUND POLICY

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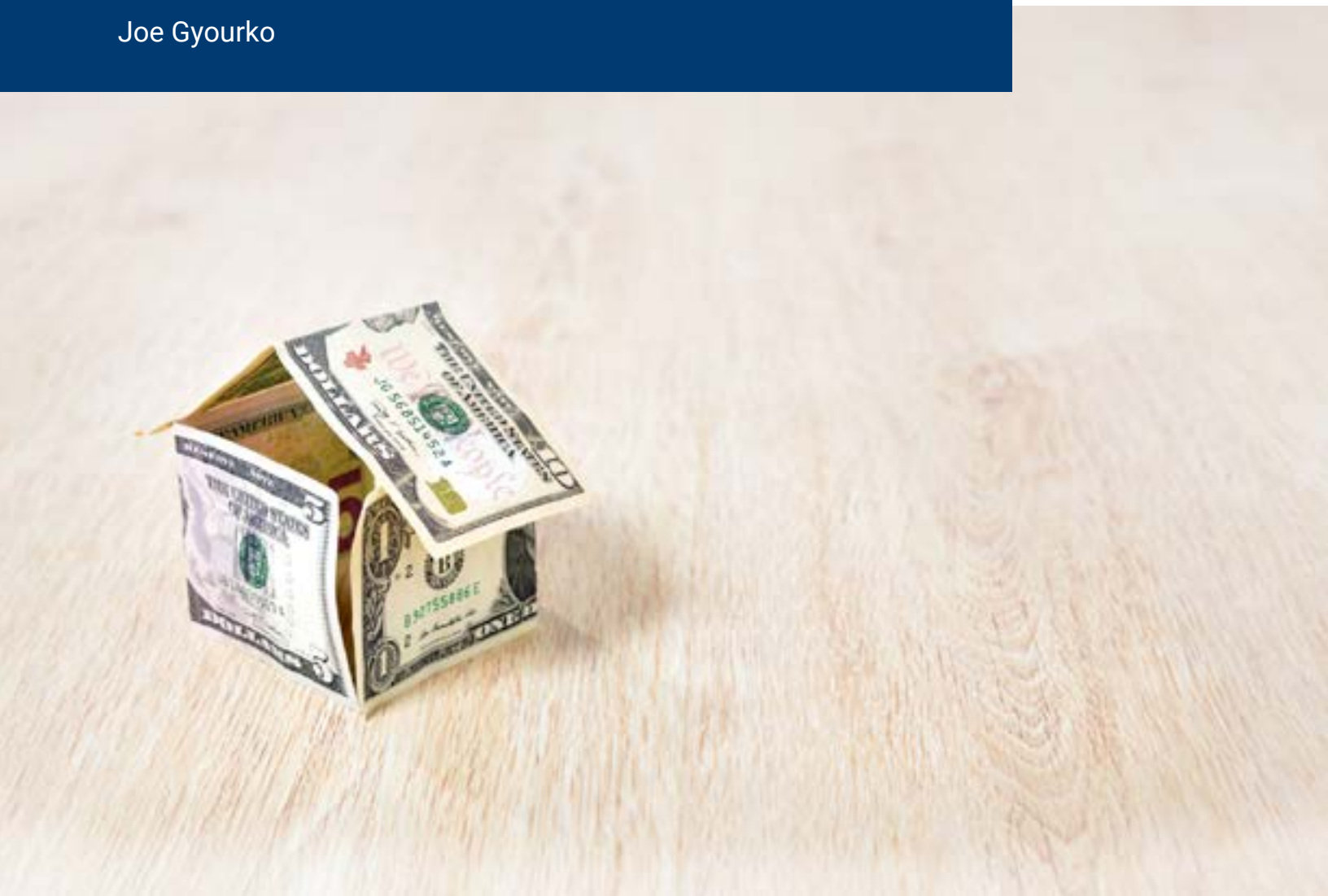

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I. Introduction

This report focuses on an important component of the affordability issue associated with the ease (or lack thereof) with which a typical middle class household can buy a home.[1,2] The next section briefly documents that house prices have reached historically high levels in many markets and that price growth has outpaced income growth almost everywhere over time. If the pattern continues, we will come to the first time in U.S. history when ownership was generally unaffordable to the middle class in the majority of metropolitan areas in which there were large numbers of good jobs. Essentially, homeownership is joining health care and higher education as important sectors in our society in which the middle class can no longer take affordable access for granted. Section II also shows that deficient supply of new housing—not some problem on the demand side of the market—is the driving force behind the country's deteriorating affordability conditions.

Two key principles are identified that should guide any policy intervention. The first is that policy should help increase the number of new housing units delivered to the market. If that does not happen, the policy is likely to be irrelevant and possibly counterproductive. A second key characteristic of good policy design is what might be thought of as the transparent costs principle. This means that good policy requires its costs, not just its benefits, be visible and priced. Without the ability to know what is being gained and at what cost, the policy almost certainly will not be implemented efficiently and could be counterproductive.

Section III uses these criteria to evaluate a host of actual and potential policy proposals using these criteria. We first take a deep dive into two of the most prominent recent proposals—for rent control in New York City and for development of a 50-year mortgage market nationally. Neither of these policies increase supply and their costs are not well recognized or acknowledged by their proponents. Demand-side policies alone, which include interest rate buydowns and other strategies to lower mortgage rates, as well as allowing the use of 401(k) funds for a downpayment, not just the 50-year mortgage proposal, generally are unhelpful and can be counterproductive by worsening affordability problems. The reason is that housing supply has become much more inelastic over time. Stated differently, in today's housing markets, new supply does not increase much in general, including when home prices increase a lot. Hence, trying to make housing more affordable by subsidizing demand in one way or another simply shifts out that demand along an almost fixed supply. That results in higher prices, which exacerbates the affordability problem.

That leaves supply-side policies. Four types are examined in Section III. The first are direct interventions intended to generate more new housing units. These policies include selling federal land with a stipulation that housing be built on it, upzoning that allows densification of an area, and expanding the types of housing units that are allowed (e.g., accessory dwelling units (ADUs) and modular housing (or manufactured homes)). Each of these will or could increase the amount of new housing units supplied, which means they possess at least one of the two core traits that distinguish a good policy. However, recent research suggests that we should not expect a large or immediate increase in housing supply from upzoning. This is an important implication of this part of the analysis—namely, there does not appear to be a supply-side intervention that will quickly lead to a large enough surge in supply to materially alleviate affordability concerns.

This suggests we also need to look elsewhere on the policy front if we are to make more progress. One set of alternatives involves using the fiscal resources of the federal and state governments to encourage localities to allow more building. One example is a recently passed bill by the Senate Banking Committee (called the Road to Housing Act of 2025) that rewards communities which allow more housing development by allocating them a bigger amount of grant funds. Another way to use the powers of higher levels of government would be to set national or state standards regarding the use of certain types of structures such as modular housing. This could have a high longer-term

payoff because under our current system of dispersed local control of building permitting, different types of modular housing often are mandated (or, more likely, banned) in different jurisdictions. Having a standard rule that allows for a given quality product across the country could lead firms to invest much more in product development because those costs could be defrayed over a much larger scale of business for a bigger set of markets.

A second set of alternative supply-side policies involves changes to the nature of the local regulatory structure currently in place. As discussed below, our system of strong local control of the permitting process is the genesis of the growing undersupply of new housing units. Hence, changes to this system are going to be extremely important if we are to meaningfully improve housing affordability conditions over time. One such change would be to increase the role of state government in the permit review and approval process. In the United States, the permitting process is a state function, with most states delegating that responsibility to local entities. The rationale is that nearby neighbors know most about conditions in the area and, thus, are best suited to evaluate development proposals. There is truth to that, but our form of local control also violates the transparent costs principle of good policy design. The local regulator typically makes decisions based on a building permit's costs and benefits to current residents. It is not required to care about the costs to outsiders who might have gained much from accessing new housing in a community had the proposal been approved. Thus, this system is biased towards rejecting building permit requests, which suggests we need to broaden or supplement regulatory control beyond local groups or jurisdictions if approvals are to be increased.

Another substantive potential change to the nature of the extant local regulatory regime would allow for more types of housing to be built by right. Currently, zoning rules are so restrictive in many jurisdictions that much new development needs some type of variance or rezoning. The uncertainty and high cost of that review process complicates—and undoubtedly kills—many prospective housing developments. One way around this would be to move towards something like the Japanese model, which has 12 different zoning categories.[3] Use is restricted in each of these zones, but common practice is to allow a maximum use of different zones in a given geographic area. Thus, different types of residential products (e.g., single family detached units, townhomes, apartments, ADUs) would be allowed by right within a jurisdiction, but there could be restrictions on how much of any type would be permitted. Regulatory reform in this direction would obviate the need for what often are lengthy and expensive quasi-judicial review processes to obtain permits.

A final fundamental policy change discussed at the end of Section III involves restructuring of the property tax system. That analysis indicates that we should tax land much more than structure. Doing so would tax large lots, not large housing units, more, thereby putting a visible and higher price on low density, especially in the areas with the highest land values.[4] That said, changes to the tax system are highly consequential, so they should not be done without careful consideration and a lengthy phase-in period.

In sum, there are a number of important lessons and guidelines we should heed and follow if we are to alleviate growing affordability problems across the country. First, focus on policies that do or will increase the supply of new housing. Avoid demand-side subsidies that do not. Second, recognize that, while direct interventions to increase housing supply are useful, they are unlikely to be able to rapidly improve poor affordability conditions. Third, encourage federal and state governments to use their resources to encourage useful experimentation with good supply-side policies. Fourth, work towards implementing changes to the structure of our permitting regulation and taxation of housing. Our regulatory system is biased towards turning down requests to build, and local property taxation typically is not structured to encourage structures relative to land. Reform in both areas is critical to improving affordability conditions over the longer run. Both are political issues that will take time to solve, so the time to start the reform process is now.

II. Is there really a growing affordability problem? If so, how important is it?

The answers to the two questions are "Yes," and "Very." The evidence for the former is in the prices themselves and their increases relative to household income.

EVIDENCE OF GROWING AFFORDABILITY PROBLEMS

Sharply rising housing prices

Home prices have never been more expensive on average at the national level. Glaeser & Gyourko (2025) report that the real price of a given quality home presently is 15%-20% higher than it was at the peak of the boom leading up to the Global Financial Crisis. The national data are stark, but it masks important variation across housing markets as shown in Table 1, which lists real, constant quality housing price growth over the past half century in 24 large metropolitan areas.[5] From 1975-1999, six large coastal markets (San Francisco, Seattle, Boston, Los Angeles, New York City, and San Diego) appreciated much more than the rest of the country. Another four markets—Denver, Detroit, Chicago, and Salt Lake City—experienced significant but more modest annual growth. Everywhere else had price appreciation below 1% per annum compounded, with real house price growth being close to flat in most major Sunbelt region markets between 1975 and 1999.

These six large coastal markets continued to experience strong real price appreciation over the subsequent quarter century. They have long been the most expensive single family housing markets in the United States. Recent data from Zillow, which reports the average or typical home value as of January 31, 2026, was at least $700,000 in the Boston, New York City, and Seattle metro areas and ranged from $900,000-$1,100,000 in the Los Angeles, San Francisco, and San Diego metro areas.[6]

What is really different since the turn of the century is the sharp increases in price growth in other parts of the country. San Francisco is the most expensive owner-occupied housing market in the country, but it was only 19th out of our 24 markets in terms of price appreciation since 2000. That implies much of the rest of the country appreciated by more than San Francisco's 69.4% since 2000. Sunbelt region markets led the way. Miami was first with a 189.4% real, constant-quality price growth since 2000, with Tampa coming in third at 120.6%. Austin, Phoenix, Orlando, and Nashville each experienced about a doubling or more of real prices. New York City and Boston saw their prices escalate by a healthy 76.3% and 74.2%, respectively, but that still was less than in Dallas. In absolute terms, this sharp escalation in house prices has Zillow reporting typical home values in early 2026 ranging from $355,000-$475,000 across the Atlanta, Austin, Dallas, Miami, Nashville, Orlando, Phoenix, and Tampa-St. Petersburg metro areas. The only exceptions to the rule of high price growth this century are in the Rust Belt. Chicago saw prices increase by only 20.3% over this time period (0.7% per annum compounded). Prices in Cleveland grew even less at 11.8% (0.4% per annum compounded), and Detroit experienced essentially flat real prices over the past quarter-century period. In late October 2025, Zillow reported typical home values ranging from $244,289 in Cleveland to $342,600 in the Chicago metro area.[7]

House price growth outpaced income growth

High house prices need not constitute an affordability problem if income is rising commensurately. Table 2's data on price-to-income (P/I) ratios over time for a subset of 13 metropolitan areas capture the relevant variation across markets in the U.S. They are based on median house price (in the numerator) and median household income (in the denominator) at the census tract level in each metropolitan area from the 1970 and 2000 decennial censuses and the 2024 American Community Survey (ACS). Ratios for the 25th, 50th, and 75th percentiles of all tracts in each market are reported. This central part of the distribution of price-

to-income ratios is taken to represent where the broad middle class would search for an owner-occupied home.

