Housing Supply Gaps in Michigan: Measurement Challenges, Spatial Mismatch, and Diverging Patterns of Growth

Authors

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Introduction

Housing availability has become a central concern in urban planning and policy, with empirical research documenting substantial housing shortages across the U.S. (Glaeser & Gyourko, 2001; Gyourko, 2009). Limited housing supply can constrain household formation (Bleemer et al., n.d.; Warner & Sharp, 2024), worker in-migration (Been et al., 2019), and residential turnover (Dieleman et al., 2000; Myers et al., 2023), and may also exacerbate housing affordability challenges (McClure & Schwartz, 2025; Pendall et al., 2022).

In Michigan, several state- and city-level analyses find extensive housing supply gaps, although estimates of these gaps vary widely. In part, the wide variability in these estimates reflects differences in how housing supply and demand are measured, as well as the spatial scale at which they are examined. The Michigan Housing Data Portal, for example, compares housing permits to the net change in employed residents (Michigan Housing Data Portal, 2024). Using this method, it estimates that approximately 525 permitted homes were added per 1,000 jobs between 2015 and 2024 — equivalent to a 2:1 jobs-to-housing ratio, a gap of approximately 50%. Alternative methodological approaches yield markedly different estimates.[1] For example, analyses reported in the news media often draw on different data sources and geographic scales, leading to substantially different conclusions regarding the extent of housing shortages. Some articles suggest that Michigan's overall housing deficit is relatively modest — around 16,000 units statewide (Moore, 2023) — while others highlight much larger shortages at more localized scales, such as an estimated 34,000-unit shortfall in Kent County alone by 2029 (McVicar, 2025).

[1] The Employer-Assisted Housing Fund Administrative Plan from the Michigan State Housing Development Authority estimated that between 2013 and 2024, the state produced one new housing unit for every fourteen new jobs created (MSHDA, 2024). This 14:1 ratio is interpreted as a housing "gap" because it compares gross job creation (jobs added without accounting for losses) to new housing permits, implying that housing production has not kept pace with employment growth. However, this estimate was later corrected and updated to reflect 2015-2024, which shows closer to one housing unit for every two new jobs.

Although estimates of housing supply gaps vary considerably, policy discussions and efforts to increase housing supply have intensified. Jurisdictions across the state have begun reforming zoning policies — relaxing parking requirements, streamlining approval processes, and expanding by-right development to support housing production (Michigan House of Representatives, 2025). At the state level, proposed legislation (House Bills 5529, 5530, 5531 and 5532) seeks to amend the Michigan Zoning Enabling Act by preempting certain aspects of local control.

In this study, we examine the extent and nature of housing supply gaps across the state of Michigan at the state, metropolitan, and jurisdiction levels from 2008 to the present. To do so, we measure characteristics of housing supply, including new housing production, housing vacancy, and housing demolition. We also examine housing demand, including changes in employment and labor force, population, and housing occupancy. Lastly, we examine changes in housing cost and tenure.

We find that there is significant variability in housing production and demand trends both between and within metropolitan areas. These patterns point to local and regional housing dynamics shaped by local differences in population growth, residential mobility and turnover, and housing production. However, in the aggregate, we find limited evidence for persistent regional housing supply gaps; instead, supply gaps, if they exist, are hyper-localized and largely responsive to intra-metropolitan, inter-jurisdictional changes in demand. These findings challenge the prevailing narrative of extensive housing supply gaps and point to the need for more contextualized policy responses. Thus, we argue that state- and local-level policy discussions regarding the extent of housing supply gaps and the appropriate policy responses should proceed with caution. This caution is particularly important because aggregate, statewide estimates can obscure substantial variation across places.