Whether these price-to-income ratios are unaffordable depends upon a variety of factors, including the mortgage amount the household could qualify for. Based on analysis reported in an online appendix, banks generally are not willing to lend to middle-class households buying homes costing four times (or more) their gross income. We use that cutoff as a conservative metric for when part of a housing market becomes unaffordable to a typical buyer, although many such buyers will have trouble qualifying for a mortgage when the price of the home is appreciably more than three times household income.

There are a number of interesting patterns in these data. First, in 1970, every housing market was affordable, with no market's median census tract's P/I ratio being greater than Los Angeles's 2.21. This tells us that today's widespread unaffordable housing conditions for the middle class are a relatively recent phenomenon that did not exist a half century ago anywhere in the United States.[8]

Second, the next three decades then saw a sharp deterioration in housing affordability conditions for the middle class in the large markets on the west and east coasts of the country. Price-to-income ratios had risen everywhere by 2000, but they increased the most in the Los Angeles, San Diego and San Francisco markets, with the median tract in those markets being well above 4. They were closely followed by the Boston, New York, and Seattle markets, where median price-to-income ratios were 3.66 and above. In the six Sunbelt markets and Detroit, the median price-to-income ratio never reached 3 by the year 2000. These markets still were affordable for a typical household.

That turned out not to be the end of the story because the third pattern is that affordability conditions deteriorated enough in many Sunbelt markets so that by 2024 the median census tract's P/I ratio was at or above 4. For example, Orlando and Phoenix have median P/I ratios of 4.30 and 4.62, respectively; Las Vegas and Miami have even higher median ratios above 5. Atlanta is close to our presumed affordability margin with a median tract P/I=3.76. Dallas is a modestly more affordable market by this metric with a median P/I=3.54.

A key question going forward is whether the Sunbelt markets of 2024 follow the path taken by the coastal markets after they first became expensive to the middle class at the turn of the last century. If demand to live in the Sunbelt stays high and the rate of new supply in those markets is not increased, prices will continue to escalate so that homeownership becomes inaccessible to the middle class in that part of the country, too.

The fourth lesson to be gleaned from Table 2 is that middle-class affordability conditions have been maintained over the past half century only in midwestern and Rustbelt markets that have suffered from globalization and deindustrialization. Detroit is our proxy for this group of markets, and its median P/I ratio was only 2.91 in 2024. The problem, of course, is that job growth is much lower in places such as Detroit. Without substantial increases in good jobs, the midwestern markets of Detroit, MI, and Dayton, OH, (the place where I grew up) are not viable substitutes for the increasingly expensive Phoenix and Miami metropolitan areas in the same way those two Sunbelt markets have been for New York City and San Francisco since 2000.

WHAT CAUSED THE EXPANDING AFFORDABILITY PROBLEM?

The primary cause of the growing affordability problem across so much of the United States is deficient new supply of housing units.[9] To show this, we look at the relationship between single-family permitting intensity and real house price growth in seven major metropolitan areas: Atlanta, Boston, Dallas, Detroit, Los Angeles, Miami, and Phoenix. These housing markets span the types of patterns that are observed across the country.

Figures 1-7 plot the number of single family housing permits issued in year t+1 against real, constant-quality price growth in year t from the early 1980s through 2024.[10] Because developers are free to supply new

units in a well-functioning market whenever they believe they can earn at least a normal profit, we expect this relationship to be strongly positively sloped whenever supply is plentiful versus flat (or possibly negative) when it is not. That is, if price growth is especially high this year, expected profits are more likely to be high, too, so developers should obtain more permits to deliver more homes next year.

Figure 1 shows that there is only a modest positive relationship between price appreciation and permitting intensity in the 1980s for the Atlanta metro. There is a stronger positive relationship in the 1990s and 2000s, consistent with a much more elastic response of permits to high real price appreciation. In the bust after the GFC, which started in 2006, permitting falls to very low levels not much above zero but does not rise as sharply after strong price growth returns later in the 2010s. The highest price growth years at the end of that decade saw single-family unit permitting reach only 20,000-30,000 units per year, which is about one-half the amount from the peak permitting years in the 1990s and first decade of the 2000s. They have remained in that range since 2020, as indicated by the flat recent relationship between permitting intensity and price appreciation. Thus, permitting activity no longer increases substantially when real house price growth jumps in this market. Glaeser and Gyourko (2018) have argued this is a signal that local regulation is constraining supply. In addition, current permitting levels are well below prior decade peaks even though real prices continue to rise to new long-run highs. Given these changes, it is not surprising the Atlanta metro's single-family market no longer is as affordable as it was at the turn of the century.

Figure 2 depicts analogous plots for the Miami, FL, core based statistical area (CBSA). There is a strong positive relationship between this year's real house price growth and next year's single-family permitting level in the 1980s and 1990s. In these decades, strong single-family permitting is around 20,000-25,000 units per year. However, there is virtually no relationship between price growth and permits from 2010-on, and annual single-family permit levels have not reached 10,000 since 2006. It is a much diminished supply of new homes in the face of strong demand that has made Miami one of the Sunbelt region's least affordable markets.

In the Dallas market (Figure 3), we see a fairly strong positive correlation between permitting levels and real price growth until very recently (2020-2024). Moreover, single-family permit levels since 2020 have been at or near their historic peak from the pre-GFC building boom (i.e., 50,000 units per year, but given past growth of the area, that still reflects a smaller share of the housing stock). Dallas also is one of the few Sunbelt markets where the price change-quantity change relationship in the 2010s looks similar to that from the 1990s. These plots suggest that homebuilders in this market are not being prevented from building whenever they see a reasonable profit opportunity, which is why Dallas remains more affordable than other Sunbelt markets.

Figure 4 reports the data for a fourth Sunbelt market: Phoenix. The slopes are very steeply positive in the 1990s and 2000s, before flattening out in the 2010s and disappearing in more recent years. Around 30,000 single-family permits have been issued annually since 2020, which is about half its historic peak reached in 2003. Phoenix looks much more like Atlanta and Miami than Dallas in both respects, which helps account for why they are all less affordable than Dallas today.

Figures 5 and 6 report results for the Boston and Los Angeles CBSAs, our two examples of supply constrained coastal markets. Note that Boston had its last building boom in the 1980s, with single-family permitting peaking at around 15,000 units annually in 1984, 1985, and 1986. When price growth was weak at the end of the decade, barely 5,000 permits were issued. This strong relationship between permitting activity and lagged real price growth disappears in the 1990s before reappearing in fainter form in the 2000s leading up to the GFC and then evaporating in the 2010s and 2020s. Not only does relatively high real price growth no longer engender appreciably higher permitting activity, quite low levels of single-family permits (no more than 5,000 annually) have been issued for the past two decades in the Boston CBSA.[11]

The results for the Los Angeles market illustrate that the building slowdown started a decade earlier on the West Coast (Figure 6). Permitting activity actually is slightly negatively correlated with lagged price growth in Los Angeles in the 1980s. There clearly is a stark shift down in permitting intensity beginning in the late 1980s that continues to the present day. The peak permitting years in the 1990s and 2000s are about half the peak seen in the 1980s. The downturn in building then intensified in the 2010s and 2020s, with peak permitting amounts never being more than two-thirds of their levels from the 2000s (and roughly one-third of the 1980s peak). The ratcheting down of single-family permits over a four-decade period largely explains the extraordinary long-term price growth in this market. New housing supply has been shrinking, while latent demand to live and work in this market remains strong.[12]

Figure 7 reports on our final market, Detroit. In this proxy for Rustbelt housing markets, there is at least a modest positive slope to the relationship between today's real price growth and tomorrow's permitting activity. Furthermore, permitting levels generally increased in the 1990s compared to the 1980s. However, there is quite low annual single-family unit permitting intensity since 2006—it is rarely above 5,000 permits in any year since then—and there is no significant relationship between price growth and permitting in the Detroit metro since 2010. We also know that this market looks affordable to a typical household across all these decades. The fact that the sharp diminution in new supply over the last two decades has not resulted in much real price growth tells us that the key driver is falling demand. The reduction in supply is a response to declining demand to live and work in Detroit.

The conclusion that deficient supply is the primary driver of unaffordable housing across the country is grounded in simple economic intuition about how markets work that is consistent with a variety of data. This does not mean that nothing else matters, of course. Many people believe the COVID-19 pandemic mattered a lot, and it did in the sense that it made undersupply even more severe—for a period of time. In 2018 and 2019, the two years leading up to the COVID-19 crisis, starts exceeded completions by a modest amount—nearly 57,000 units in 2018 and nearly 32,000 units in 2019. A combination of COVID-19-related regulation preventing building for a short period of time and ensuing supply chain snafus led to a substantial decline in housing unit completions over the next three years. The excess of starts over completions jumped to just over 110,000 in 2020, skyrocketed to nearly 263,000 in 2021, and was still high at 163,000 in 2022. This inability to complete large numbers of homes certainly created a larger supply shortfall. However, the situation reversed over the next three years. In 2023, completions outnumbered starts by nearly 32,000 units; in 2024, completions were over 250,000 more than starts, and they were still about 143,000 more in 2025.[13] In sum, the impact of the COVID-19 crisis on housing supply was meaningful. It amplified a growing supply shortfall from 2020-2022, but that large temporary gap between starts and completions has been reversed for the most part. Moreover, COVID-19 does not fit the timing of the growth of the affordability crisis in our coastal and or Sunbelt markets. Both trends were visible well before the virus appeared.

The GFC was an even larger economic shock than COVID and occurred about 15 years earlier. It wiped out many firms in the construction sector. Glaeser and Gyourko (2025) document the sharp drop in the number of establishments and employees in homebuilding across markets. They also show that the construction sector has fully reconstituted itself in Dallas and the other major Texas metro areas. That tells us that the GFC need not permanently impair the homebuilding sector. That it has not in markets such as Dallas further implies that the impact of the GFC on homebuilders is not the primary cause of diminished housing supply in Atlanta, Miami, and Phoenix. Rather, that is the result of choices made by individual communities in those metros to restrict new supply. If enough localities are not going to allow as much building as before, a smaller construction sector is the obvious consequence.

Finally, some argue that failures in our financial system have helped precipitate our affordability crisis. Capital markets can be very powerful, but interest rates and banking services do not differ enough across housing markets in America to explain their different and changing affordability conditions in general and especially over time. [14]

III. Guidelines for evaluation of policies proposed to improve affordability

This section takes a high-level perspective on evaluating policies targeted towards improving housing affordability. The goal is to identify the key features that are likely to make a policy more effective, not to provide a detailed cost-benefit analysis.

TWO PROMINENT RECENT POLICY PROPOSALS: RENT CONTROL AND 50-YEAR MORTGAGES

Rent control

Housing affordability was a key component of the successful campaign of the new mayor of New York City, Zohran Mamdani. Mamdani proposed to freeze rents on so-called stabilized apartments, which already have restrictions on the landlord's ability to raise rents at will. This is not the same as controlling rent on so-called "market rent" units, for which there is no restriction on the landlord's ability to change the rent. However, these distinctions are not essential for our purposes. With or without those variations, rent control is a poorly conceived policy for improving affordability conditions. It obviously does nothing to generate additional new housing now. What it does accomplish is improving affordability conditions for the current residents of the specifically controlled units. However, this comes with a number of costs. Economics has identified four sources of inefficiency arising from rent control: undersupply of units over time, underinvestment in unit quality by landlords over time, wasted effort by renters in pursuing below market rent apartments, and allocative waste from not always assigning the controlled units to those who value them the most.[15]

For our purposes, the most important of these costs is that the policy reduces the stock of rental housing in the long run. The intuition behind this is straightforward.[16] If rent control does not allow landlords to earn at least a normal rate of return commensurate with the risk they bear, they will try take their capital out of the rent-controlled market. This cannot be done immediately because their capital is tied up in apartment buildings that cannot be moved to another jurisdiction. Moreover, there typically are laws against landlords shuttering their buildings in response to the imposition of rent control. However, their withdrawal of capital can be achieved over time. Some of that results from low rates of reinvestment which accelerate the deterioration of the building. Sometimes, landlords can also find other ways to avoid the controls over time.[17] New investment clearly will fall because that capital can be used to build anywhere, not just in the controlled jurisdiction.[18] Consequently, affordability conditions are made worse, not better, over time. The policy is counterproductive, with a short-term gain for current renters being paid from the future by higher long-term housing costs associated with a diminished new housing supply as builders avoid the price-controlled sector.[19] Finally, there is no evidence of rent control ever permanently solving a housing market's affordability problem.

50-year mortgages

In early November 2025, the director of the Federal Housing Finance Agency, William Pulte, noted the Trump administration was working on developing a 50-year mortgage.[20] This is an example of a demand-side intervention intended to lower the cost of accessing homeownership by reducing the home buyer's fully amortizing monthly mortgage payment. That it will do. The monthly payment on a 50-year, fully amortizing loan will be less than on a 30-year, fully amortizing loan, all else constant. For example, if you took out a $300,000 mortgage at 6% interest, the fully amortizing monthly payment on the 50-year mortgage would be about $219 less than on a 30-year loan.[21] That reflects an annual saving in debt service costs of $2,628 annually, or 12% lower mortgage debt service costs. That will allow more people to qualify for a mortgage to buy a given home.

However, the policy does nothing to generate additional new housing. Allowing more people to qualify for a mortgage but not increasing the number of housing units will result in more people with more money pushing up the price of an unchanged amount of housing. The worst case for the policy is if supply is perfectly inelastic—that is, supply literally is fixed—so that higher prices will not lead to more units being delivered to the market. In this case, all the savings in terms of lower debt service get capitalized into higher house prices, defeating the goal of improving affordability. Extreme inelasticity of supply is characteristic of our large coastal markets, so this policy will worsen affordability conditions most in those already very expensive places. This policy will not work to improve affordability conditions significantly in many other markets either, as the best recent evidence on housing supply elasticities across the country indicates that inelasticity is widespread.[22]

By increasing house prices, this program will largely function as a wealth transfer to existing homeowners. That defect is then compounded by additional risks and costs arising from the structure of such a long-term mortgage. For example, if one were to fully pay down the loan over 50 years, total interest payments would be nearly twice as large compared to paying down a fully amortizing 30-year loan.[23]

This much greater interest component of the mortgage payments also is associated with a very slow equity buildup in the home. Over the first 10 years of the loan, the amount of principal paid down on a 6%, $300,000, 30-year loan is $48,943 or 16.3% of the original mortgage balance. The analogous figure for the same loan except that the term length is 50 years is $12,982, or 4.3% of the original mortgage balance. The median homeowner moves around once every decade,[24] so there will be very little equity buildup from principal amortization on the 50-year mortgage. If one kept moving every decade, borrowers would never really build much equity in their home(s) unless home prices themselves always appreciate sharply. If household wealth creation also is a goal, 50-year mortgages are not the way to go for a mobile population.[25]

Finally, it is not at all clear that mortgage interest rates would be the same across otherwise equivalent 30- and 50-year mortgages. Longer-term mortgages typically carry higher interest rates, all else constant. For example, there is a 55 basis point difference in APRs on 30-year versus 15-year fixed rate mortgages as I write in December 2025. If the rate on a 50-year mortgage were to be 55 basis points higher, the debt savings calculated just above would fall by over half.

OTHER POTENTIAL POLICIES: DISTINGUISHING THE GOOD FROM THE BAD

Other proposed or potential policies can be divided into demand-side versus supply-side interventions.

Other demand-side policies intended to improve housing affordability conditions

Another prominent demand-side policy intended to improve affordability involves mortgage interest rate buydowns. These involve some entity, often a homebuilder, providing capital so that a lender is willing to issue a mortgage at a below market interest rate—say at 4% rather than 6%. We calculated above that the fully-amortizing monthly payment on a 6%, $300,000 mortgage was $1,798.65. If that mortgage had a 4% interest rate, the analogous payment falls by about $366 to $1,432.25. As was the case with the 50-year mortgage proposal, lowering the monthly annuity payment via rate buydowns will allow more similarly situated households to qualify for a loan to buy a more expensive house. The problem, again as discussed just above, is that the policy will result in at least some bidding up of prices if there is not a net increase in the supply of homes. Rate buydowns do not suffer from many of the additional costs and risks associated with extending the mortgage term substantially, but this and other similar demand-side interventions are poor policies for addressing housing affordability.[26]

A close cousin of rate buydowns by homebuilders is President Trump's recently announced policy to have Fannie Mae and Freddie Mac buy $200 billion in

mortgage-backed securities (MBS).[27] The goal is for the added investment in MBS to raise the price of the securities, which then results in a lower yield on them because prices and yields move in opposite direction in the bond market. In that case, competitive lenders should be able to lower the mortgage rate at which they are willing to lend because they can still earn a normal profit given that their cost of capital has fallen. Presuming this purchase moves MBS prices,[28] the more general problem with this policy is the same as discussed for a typical rate buydown. Absent an increase in the supply of housing, it will function as a transfer to existing homeowners in highly inelastic housing markets such as those on our coasts because it will raise house prices as more people with more money bid on a (roughly) fixed stock of housing. In other markets, prices will be pushed up somewhat, but the full benefit of the subsidy will not be transferred to home sellers.

A (very) short note on the housing GSEs: Fannie Mae and Freddie Mac

Fannie Mae and Freddie Mac are critical to the functioning of the American mortgage market, which is almost unique globally in its use of very long duration, 30-year fixed rate loans. The two GSEs are huge and complex organizations, which we will not detail in this report. For our purposes, at least some of what they do can be considered a form of demand-side subsidy to homebuyers. The two GSEs effectively are large insurance operations that guarantee against homeowner default—for a fee. If they underprice their default guarantee, as looks to have been the case leading up to the GFC, that would constitute a subsidy to home purchasers. Such mispricing can be very costly economically as we discovered in the subsequent financial bust. Holding that aside and per the analysis above, it will not improve affordability conditions in housing markets with sclerotic, inelastic supply. Without directly increasing the supply of new housing units, we should not count on the GSEs to materially improve affordability conditions in the current housing market environment.[29]

The enduring popularity of demand-side interventions and why they no longer work

There are myriad other ways to provide households with more or cheaper capital to facilitate their bidding for a home. Presently under discussion is a proposal to allow borrowers to tap retirement account savings for a downpayment without tax penalty. Another is to change some terms on conforming mortgages to allow substantial prepayment penalties, which should lead to lower mortgage interest rates. Each of these is yet another example of an intervention to boost the demand for housing.[30]

Demand-side subsidies long have been politically popular. They involve benefits being provided to financially stretched households trying to buy a home. This can be a noble goal. The problem is that the costs can outweigh the benefits, not least because the policy is guaranteed to worsen affordability in the most inelastically supplied housing markets, which are the least affordable to start with.[31]

Another reason for the ongoing support of such policies is that they appear to have worked in the past. It bears understanding why, because it sheds light on why demand side subsidies of one type or another no longer improve affordability conditions today. Perhaps the most famous example involves the so-called GI Bill, more formally the Servicemen's Readjustment Act of 1944. One of the many things this bill did was to create a national, government-backed mortgage program that helped millions of returning veterans buy homes with very little or no money down. This legislation shifted out the demand for homeownership far more than today's mortgage rate buydowns do or the proposed 50-year mortgage would. Yet, as Glaeser (2013) noted, it did not lead to a sharp spike in house prices that helped make them unaffordable.

Why not? Because after World War II America embarked upon the greatest homebuilding surge in its history. Supply turned out to be incredibly elastic at

that time. The classic story involves the huge home-building projects of the firm Levitt and Sons.[32] One was a 1,400-acre parcel on Long Island where the company ultimately constructed 17,000 homes, completing a remarkable 35 houses a day in 1948. Levitt and Sons accomplished this by creating a type of assembly line that moved many different construction crews along rows of nearly identical homes. It was a type of Fordist production technology incorporated into homebuilding. Levitt and Sons had many imitators across the country, so the immediate post-WWII era was a time in which the government could support a huge boost to housing demand and see it met by the private sector with an enormous increase in housing supply.

A more flexible and permissive regulatory environment in which rapid increases in supply via large land assembly and speedy delivery of homes on that land are possible has not existed in our major coastal markets for over a quarter century, and it has recently disappeared in many of our major Sunbelt markets. Until something like the "abundance" environment advocated by Klein and Thompson (2025) returns, we should give up on demand-side interventions to try to improve affordability conditions. That leaves us with a variety of initiatives to increase supply, either directly or indirectly.

Supply-side policies intended to improve housing affordability conditions

Supply-side policies typically have the goal of generating additional new housing supply. There is a wide variety of such programs which can be divided into four types, the first of which include policies that do or could directly increase the supply of housing:

1. Selling federal land with the express purpose of building housing on it.

2. Upzoning policies that allow for more density on already developed land.

3. Enacting legislation that would expand the permissible types of housing units to include accessory dwelling units (ADUs) or manufactured homes (MH).

4. Inclusionary zoning is a specific policy enacted by some localities that often requires provision of subsidized housing units in exchange for the builder's right to construct market rate housing.

A second type includes policies that subsidize or otherwise indirectly encourage the supply of additional homes:

5. One example is the Road to Housing Act of 2025, recently passed by the Senate Banking Committee, which proposes to use the federal government's grants and spending programs to allocate more resources to communities that create more new housing units. State governments can and sometimes do pursue a similar strategy.

6. The two GSEs, Fannie Mae and Freddie Mac, operate capital market operations that effectively provide a subsidized construction loan to multifamily developers that allows for lower debt service than would be available from a purely private lender.[33] Essentially, the government is using its balance sheet to encourage more multifamily building than would otherwise occur.

The third type of supply-side policy involves changes to the local housing permit regulatory system, again with the goal of (indirectly) increasing the supply of homes:

7. The simplest would involve streamlining the permitting process at the local level, with the goal of lowering the cost and time involved in the permitting process so that more builders apply for permits and then, hopefully, receive them.

8. A more substantive change would shift the locus of control of the permitting process to a higher level of government. Most states delegate control to local jurisdictions. Taking back some of that power would increase the rate of permit approvals because our current system of local control is biased towards denying applications, as is outlined below.

The fourth and final type of policy is a change in the property tax system:

9. States should consider a broader revision of the way that the property tax is imposed in their jurisdictions. The goal should be to tax land more and structures less, especially in high land value areas. This would impose a price on low density and reduce the incentive for larger lot zoning.

Each of these policies actually will or could increase the supply of new housing units. That alone makes them preferable to demand-side interventions. However, some are likely to generate relatively small increases in new supply, and any hidden costs need to be made clear. We next briefly comment on each policy.

Direct interventions to increase the supply of new homes

Selling federal land with the requirement that housing be built on it is a straightforward idea. The federal government owns a huge amount of land, particularly in the western United States.[34] Much of this land is not located near an urbanized area, which suggests people probably will not want to live in many of these places because there is not a nearby employment center. However, some of this land looks well suited to housing development. A prime example is desert land on the outskirts of the Las Vegas metropolitan area. Much detail needs to be worked out on pricing and how the land would be transferred, but reasonable experimentation should be able to determine those details in ways that are acceptable given that a public asset is being transferred into private hands.[35]

Upzoning is a synonym for densification, which obviously could increase the supply of housing in a market. That said, caution is in order regarding how much and how fast new housing is expected to result from these policies. Recent research by Diamond et al. (2025) and Rollet (2025) suggest we should not expect large or rapid surges in new housing to arise from upzoning in the Chicago and New York City cases they study. Redevelopment costs look to be quite high, especially in densely built environments, so that no more than 10%-15% increases in space result over multidecade periods in these large cities.[36] Their results beg the question of how fast and big an impact might ensue in different urban environments, more suburban ones in particular. That certainly should be an area for research and experimentation. Even presuming that large increases in housing are unlikely to rapidly arise from upzonings, the policy clearly works in the right direction. Hence, we should work toward designing policy that allows more flexibility under different zoning regimes. That option is discussed more fully below.