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State-Level Trends

We begin by estimating potential supply gaps at the state level. In doing so, we replicate the approach presented in the Michigan Housing Data Portal (2024), although we use alternative measures of housing demand to illustrate the sensitivity of housing supply gap estimates demand-side indicators. Specifically, we use 1-Year Estimates from the American Community Survey (ACS) retrieved from the National Historical Geographic Information System NHGIS (Schroeder et al., 2025) to calculate the change in the total labor force, total employed population,[2] and total households between 2013 and 2024. We also calculate net job gains[3] between 2013 and 2024 using data from U.S. Bureau of Labor Statistics (n.d.). We compare each of these demand-side measures with the number of building

[2] The total labor force includes employed people and people seeking employment. The total employed population does not include people seeking employment.
[3] Net job gains are total job gains minus job losses.

permits issued by jurisdictions across the state between 2013 and 2024, rectrieved from the State of the Cities Data System (HUD Office of Policy Development and Research, n.d.).

The results, shown in Table 1, illustrate that one-to-one comparisons of housing supply and demand are highly sensitive to how demand is defined, with some measures substantially overstating housing shortfalls. Over this period, 218,158 building permits were reported to the U.S. Census Bureau, providing a conservative estimate of the number of new housing units developed between 2013 and 2024.[4] During this same period, Michigan added 262,799 people to the labor force, compared to 509,414 additional employed workers, and 386,329 net job gains. These measures differ for a couple of reasons. First, gains in employed workers outpace gains in the total labor force because unemployment declined over time. Second, new job creation outpaces increases in the labor force because some individuals hold multiple jobs. Consequently, changes in employment and net job growth do not correspond directly to changes in housing demand and tend to overstate the number of households requiring housing.

Table 1. State-Wide Estimates of Housing Supply Gaps

Year	Labor Force	Employed	Total Households	Net Job Gains
2013	4,846,296	4,369,787	3,832,466	
2024	5,109,095	4,879,201	4,131,281	
Change (2013-2024)	262,799	509,414	298,815	386,329
Permits (2013-2024)	218,158	218,158	218,158	218,158
Demand-Supply Ratio	1.20	2.34	1.37	1.77
Units Needed	44,641	291,256	80,657	168,171

These differences produce substantially different estimates of housing need. Using employment growth as the measure of demand yields the largest estimated supply gap, with a demand-to-supply ratio of 2.34 and an implied state-wide shortage of 291,256 units. Using net job gains reduces the estimate to a ratio of 1.77 and an implied shortage of 168,171 units, but this measure still likely overstates demand because it does not account for multiple jobholders. Labor force growth provides a more stable benchmark because it measures the number of people participating in the labor market rather than the number of jobs held. Under this approach, the ratio falls to 1.20, indicating a need for only 44,641 additional units. An even more direct measure of housing demand is growth in the number of households, which increased by 298,815 during the study period. Because households correspond to occupied housing units and account for variation in the number of workers per household—including retirees and multi-worker households—this measure provides the most appropriate basis for one-to-one comparisons with housing supply.[5] Using household growth yields a

[4] Only approximately half of jurisdictions report permits to the SODCS survey and not all new housing units are developed with a permit.

[5] Demand for housing is also shaped by changes in household size. However, over this period, the average household size in Michigan declined only marginally from 2.5 to 2.4 people (2013 and 2024 American Community Survey 1-Year Estimates). These estimates were retrieved from the National Historical Geographic Information System NHGIS (Schroeder et al., 2025)

ratio of 1.37 and an implied statewide shortage of 80,657 units. Overall, these results suggest that housing production has largely kept pace with demand generated by economic growth, although modest supply shortfalls remain depending on the measure employed.

Metropolitan-Level Trends

Our previous analysis indicates that demand for new housing units at the state level is, at best, modest. However, these state-level estimates may mask divergent trends in supply and demand across metropolitan areas. To examine this possibility, we now turn to an analysis of metropolitan-level trends in housing supply and demand. In doing so, we also illustrate how accounting for housing vacancy affects supply gap estimates.

Figure 1 displays the percent growth in population and housing units across Michigan metropolitan areas over time. We rely on American Community Survey (ACS) 5-Year Estimates from 2008 through 2021.[6] Population increases are steady and cumulative in only a handful of large and economically diversified metros, such as Ann Arbor, Grand Rapids, Holland, Kalamazoo, and Traverse City. In these metropolitan areas, population growth has outpaced housing growth, thus signaling tightening supply conditions. In contrast, smaller and legacy industrial metros – such as Saginaw, Owosso, Bay City, Iron Mountain, Escanaba, and Sault Ste. Marie – show sustained population decline, as well as counts of housing units that have remained flat or declined modestly over time.

To illustrate the potential impact of changes in supply and demand on the availability of housing, we turn to a detailed analysis of trends in housing vacancy. Figure 2 shows owner stock vacancy rates: specifically, we calculate the number of for-sale housing units as a share of all for-sale or owner-occupied units. Once again, we use 5-Year Estimates from the ACS between 2008 and 2021. In many metropolitan areas, vacancy rates in the owner stock have declined considerably over time. This is true in both growing metros (e.g., declines of 3 to 4 percentage points in Ann Arbor, Grand Rapids, and Traverse City), but is even more pronounced in legacy industrial metros (e.g., 5 to 6 percentage points in Flint, and Saginaw). In metropolitan areas with declining populations, this decrease in the vacancy rate is likely attributable to the demolition or attrition of obsolete units, the conversion of owner-occupied stock to rentals, and slower housing construction.

[6] We use the middle year as the focal time period. Thus, estimates for 2008 are derived from 2006-2010 5-Year Estimates from the ACS.

Figure 1. Population and Housing Growth from 2008 to 2021

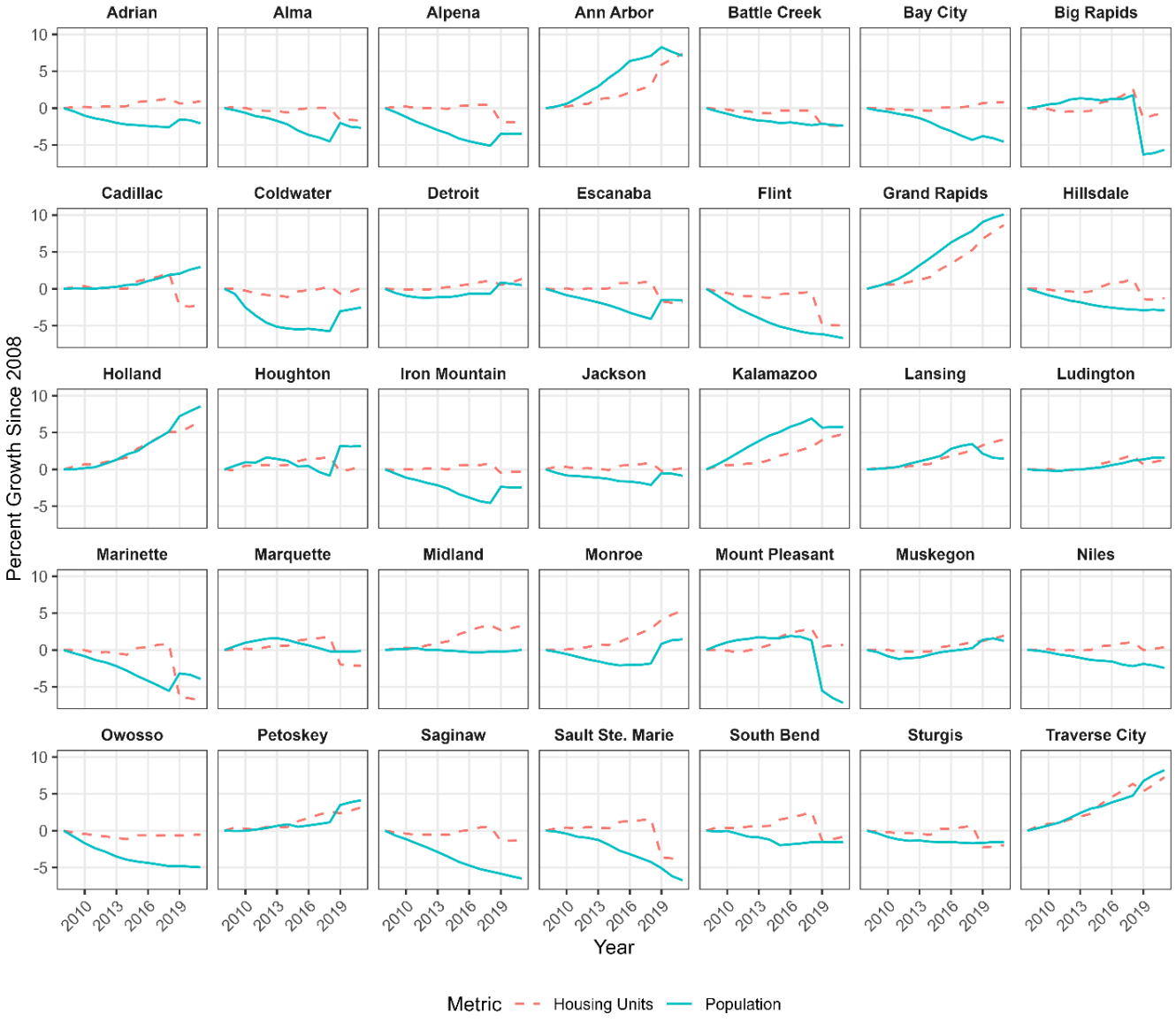
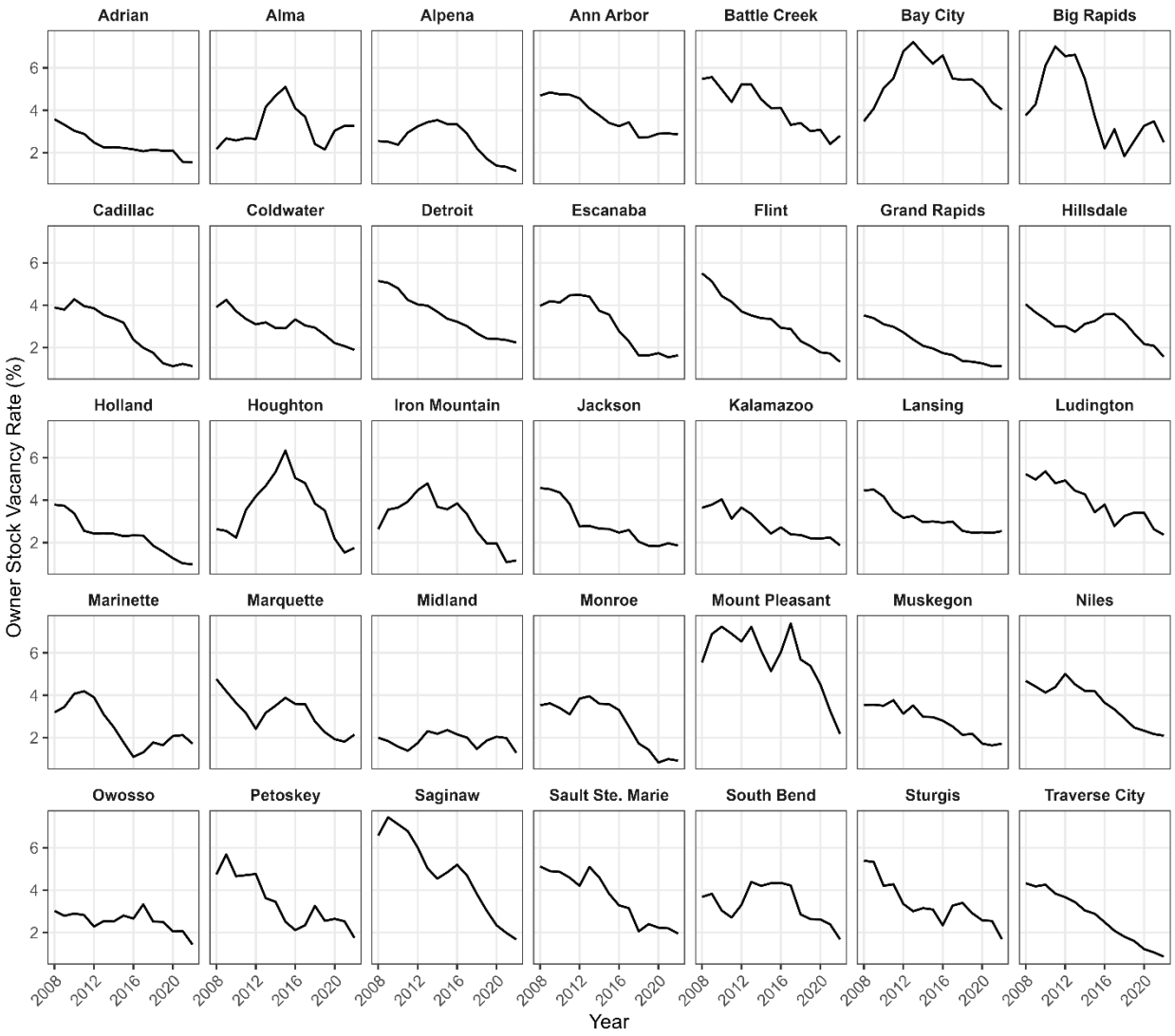