Allowing different types of housing, with ADUs and manufactured homes being most prominent, is another way to increase new housing unit supply. Many households will not want to live in either type of housing, but some will, particularly since they have cheaper structure costs. In addition, there are potentially large gains from changing rules and laws to allow a standardized modular product in all or most communities. Absent such a change in regulation, it probably does not pay for firms to invest much in product development because it cannot be scaled sufficiently. It certainly is an area in need of research.[37]

Other research and debate has centered on the requirement that there be a permanent steel chassis on which each manufactured home sits. This is a Department of Housing and Urban Development (HUD) requirement put in place in 1974. The argument for eliminating this rule is that allowing designs without this chassis would allow for better integration of modular-type homes into more existing single-family neighborhoods. This seems yet another area where experimentation could be productive.[38]

Inclusionary zoning is the fourth policy option in terms of direct intervention to increase the supply of housing. These programs require developers to provide subsidized units for poorer households in return for the ability to build and sell (or rent) market price units. This policy is likely to be the least effective of the four direct interventions, and it can be counterproductive. The reason is that in most cases it is the builders who must provide the subsidies which enable the poorer tenants to afford their units under current rules for affordable housing programs. This is an implicit tax on the profits from the market rate units. Raising the costs of providing those units will result in a smaller, not a greater, number of them being supplied. To ramp up new supply of market rate units substantially, costs

have to be lowered, not increased. Inclusionary zoning programs should be seen as designed to increase the supply of units for poor households. That is an admirable goal, but it will not lead to a net increase in market price units except under extremely restrictive conditions in which virtually no building would be allowed absent the inclusionary zoning rule.

The first three direct interventions to increase the supply of new housing should be pursued further, but we should be cognizant that none seems likely to increase supply by enough in the short run to materially alleviate affordability problems for middle-class homebuyers. That, said, it all helps, and we should implement and experiment with policies that help.

Indirect policies to increase new housing supply: Subsidies and grants

Other polices that indirectly could increase new housing supply involve implicit or explicit subsidies from federal and/or state governments to reward communities that encourage and realize more homebuilding. The recent Senate Banking Bill mentioned above, The Road to Housing 2025, is an example of how the federal government can try to increase new housing supply. Our system of federalism is well suited to such experimentation. States and localities can learn from one another and adopt best practices based on actual outcomes, not speculative theory.

The implicit benefits associated with increased liquidity provided by the GSEs for builders of apartments should increase the supply of multifamily units. However, we know from the GFC that excessive encouragement of building can lead to large economic costs because the downside risk from mismanagement of Fannie Mae and Freddie Mac ultimately resides with the taxpayers. There is no indication as yet that the costs exceed the benefits of the implicit subsidy to financing costs of multifamily developers, but that cost always should be kept in mind.

Changing the local regulatory structure

The third set of policies involve changing the way that residential land use and building regulation is implemented. The local regulatory process is complex and opaque in many places, so it is challenging to estimate a precise impact of changing these regulations.[39] If the local regulatory environment is simplified and clarified and the time between permit application and approval shortened, costs should fall, which would make it cheaper for builders to bring more units to market. The next "Road to Housing" bill should consider targeting support for local governments that streamline their review processes in certain ways. We could experiment with different ways of doing so, track results, and then adopt the policy change that leads to the largest increase in new housing supply.

More challenging is the eighth policy proposal which suggests increasing the role of state governments in the permit review and approval process. Leaving local jurisdictions in complete charge of this process results in too few units being permitted. All new development generates costs to neighbors. The development will also generate benefits to the community, but some of them are likely to occur in the longer run and they may accrue to the broader community beyond the near neighbors. With near-term costs and future benefits as well as highly localized costs and geographically broader benefits, local regulators will be biased towards turning down building requests. That bias is compounded by the fact that local regulators are not required to consider the benefits that would accrue to nonresidents who would have moved into the community had the new housing been approved. This is a violation of the transparent cost principle for good policy. If those outsiders live within the same state, governors or their agents should care about their utility, which should raise the approval rate. Moving control away from local governments and toward states would be a major change, and it would be highly political in nature. Precisely because it is a big change it could have a large impact on new housing supply. Moreover, this is another case in which federal resources could be used to reward reasonable experimentation by states.

Another potentially important change to the local regulatory system that was referenced earlier in the discussion of upzoning involves altering the nature of our zoning codes themselves. The key feature would be to reduce the detailed specificity that often charac-

terizes our codes and replace them with a more flexible set of rules that would still allow localities some control of their growth. The Introduction referenced the Japanese system which typically allows multiple uses by right but puts limits on the amount of each specific property type permitted. Moving to something like this would allow more building by right and would reduce the chances that a permit request would turn into a lengthy, costly, quasi-judicial review process. This would be challenging to achieve, as the current system exists for a reason. However, it has the potential to lead to substantially more housing units being delivered at lower costs. The next Road to Housing bill (and there definitely should be one) should support states and localities that change their zoning codes in this direction.

Changing the local property tax structure

The final policy recommends moving to a property tax system that taxes land much more than structure. Any implementation is for the longer term, as the costs of altering how local taxation works would be huge because people and firms already sort into locations based on those costs. It would be unfair to change those rules of the game on short notice.[40]

However, we should start researching and planning for such a change in the future. The idea is sound: Because the underlying problem is too few housing units, we should tax structures less and land more. Why we do not do this is clear. Regulators are responding to the preferences of local residents. There is a clear distaste for density by many households.[41] The primary reason for this is because density really does bring costs, and our system of local control does not require one to consider the losses to outsiders who would have moved into the new housing units, so the costs do not have to be all that high for a permit proposal to be turned down. Moving to a system in which land is highly taxed but physical homes are not will generate more structures. Effectively, it raises the cost of low density, particularly in high land-value areas. Low density would still be allowed, but people in a given neighborhood with one acre lots would be taxed much more than those with one-eighth acre lots, regardless of the size of their house. Such a system, first proposed by Henry George in 1879, would result in more structures because the tax rate on them would go down. Hence, this should be on the policy agenda.

What might we be missing?

Before concluding, it bears asking what we might be missing. Some will argue that the undersupply problem is not due to regulatory strictness but monopoly power. Proponents of the position that increasing concentration among homebuilders has created monopoly-like powers for them, allowing for excess profits by restricting output, include Quintero (2023), Sitaraman and Serkin (2025) and Musharbash (2025).[42] A review of the evidence suggests this is not the major cause of the undersupply problem.

While there is rising concentration among homebuilders in many housing markets,[43] it is not the case that even those homebuilders who show up most often on the top 10 lists of firms operating in a market earn abnormally high returns.[44] Even with increasingly large shares of sales or completions by the 10 largest firms in a market, it is very challenging to maintain effective collusion (i.e., prevent cheating on a fixed quantity) among so many firms. If two or three firms had 90%+ shares that would be another thing, as evidence from other industries shows that effective collusion among such a small number of firms can be maintained.[45] However, that virtually never occurs so it should not be surprising that there is no convincing evidence documenting persistent excess returns among builders.

Interest on both sides of the political aisle has recently focused on the role of larger, institutional investors in the single-family rental sector. Legislation recently passed by the Senate restricts the time that institutional investors (presently defined as an entity owning more than 350 such units) may hold single unit homes that are being rented out. I have analyzed this type of policy in "The ripple effects of banning institutional purchases of single-family rentals."[46] This is not listed as a potential supply-side policy because it does not increase the total supply of housing. It will result in units moving from the rental to the owner-occupied sector. However, the magnitude of institutional ownership is quite small outside of select areas, so that the

policy's impacts on overall affordability are likely to be small. In addition, interfering with investor property rights could chill capital supply to this sector, making the policy counterproductive by reducing the overall amount of buildings of new units, especially rentals. See that article for more details.

One final issue, which highlights how challenging the politics of new housing supply can be, involves immigration. More specifically, some building trades have very high shares of immigrant labor, and there are estimates that a significant fraction of that immigrant population does not have the legal right to work in the U.S. The National Association of Homebuilders reports that immigrants represent one-quarter of all workers in the construction industry, with certain building trades having far higher shares.[47] The Pew Research Center has tried to estimate the number of undocumented workers within the broader immigrant group. Before the latest surge in unauthorized cross border immigration, Pew estimated that in 2012, 15% of what they called Construction & Extraction workers were unauthorized immigrants.[48] A more recent study by the Center for Migration Studies estimated that undocumented workers comprised 20% of the construction sector in 2023.[49]

The point is not to pin down the best estimate of the share of undocumented workers in construction but to note that it is economically meaningful in aggregate. Replacing one-fifth of a large sector's workforce would take substantial time and almost certainly be costly in terms of higher wages and reduced production speeds. This issue is inherently political, not just economic in nature. If we are to materially increase new housing production, it will have to be addressed independently of other policies.

IV. Conclusions

Sound economic analysis can help us identify the key causal factors behind the expanding affordability problem in America, as well as distinguish between helpful versus unhelpful policies with respect to alleviating deteriorating affordability conditions. That analysis tells us that the key problem is insufficient supply. That conclusion then informs policy evaluation which concludes that helpful policies are those that, first and foremost, increase new housing supply in the short- and/or longer-runs. The best policies also clearly acknowledge costs, not just benefits. Unhelpful policies typically boost demand without increasing supply and often do not acknowledge their true costs. These are well-intentioned in nature but do not improve affordability in the short- or long-run.

While there are various supply-side policy interventions that could increase new housing supply, a sobering conclusion of this analysis is that there is no one policy that is likely to rapidly generate an economically large increase in building. Hence, we will have to keep at this for a while. This should not be all that surprising, as it took a long time to arrive at the unfortunate affordability conditions we live with today. More promising, but also more challenging politically, is the need to change the local regulatory environment of housing permitting to reduce its incentive to turn down projects. This could be done in a couple of ways. One is to move at least some control over permitting away from very local entities. Another is to modify zoning codes themselves to build in more flexibility via more allowable uses up front.

Economics is essential to identifying useful policy paths, but it is not enough to get us substantially more building. Our growing affordability problem arises to a large extent out of a policy choice itself—namely, to give localities control over the permitting and building process. Four decades ago, we saw localities in our major coastal markets start to restrict building and the restrictiveness never went away. Two decades ago, we saw something similar start to happen in various large Sunbelt markets, and those markets are starting to become unaffordable themselves. Politicians set those rules and politicians will have to reset them. The goal of this report has been to provide a roadmap for that political discussion, one that clearly identifies useful policies and also notes their costs, not just their benefits.