Figure 2. Temporal Changes in Vacancy: Owner-Occupied and For-Sale Housing Stock



In Appendix A, we present estimates of changes in vacancy rates in the rental housing stock as well (see Figure A.2). These rates are considerably higher, in general, and display greater heterogeneity. This variability underscores the localized nature of rental demand and the structural differences between owner and renter submarkets. In Appendix A, we also present estimates of changes in what the Census Bureau calls “other” vacant units (which include units that are not for sale or rent; see Figure A.3). Vacancy rates for these off-market units also vary widely by metropolitan area. Additionally, we present estimates of seasonal vacancy rates in Appendix A (see Figure A.4), which remain relatively stable over time but vary considerably by location, with as much as one in five housing units allocated to seasonal or recreational uses in places such as Big Rapids, Cadillac, Houghton, Luddington, Marinette, Petosky, Sault Ste. Marie, and Traverse City. More broadly, the results suggest that housing stock and housing availability are not synonymous. Metropolitan areas

can contain substantial inventories of vacant housing, yet these units may differ considerably in their marketability and potential for future occupancy.

This distinction has important implications for estimating housing supply gaps. Most measures (including those based solely on employment growth, household growth, housing permits, or changes in total housing units) implicitly assume that all future demand must be met through new construction. In practice, some demand may be accommodated through the absorption of existing vacant units, particularly in communities with inventories of vacant housing that can be returned to occupancy with reasonable levels of rehabilitation and investment. To account for this possibility, we employ a stock-accounting approach that explicitly considers both changes in marketable housing supply and the stock of vacant units available to absorb future demand.

We first estimate the total number of households and total marketable units in both 2010 and 2021.[7] Marketable units are defined as occupied housing units or unoccupied housing units that are for sale or for rent (i.e., we exclude housing units that are classified by the Census Bureau as seasonal or other vacancies, since these are not available for sale or rent).

We then compare changes in households and marketable units between 2010 and 2021. In many metropolitan areas, the stock of marketable housing in 2010 exceeded the number of households, creating a reserve of vacant but potentially occupiable units. Rather than assuming that all future household growth must be accommodated through new construction, we treat this pre-existing surplus as available capacity that can absorb future demand. For example, the Lansing metropolitan area contained 190,243 marketable units and 180,387 households in 2010, leaving a surplus of 9,856 vacant marketable units. Between 2010 and 2021, the number of households increased by 12,608 while the number of marketable units increased by 10,313. Under a conventional approach, this would imply a shortage of 2,295 units. However, because Lansing entered the period with 9,856 vacant marketable units, much of this household growth could be accommodated through the absorption of existing vacancies. After accounting for this pre-existing surplus, Lansing retained approximately 7,561 units of excess capacity.