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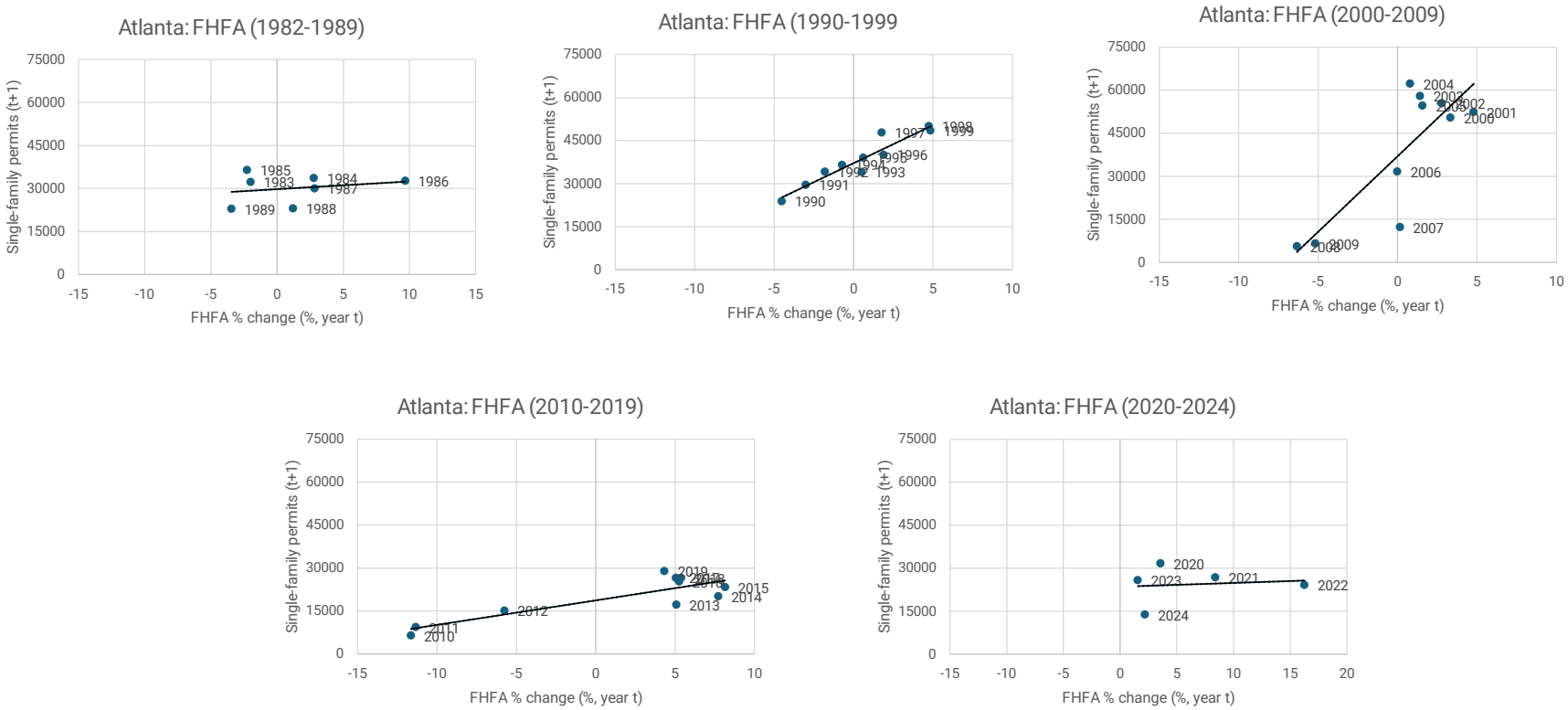
Tables and figures

FIGURE 1

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Atlanta CBSA



SOURCE: Building permit data are from the Census Building Permits Survey (BPS). We construct the county-level permit data before 1990 by aggregating place-level permits. For subsequent years, we use county-level data in the BPS master dataset. The CBSA-level permit data is obtained by aggregating counties using the NBER FIPS–CBSA crosswalk based on the 2010 CBSA definitions. House price indices come from the FHFA all-transactions index and are deflated using CPI.
NOTE: The figure plots single-family building permits in year(t+1) versus real house price changes in year(t) at the CBSA level.

FIGURE 2

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Miami CBSA

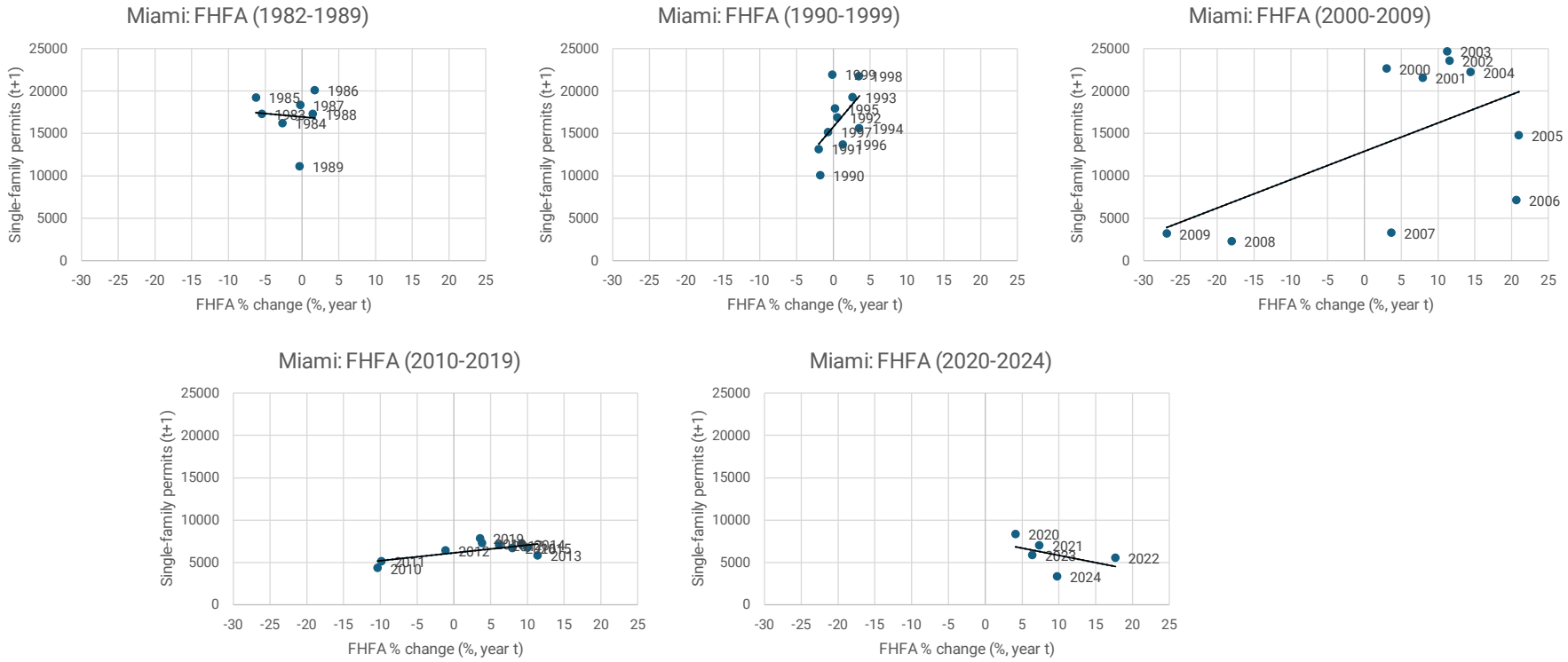


FIGURE 3

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Dallas CBSA

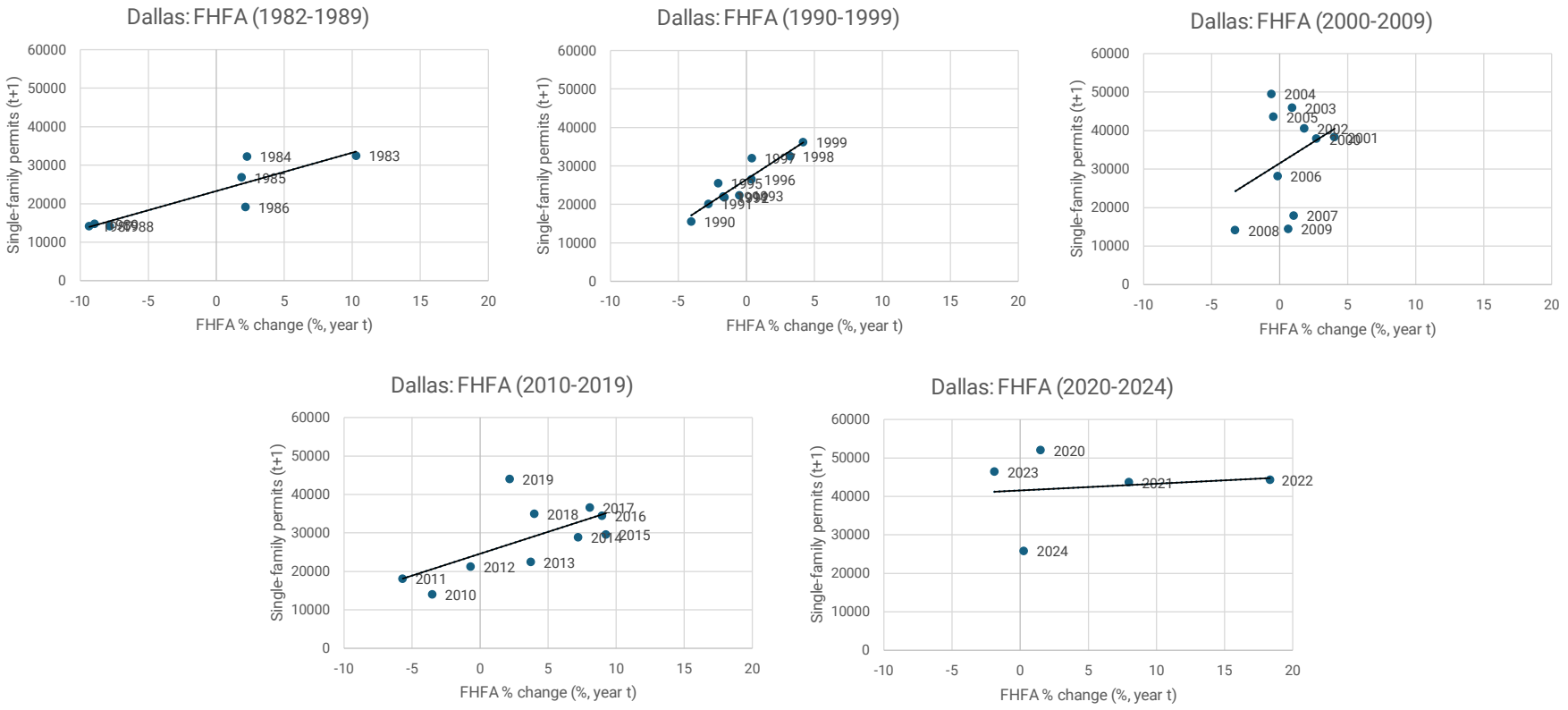


FIGURE 4

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Phoenix CBSA

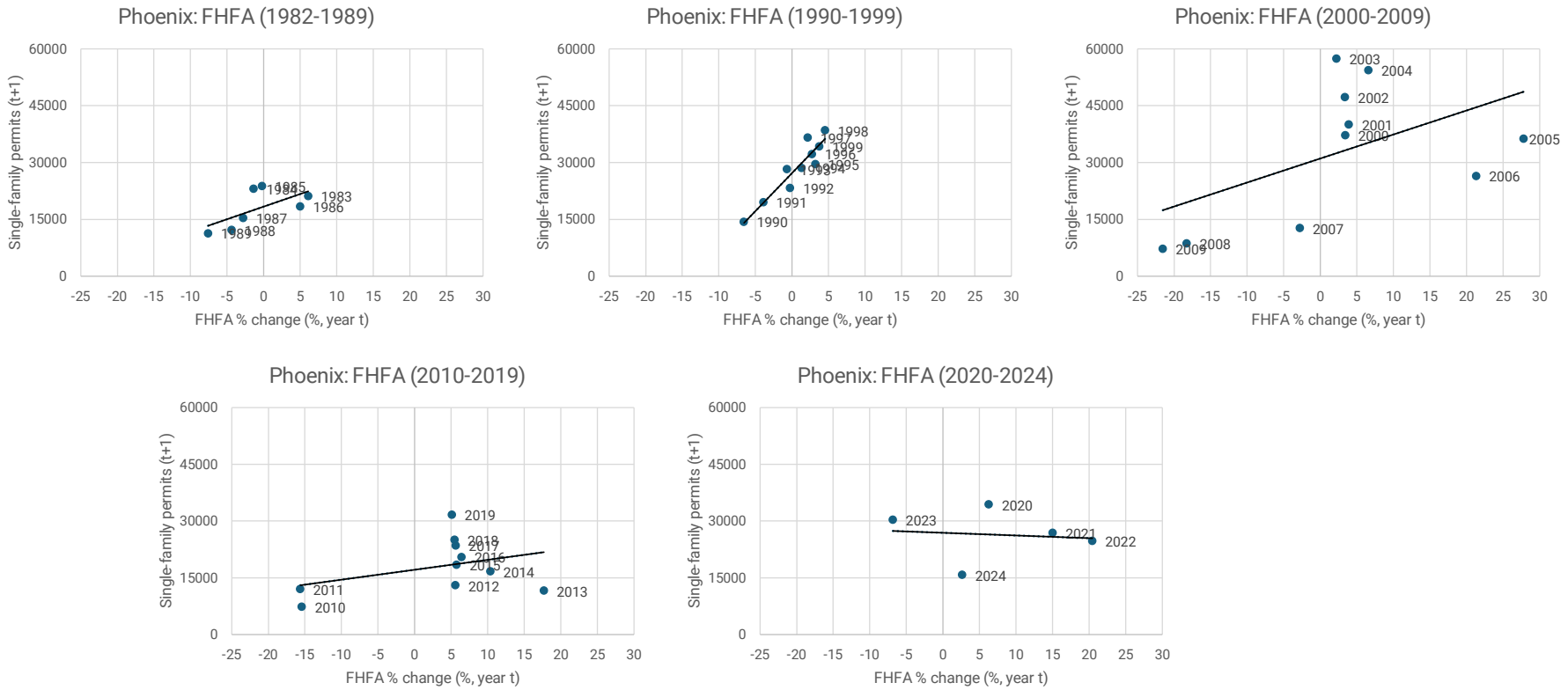


FIGURE 5

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Boston CBSA

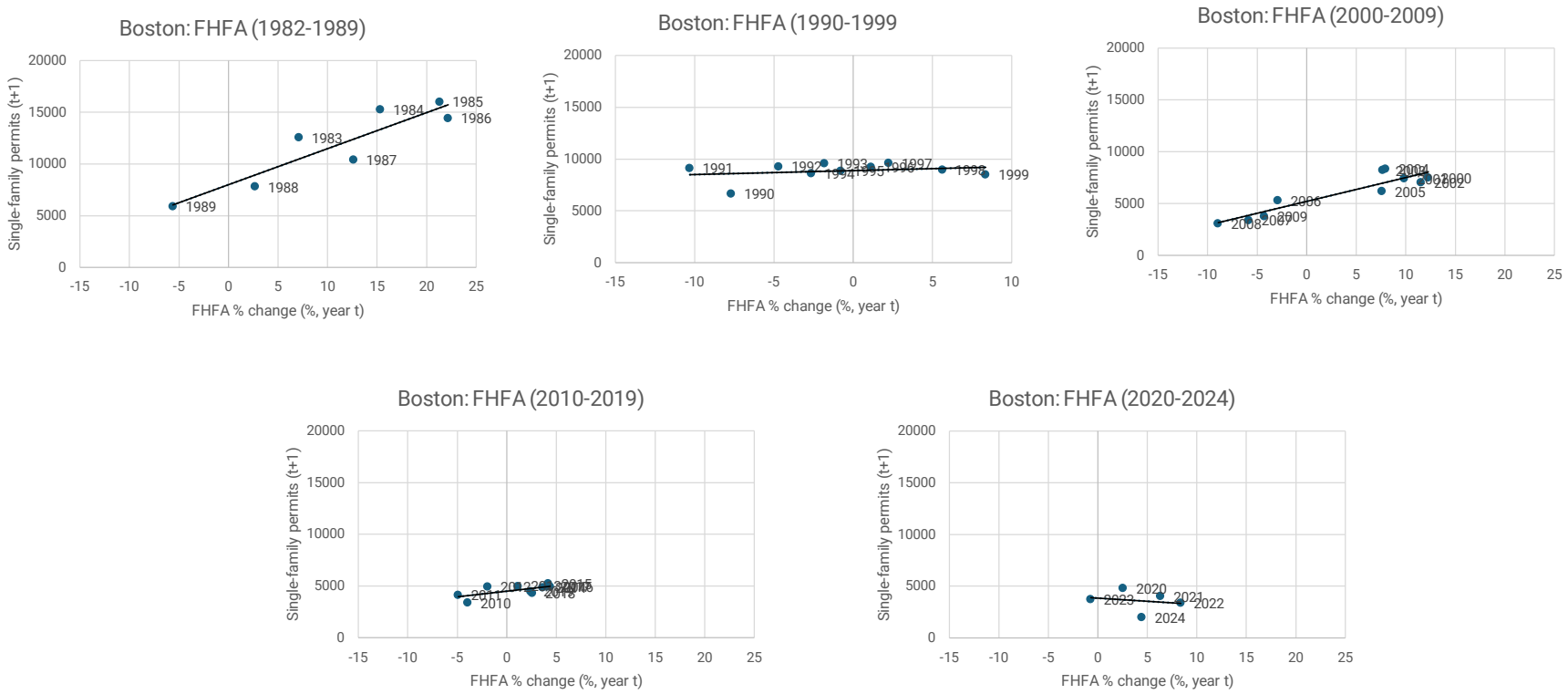


FIGURE 6

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Los Angeles CBSA

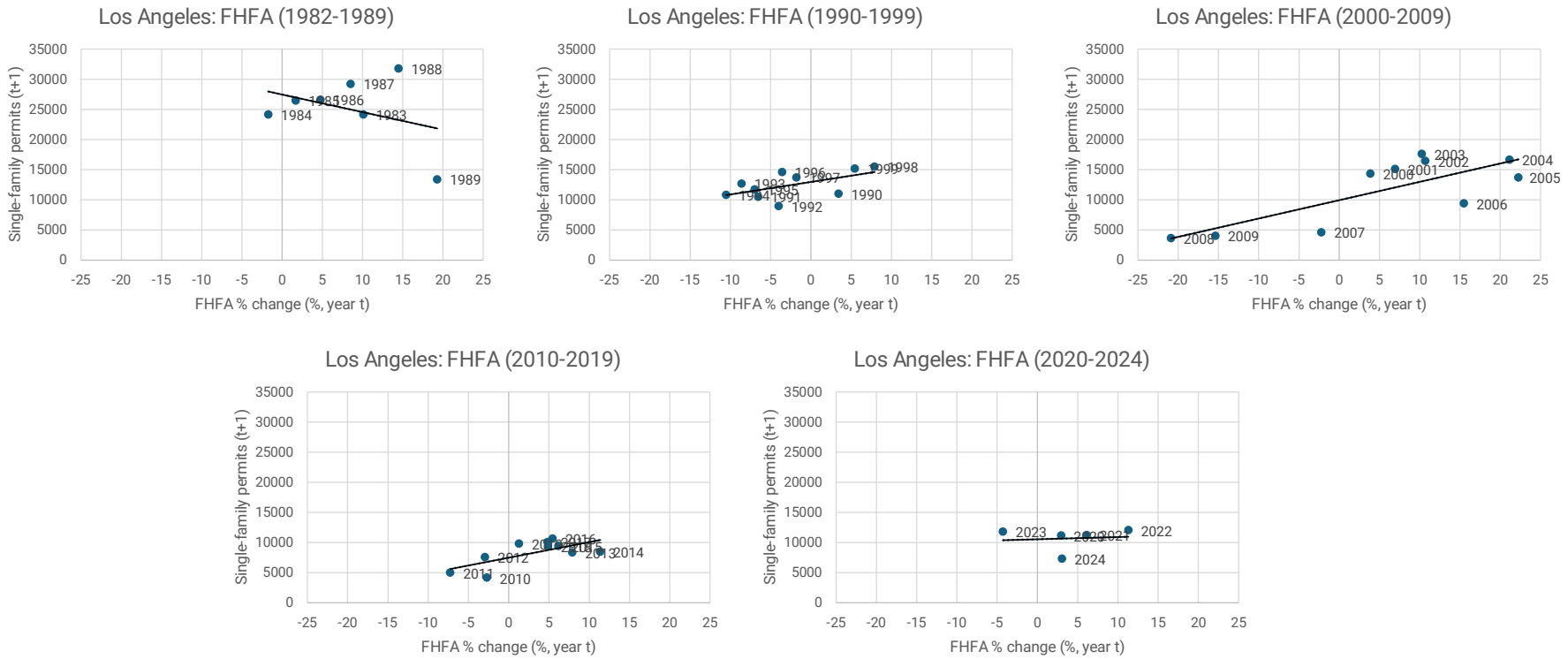


FIGURE 7

Single-Family Building Permits in Year t+1 Versus Real House Price Growth in Year t: Changes in the Detroit CBSA

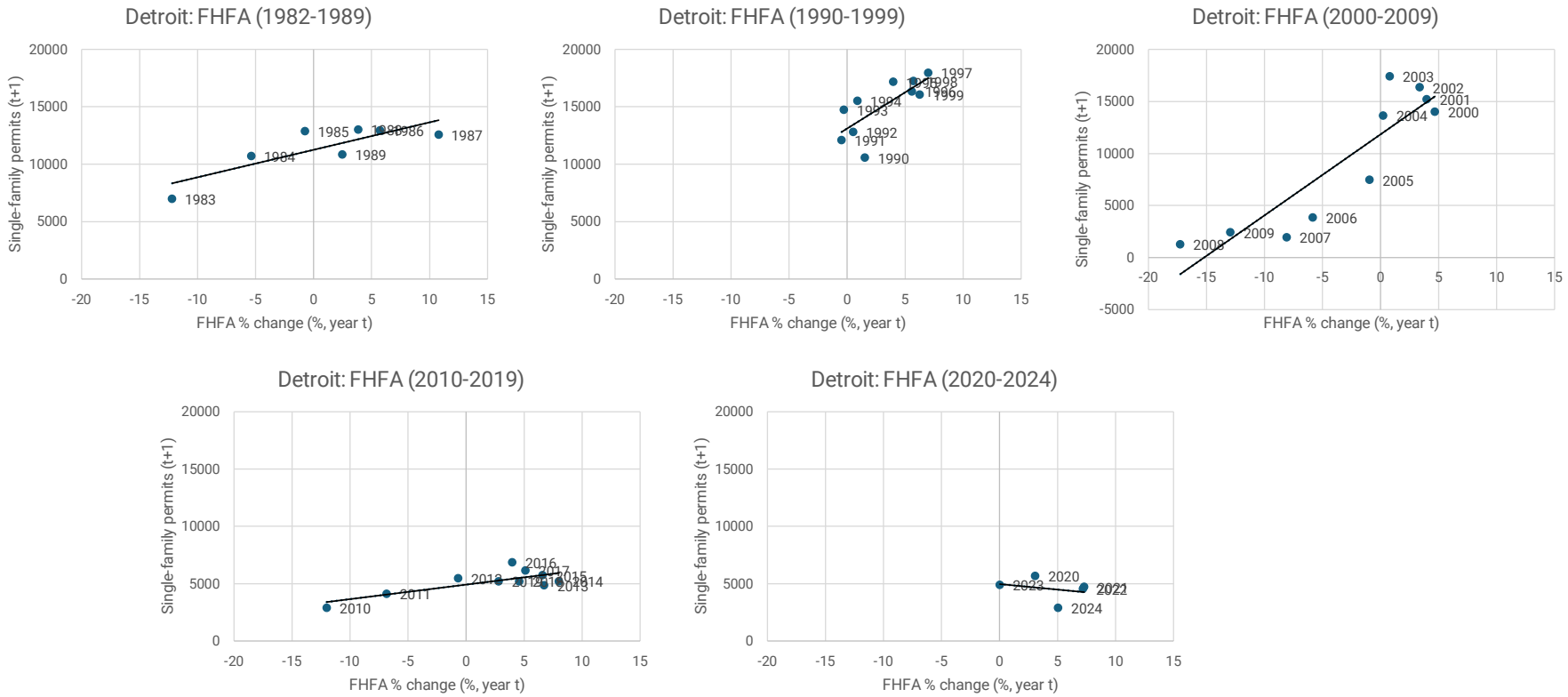


TABLE 1

Real Constant-Quality House Price Growth

Real Percentage Change in FHFA Price Indexes, 24 Metro Areas

1975 - 1999			2000 - 2025		
1	San Francisco	159.7	1	Miami	189.4
2	Seattle	129.1	2	Los Angeles	133.6
3	Boston	97.5	3	Tampa	120.6
4	Los Angeles	86.7	4	San Diego	119.0
5	New York City	72.1	5	Austin	107.3
6	San Diego	68.8	6	Seattle	105.3
7	Denver	48.3	7	Phoenix	103.9
8	Detroit	33.6	8	Orlando	99.4
9	Chicago	28.6	9	Salt Lake City	98.6
10	Salt Lake City	26.8	10	Nashville	98.4
11	Austin	15.3	11	Philadelphia	92.0
12	Raleigh	14.2	12	Washington, DC	83.7
13	Atlanta	11.8	13	Dallas	79.3
14	Charlotte	11.2	14	Denver	79.2
15	Washington, DC	9.8	15	New York City	76.3
16	Phoenix	9.0	16	Boston	74.2
17	Philadelphia	7.6	17	Las Vegas	73.0
18	Cleveland	7.4	18	Charlotte	70.6
19	Nashville	7.1	19	San Francisco	69.4
20	Miami	5.4	20	Raleigh	60.2
21	Orlando	5.4	21	Atlanta	48.3
22	Dallas	-0.9	22	Chicago	20.3
23	Tampa	-3.2	23	Cleveland	11.8
24	Las Vegas	-5.2	24	Detroit	1.3

SOURCE: FHFA HPI Metro
NOTE: Real constant-quality house price changes are calculated using the FHFA repeat-sales house price indexes, deflated by the CPI. Cumulative compounded real house price growth is reported over two periods, 1975:Q1–1999:Q4 and 2000:Q1–2025:Q2. In a few cases, a market starting date in the index can be as late as 1978. See the discussion in the text for those details.

TABLE 2

Interquartile Range of Price-to-Income Ratios Over Time, Select Markets

CBSA	Year	25th	50th	75th
Atlanta	1970	1.62	1.79	2.03
	2000	2.15	2.43	3.03
	2024	3.25	3.76	4.58
Dallas	1970	1.30	1.52	1.77
	2000	1.61	1.90	2.47
	2024	3.05	3.54	4.38
Miami	1970	1.71	1.94	2.23
	2000	2.39	2.85	3.86
	2024	4.46	5.38	6.70
Orlando	1970	1.55	1.70	1.87
	2000	2.14	2.51	2.89
	2024	3.81	4.30	5.01
Phoenix	1970	1.51	1.69	1.91
	2000	2.23	2.56	3.06
	2024	3.98	4.62	5.62
Las Vegas	1970	1.87	2.06	2.57
	2000	2.45	2.82	3.35
	2024	4.44	5.04	5.97
Boston	1970	1.74	1.88	2.08
	2000	3.10	3.75	4.53
	2024	4.45	5.49	6.85
Los Angeles	1970	1.97	2.21	2.54
	2000	3.44	4.31	5.62
	2024	6.16	7.75	10.03

CBSA	Year	25th	50th	75th
New York	1970	1.77	1.77	2.35
	2000	3.10	3.80	5.01
	2024	4.46	5.96	8.08
San Diego	1970	1.94	2.15	2.44
	2000	3.73	4.43	5.48
	2024	6.26	7.54	9.40
San Francisco	1970	2.00	2.18	2.45
	2000	4.30	5.29	6.76
	2024	6.69	8.00	9.69
Seattle	1970	1.70	1.83	1.98
	2000	3.12	3.66	4.41
	2024	5.12	5.93	7.13
Detroit	1970	1.41	1.56	1.75
	2000	2.05	2.46	2.89
	2024	2.38	2.91	3.47

NOTES: Price-to-income ratios are constructed using census tract level data on median house value and median household income downloaded from the NHGIS web site. For more detail, see www.nhgis.org/data. The 1970 and 2000 data are from the relevant decennial census. The 2024 data are from the 2024 American Community Survey (ACS), 5-year average files.

The counties included in a metropolitan area typically increase over time, sometimes substantially for areas that were able to physically expand a lot since 1970 (e.g., Atlanta). Geographic expansion is a potentially important mechanism to improve affordability conditions, as it increases the supply of land available for development. For 1970, we follow the Standard Metropolitan Statistical Area (SMSA) definition in use at the time to determine the counties within the metro area. Data on all tracts within each included county were downloaded, although data cleaning led to the dropping of a few tract-level observations. By 2000, the government's official definition was either as a Metropolitan Statistical Area (MSA) or a Consolidated Metropolitan Statistical Area (CMSA). The latter includes two or more Primary Metropolitan Statistical Areas (PMSA)s. The New York-Northern New Jersey-Long Island, NY-NJ-CT-PA is an example of a CMSA that includes multiple PMSAs such as New York (NY), Newark (NJ), etc. For 2024, we use the new metro area definition called a Core Based Statistical Area (CBSA) to determine the counties within the area, never allowing the number of counties to decline from 2000 to 2024.

Appendix

GAUGING HOW HIGH PRICE-TO-INCOME RATIOS CAN BE BEFORE THEY ARE UNAFFORDABLE

Lenders do not typically publish a fixed multiple of income on which they will lend you to buy a home. However, that multiple can be inferred from rules of thumb regarding how much income a lender requires be available to service a mortgage and its ancillary required costs. One prominent example involves so-called PITI costs: principal + interest + local property taxes + insurance costs. A standard industry guideline is that the sum of PITI costs be no more than 28% of gross income.[50]

Consider a household with $100,000 in annual gross income, a mortgage interest rate of 6%, and taxes and insurance costs amounting to 2% of house value, each of which is consistent with current market conditions. These imply PITI costs equal to 8% of house value. This implies the following,

$$0.08*HV < 0.28*GI,$$

where HV is house value and GI is gross income. House value cannot exceed $350,000 (~$28,000/0.08) for this household to qualify for a mortgage. This implies a price-to-income (P/I) ratio of 3.5.

If interest rates are markedly lower, as they were in the Global Financial Crisis and COVID, then PITI costs can be lower. If PITI costs are 6% of house value, then

$$0.06*HV < 0.28*GI,$$

where all terms are defined as above. Now, that same $100,000 household will qualify for a $466,667 (~$28,000/0.06) home, implying a P/I ratio = 4.67. Clearly, significant swings in mortgage interest rates or other costs affecting PITI really matter.

Naturally, one can get lower maximum affordable house values if household incomes are lower. Going back to the initial case in which PITI = 8%, consider a lower income household earning only $75,000, so that

$$0.08*HV < 0.28*GI.$$

This implies that HV < $21,000/0.08, thus the maximum house this household can qualify for is $262,500. The implied P/I still equals 3.5, as was the case with the $100,000 household, but this lower income household will not be able to buy that more expensive home. Naturally the most constraining case is with high PITI values and low household incomes.

Using reasonable values for PITI costs and household incomes informs us that P/I ratios above 3.5 are likely to be problematic for lenders, and banks generally will not be willing to lend to households buying homes costing 4+ times their gross income. For banks to be willing to lend at higher P/I ratios, PITI costs must be abnormally low, per the second example just above.[51] Local taxes are not in secular decline, nor are home and mortgage insurance costs. In some markets, insurance costs have been rising sharply. What has been lower in the recent past are mortgage interest rates because of Fed actions during the Global Financial Crisis and COVID. Rates are higher today, so banks would need to believe long-term interest rates will fall sharply in the near future to cause PITI costs to return to the low levels associated with the ability to take out a fully amortizing, 30-year, fixed rate mortgage at 3%. Hence, unless one's crystal ball sees long-term interest rates falling by hundreds of basis points, PITI shares in house value will not fall sharply from their current levels, and price-to-income rates around or above 4 will be constraining for borrowers wanting to purchase a home.

Endnotes

1 The rental sector will not be ignored totally, but it cannot be covered in equal depth without expanding the paper substantially. Molloy, Nathanson and Paciorek (2022) show that rental costs have not risen by as much as owner-occupied housing prices or household incomes in many markets. Hence, the middle-class affordability problem is not as severe with respect to apartment rents in many, but by no means all, markets. Deteriorating affordability conditions with respect to the rental sector tend to be more severe in the large coastal markets, which restrict multifamily, not just single family, building. At the national level, the FRED data show that the rental vacancy rate has been as high as 11% in 2009 and fell below 6% in 2022. Presently, it is around 7%, so aggregate vacancies have risen since the end of the COVID-19 pandemic. The most recent FRED data also show the homeowner vacancy rate near its all-time low at 1.1%. It has never been above 3%, which it reached in the aftermath of the Global Financial Crisis (GFC) (see https://fred.stlouisfed.org/series/RHVRUSQ156N for more on both series).

2 This report also abstracts from the important but distinct issue of how to house poor households in as cost effective a manner as possible. This issue is fundamentally different from the middle class affordability problem with respect to home ownership. The core constraint preventing impoverished people from accessing affordable housing is that their incomes are so low, not that their rent is so high (although it certainly can be). For example, the income level determining whether a family of three is eligible for a Housing Choice Voucher (aka Section 8) in my Philadelphia-Camden-Wilmington metropolitan area is $53,750. [See https://www.huduser.gov/portal/datasets/home-datasets/files/HOME_IncomeLmts_State_PA_2025.pdf for the detail.] That is barely one-half of the $101,573 (before taxes; $86,627 after taxes) that the MIT Living Wage Project estimates is required for that same three-person household to live in decent housing (and consume a typical basket of other goods) in the same market. [See https://livingwage.mit.edu/counties/42101 for more detail.] The typical cost of supplying an expensive durable good such as housing is so high relative to the very low incomes of poor households that the private sector will not build new housing units for the poor without some type of subsidy. Hence, housing affordability problems for the poor are endemic because of their very low incomes. Unfortunately, addressing the middle-class homeownership affordability issue will not solve the problem of housing the poor.

3 For example, one zoning category is exclusively for low-rise residential development, another for mid-rise residential development, yet another for mixed use quasi-residential development. There are also purely commercial and industrial zones. For a short and clear description of the Japanese system, see the blog Urban Kchoze at https://urbankchoze.blogspot.com/2014/04/japanese-zoning.html. That source contains a link to an English language publication from Japan's Ministry of Land and Transport which provides the official government explanation of Japan's zoning system.

4 Henry George (1879) suggested such a system in the latter part of the 19th century as a way to better allocate increasingly scarce land in increasingly valuable metropolitan areas because America was urbanizing with the rise of manufacturing. In another Brookings publication, Edward Glaeser and I (2025) concluded that the growing affordability problem across the Sunbelt region is due to the "closing of the suburban frontier" because the biggest declines in the rate of supply of new housing were in lower density, higher priced census tracts that themselves tend to be located in the nicer suburbs of those metropolitan areas. The frontier reference is to Frederick Jackson Turner's (1894) classic take on the importance of the frontier in American history. This second closing of a frontier makes Henry George relevant again. I am indebted to my Wharton colleague, Paul Forrester, for bringing this to my attention.

5 These data are based on Federal Housing Finance Administration (FHFA) constant quality house price indexes. No index is perfect, but it tries to hold constant the physical quality of the underlying homes being priced and are the best available. In addition, the price series for some markets, especially those in the Sunbelt

region, start later than 1975, with the series for the Orlando market not beginning until the second quarter of 1978.

6 The links to the different markets are as follows: https://www.zillow.com/home-values/753899/null/; https://www.zillow.com/home-values/395056/null/; https://www.zillow.com/home-values/395078/null/; https://www.zillow.com/home-values/394404/null/; https://www.zillow.com/home-values/394913/null/; and https://www.zillow.com/home-values/395057/null/.

7 These and the numbers in the previous paragraph are from a ZillowGroup publication that is accessible at the following URL: https://investors.zillowgroup.com/investors/news-and-events/news/news-details/2025/Lower-mortgage-rates-extend-housing-momentum-into-fall/default.aspx

8 It is useful to note that concluding housing markets were generally affordable in 1970 does not mean that some were not much more expensive than others, nor does it imply that all parts of a metropolitan area are affordable to the middle class. Housing markets characterized by valuable amenities (e.g., great weather, a good location on a coast, etc.) will have higher prices on average, so that we would expect Los Angeles and San Francisco housing to cost more than equivalent housing in Detroit or Dayton (Roback (1982)). In 1971, the median house value in the metropolitan area in the 75th percentile of the national distribution was 32% greater than that for the metropolitan area in the 25th percentile of the distribution. Moreover, within a metropolitan area, there often are localities or small regions that are quite expensive and unaffordable to a middle-class household. Those places tend to be very high amenity areas that are in very scarce supply, often because of a geographic constraint such as an ocean (or the Rocky Mountains in Denver). Smaller geographies can become much more expensive than the median house in the wider metropolitan area. Thus, the typical home in the tract with the median P/I value usually is in a generic suburb that is not endowed with an especially scarce and valuable amenity.

9 This argument is dealt with more extensively in Glaeser & Gyourko (2025).

10 Single family permit amounts are from the Building Permits Survey (BPS) and start in 1982. The last full year of permit data is 2024. Real house prices are based on the FHFA constant quality price index discussed above. Hence, the year 2023 in each figure reflects permit issuance in 2024 versus real price growth in 2023. See the notes to Figure 1 for more detail. Metropolitan areas are defined by CBSA definitions that define the counties within the metro area as of 2010.

11 That permitting intensity represents a very low share of Boston's metro area housing stock or number of households, which range from just over 1.7 million households and (total) housing units in 2000 to 1.9 million in 2020. Fifty thousand single family permits over the decade is less than 3% of the total stock. With reasonable assumptions on the rates of depreciation and dilapidation, net growth in the single-family stock in this metropolitan area has been no better than flat for many decades.

12 The Los Angeles metro area is much larger than Boston's, with households and housing units numbering around 4 million in 2000 and 4.5 million in 2020. It's annual permitting rate of about 10,000 single family homes represents an even lower share of the overall market than in Boston.

13 All calculations are based on seasonally adjusted annual rate (SAAR) monthly new privately-owned housing starts (for total units) and SAAR monthly new privately-owned housing units completed compiled by FRED. The relevant URLs to see and download the data are https://fred.stlouisfed.org/categories/32302 and https://fred.stlouisfed.org/series/COMPUTSA, respectively.

14 As with supply snafus during the COVID-19 crisis, the Federal Reserve's decision to rapidly raise its policy rate beginning in March 2022 helped amplify supply shortfalls. In this case, the mechanism was so-called "mortgage lock-in," which led existing owners to hold onto their units for longer than expected (e.g., see Fonseca and Liu (2024) among others). This reduced the number of listings available for sale, but the genesis of the affordability problem still long predates this policy impact as is documented above. It made a bad situation worse.

15 See Glaeser and Luttmer (2003) for an excellent summary and explanation of these costs.

16 See Friedman and Stigler (1946) for an early statement, with Glaeser and Luttmer (2003) providing a more recent and modern take.

17 Diamond et al.'s (2019) study of the 1994 ballot initiative in San Francisco that brought more recently constructed, small, multifamily buildings under that city's rent control regime provides clear and convincing evidence on this. Within twenty years, there was over a 7% decline in the stock of buildings subject to rent control in that city. Stated differently, landlords figured out how to get about 1-in-13 buildings initially subject to rent control out from under that policy regime.

18 This is precisely what happened in St. Paul, MN, following its imposition of rent control in 2022. See the recent Wall Street Journal article at https://www.wsj.com/real-estate/minnesota-rent-control-regulation-prices-34221bd4 for more detail.

19 The negative impacts can be greater over time because today's controls on a subset of the rental stock could deter investment in the uncontrolled stock, as long as there is fear of the control regime being expanded. This is possible, and perhaps likely, as it would be virtually impossible for whomever imposed a rent control regime to credibly commit to not do so again.

20 See Pulte's X account at https://x.com/pulte/status/1987228558226280813 for one such notification. It includes a picture of Franklin Delano Roosevelt below the words "30-Year Mortgage,", alongside one of President Trump with the words "50-Year Mortgage." Pulte called the proposed new mortgage a "complete game changer."

21 The monthly payment on the 50-year, $300,000 mortgage would be about $1,579.21 versus $1,798.65 on a 30-year, $300,000 mortgage with a 6% interest rate.

22 The best recent estimate of the elasticity of supply from Baum-Snow and Han (2024) is that it is indeed very low and near zero at 0.3.

23 In our case with a 6% mortgage interest rate, total interest payments on a 50-year mortgage over the full term of that loan is $647,528, compared to $347,514 for a 30-year mortgage.

24 There are a number of academic and public sector studies estimating how long a typical owner stays in their home. Typically, the results range from 8-13 years (e.g., see Dana Anderson for Redfin News (March 12, 2025, at https://www.redfin.com/news/homeowner-tenure-california-longest/), Gronberg and Reed (1992), Haurin and Rosenthal (December 2004), and Mateyka and Marlay (2011) for a few examples).

25 Another risk arises from the potential for an owner to lose its equity in a housing market downturn. To understand this better, presume you are simply unlucky in the sense you bought around a cyclical peak. We know from recent experience that house prices can drop well more than 4.3% over a decade. In that case, you may have to come out of pocket to pay off the mortgage if your house value has come down far enough. The likelihood that this happens is not high but it is possible, and it depends upon various factors such as how big the housing market downturn is and how large one's equity downpayment was at purchase.

26 For a more detailed analysis of why builders use this strategy, see Li (December 12, 2023, "Builders Rediscover a Tool from the 1980s that Keeps New Home Prices from Falling", which is available at https://www.housingwire.com/articles/builders-rediscover-a-tool-from-the-1980s-that-keeps-new-home-prices-from-falling/) and Li and Pinto (November 12, 2025, "Three Years Later, Permanent Rate Buydowns Continue to Prop Up New Home Prices", which is available at https://www.aei.org/articles/three-years-later-permanent-rate-buydowns-continue-to-prop-up-new-home-prices/).

27 For a reposting of President Trump's tweet and some commentary on the legal authorization behind the policy, see https://x.com/NickTimiraos/status/2009406313688633408.

28 The likely impact on pricing will be relatively small—only a small fraction of a percentage point. Two hundred billion dollars in MBS purchases sounds like a lot, but it only amounts to just over 2% of the residential mortgage-backed securities market, which amounts to around $9 trillion according to a recent report from MSCI which may be accessed at https://www.msci.com/research-and-insights/paper/agency-mbs-risk-and-return-social-impact-factors). Moreover, this is an incredibly liquid market with an average daily trading volume be-

ing about $350 billion according to the Securities Industry and Financial Markets Association (https://www.sifma.org/research/statistics/us-mortgage-backed-securities-statistics). The low purchase amount appears to reflect constraints on the amount of retained assets (which include mortgages and MBS) that Fannie Mae and Freddie Mac may hold based on the Preferred Stock Purchase Agreements made between each GSE and the U.S. Treasury in 2021. Those agreements cap the retained assets at $225 billion for each GSE. Details of amended agreements are available on the FHFA's web site at https://www.fhfa.gov/conservatorship/senior-preferred-stock-purchase-agreements.

29 The GSEs do have loan programs for multifamily developers that probably do increase the supply of apartments. That is discussed below.

30 See these links for more information on these proposals: https://www.wsj.com/politics/policy/trump-plan-would-let-americans-use-401-k-s-for-down-payments-on-homes-official-says-64eb4375 and https://www.housingwire.com/articles/ackman-mortgage-prepay-penalties/

31 There are other costs associated with these policies that would have to enumerated. For example, retirement security clearly is impacted if 401(k) funds are put into a relatively illiquid housing investment. Changing the cost of prepaying a mortgage will impact mobility, something that can affect households' ability to move to opportunity.

32 The material in this paragraph come from D'Amico, et. al. (2024).

33 For more on this policy, see https://www.fhfa.gov/policy/enterprise-multifamily-businesses.

34 To see the geography of these holdings, an excellent mapping tool is available on the American Enterprise Institute (AEI) Housing Center's website at https://heat.aeihousingcenter.org/toolkit/homestead_map.

35 The Bureau of Land Management already engages in land swaps with private sector landowners, so a template exists for these exchanges. For more detail, see https://www.blm.gov/programs/lands-and-realty/sales-and-exchanges.

36 See Freemark (2023) for a review of the academic literature before 2023. In the policy arena, see the debate between the Urban Institute (https://www.urban.org/research/publication/land-use-reforms-and-housing-costs) and AEI (https://www.aei.org/wp-content/uploads/2025/10/Peter-Critique-Panel-Study-WP-1.pdf?x85095) on the efficacy of upzoning reforms.

37 We also are likely to learn much from studying other countries such as Sweden that use modular building techniques much more broadly than we do in America. Specific techniques and rules for stacking these types of units make their use in multistory structures much more common in Sweden (Gedin (2023), Ormarsson, et al. (2019)). One Swedish research report claims that 84% of detached homes in that country use prefabricated timber elements, as well as prefabricated metal products (Sweden Prefabricated Housing-Market Share Analysis, Industry Trends and Statistics, Growth Forecasts (2024-2029), a summary of which is available at https://www.researchandmarkets.com/reports/5394144/sweden-prefabricated-housing-market-share?srsltid=AfmBOoqfrVLqlq8YP_bCQ65oyizyOL-E3976nTCsjHaUCud_PyycOBN8.).

38 The Road to Housing Act discussed above allows for this.

39 Two surveys of the local regulatory environment done at the Wharton School report a very complex regulatory matrix with the standard minimum lot size requirements but also complexities such as having multiple points of veto along the permitting process, impact fees, exactions, long delays between permit application and a decision from the local government, etc. See Gyourko, Saiz, and Summers (2008) and Gyourko, Hartley, and Krimmel (2021) for more detail.

40 Pittsburgh, PA, is the most prominent American city to have changed its property tax regime along Georgian lines. For an analysis of its impact following implementation at the end of the 1970s, see Oates and Schwab (1997).

41 For a recent estimate, see Gyourko and McCulloch (2024).

42 The Musharbash analysis is a lengthy web posting entitled "Messing with Texas: How Big Homebuilders and Private Equity Made American Cities Unaffordable" which may be accessed at https://www.thebignews-

letter.com/p/messing-with-texas-how-big-homebuilders.

43 The National Association of Homebuilders, which tracks the top ten builder share of closing and completions over time, reports that the share of closings was under 10% in the early 1990s, had risen to the high 20% level by the mid-2000s just before the GFC, and has increased to over 40% in the last few years. See the NAHB blog, Eye on Housing, at the following URL, https://eyeonhousing.org/2024/08/top-10-builder-market-shares-for-2023/ for a recent chart of the time series. The same NAHB blog reports top 10 builder concentration ratios for the top 50 housing markets as of 2024. Concentration is greater in larger housing markets, with the full range running from a low of 38.9% to a high of 97.8%, with an average of 79.3%. For those 2024 market-level data, see https://eyeonhousing.org/2025/07/top-10-builder-market-share-across-metros/.

44 Glaeser and Gyourko (2025) examined the returns over the current and previous cycles of a dozen large homebuilders that comprise the firms traded in the S&P SPDR Homebuilders ETF over the current and previous cycles. It is true that homebuilders do better than the typical S&P 500 firm on the upside of the cycle, but that is to be expected. Homebuilding is known to be a high beta sector. However, effective monopolists are able to maintain relatively high returns throughout the cycle. That is what enables them to earn excess returns over long periods of time. Homebuilders did not earn higher returns (absolutely or relative to the broader stock market) in the current boom compared to past booms when looking over short periods such as four years or longer periods of 10 or 15 years. In addition, DeFusco, Nathanson, and Zwick's (2022) examination of the boom leading up to the GFC and the subsequent bust, which concludes that speculative investment from shorter-term investors helped precipitate the bust, highlights that returns on the upside of the cycle were very large indeed. However, they were largely lost on the downside of that cycle because of a speculative frenzy that the large homebuilders could not control. If they were effective monopolists, they could have prevented entry by the speculators, which would have helped them maintain low supply and higher prices.

45 This is called an oligopoly in the economics literature, but the principles involving reduced output, higher prices, and excess returns still hold.

46 See the full analysis at https://www.brookings.edu/articles/the-ripple-effects-of-banning-institutional-purchases-of-single-family-rentals/.

47 For more detail, see https://www.nahb.org/advocacy/industry-issues/labor-and-employment/immigration-reform-is-key-to-building-a-skilled-workforce/concentration-of-immigration-in-construction-trades.

48 Estimating unauthorized workers is obviously challenging. See the Pew report of March 26, 2015, at https://www.pewresearch.org/race-and-ethnicity/2015/03/26/chapter-1-occupations-of-unauthorized-immigrant-workers/ for more on their methodology.

49 See The Role of Undocumented Workers in High-Growth Occupations and Industries Across the United States, Matthew Lisiecki, for the Center for Migration Studies, August 27, 2025, which may be downloaded at https://cmsny.org/publications/undocumented-workers-in-high-growth-occupations-and-industries/.

50 For more detail on this and the calculations just below, see the Bank of America web posting "Solving the income-to-mortgage equation", which may be accessed at https://mortgage.bankofamerica.com/jwong16?article=202509TR&p=real-estate-professionals&utm_source=chatgpt.com.

51 One way for a household to get around this constraint is to have enough wealth to be able to put up additional collateral above and beyond the downpayment (and, ultimately, the house). Richer and older households often will have enough investment wealth accumulated to be able to do this. The presumption throughout this paper is that we are gauging affordability for a typical middle class household that has not accumulated such wealth. For that household, it will be very challenging to buy a home more than 3.5 to 4+ times its income.

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