To better estimate the number of additional units that may actually be needed, it is also necessary to account for a natural vacancy rate—that is, the level of vacancy required to support normal residential mobility in a healthy housing market. A reasonable estimate can be derived as a weighted average of national homeowner and renter vacancy rates.[8] We therefore reserve 2.6 percent of marketable units as necessary vacancy and do not treat these units as available capacity. In Lansing, this amounts to approximately 5,214 units in 2021. Subtracting this amount from the estimated excess capacity of 7,561 units leaves approximately 2,347 units of remaining surplus capacity. This

[7] Once again, we use the mid-point of the 5-year estimate as the focal time period. Thus, estimates from for 2010 and 2021 are derived from 2008-2012 and 2019-2023 5-Year ACS Estimates, respectively.

[8] National vacancy rates have remained relatively stable in recent years at approximately 1 percent for homeowners and 7 percent for renters (U.S. Census Bureau, 2026a). Applying these rates to Michigan's 2025 homeownership rate of 74 percent (U.S. Census Bureau, 2026b) yields a natural vacancy rate of approximately 2.6 percent [(.01*.74) + (.07*.26) = .026],

final measure represents the extent to which a metropolitan area can accommodate additional household growth while maintaining a healthy level of housing market turnover.

The results in Table 2 show that once housing vacancy is accounted for, the estimated housing supply gap largely disappears in most metropolitan areas. Rather than widespread shortages, the results suggest that many Michigan metropolitan areas have no aggregate housing deficit and may instead exhibit signs of overbuilding. This pattern likely reflects a spatial mismatch between where housing units are available (often in central cities) and where demand is strongest (typically in suburban or outlying areas). These findings also challenge the assumption that job growth necessitates new housing construction, as some metros have sufficient excess units to accommodate additional demand, particularly in the absence of sustained metro-wide population growth. Although this analysis does not account for variation in demand by unit type (e.g., multifamily versus single-family) or differences in housing quality beyond excluding units that are not marketable (e.g., abandoned or seasonal units), the results nonetheless suggest that policy emphasis may be better placed on rehabilitating or upgrading existing housing stock rather than prioritizing new construction.

Table 2. Metropolitan-level Housing Supply Gap or Surplus, Using a Stock-Accounting Approach

Metropolitan Area	Total Households 2010	Total Households 2021	Total Marketable Units 2010	Total Marketable Units 2021	Total Vacant Marketable Units 2010	Change in Marketable Units (2010 - 2021)	Change in Households (2010 - 2021)	Change in Supply Gap (2010 - 2021)	Surplus Capacity Accounting for 2010 Vacancy	Surplus Capacity Adjusted for Natural Vacancy (2.6%)
Detroit	1,652,102	1,755,372	1,760,462	1,811,502	108,360	51,040	103,270	*-52,230*	56,130	***9,031***
Lansing	180,387	192,995	190,243	200,556	9,856	10,313	12,608	*-2,295*	7,561	***2,347***
Saginaw	77,426	77,586	83,545	81,944	6,119	-1,601	160	*-1,761*	4,358	***2,227***
Battle Creek	53,290	53,431	56,951	55,890	3,661	-1,061	141	*-1,202*	2,459	***1,006***
Ann Arbor	134,883	149,256	142,423	154,150	7,540	11,727	14,373	*-2,646*	4,894	***886***
Bay City	43,918	44,917	46,696	46,955	2,778	259	999	*-740*	2,038	***817***
Kalamazoo	99,720	106,251	104,973	109,921	5,253	4,948	6,531	*-1,583*	3,670	***812***
Mount Pleasant	24,752	24,942	26,462	26,049	1,710	-413	190	*-603*	1,107	***430***
Muskegon	65,247	67,112	68,519	69,223	3,272	704	1,865	*-1,161*	2,111	***311***
Owosso	27,378	27,618	28,398	28,651	1,020	253	240	*13*	1,033	***288***
Big Rapids	15,695	16,312	16,774	17,019	1,079	245	617	*-372*	707	***265***
Alma	14,721	14,511	15,183	15,133	462	-50	-210	*160*	622	***229***
Sturgis	22,258	23,610	24,224	24,416	1,966	192	1,352	*-1,160*	806	***171***
Sault Ste. Marie	14,662	13,867	15,610	14,397	948	-1,213	-795	*-418*	530	***156***
South Bend	19,801	21,089	20,673	21,763	872	1,090	1,288	*-198*	674	***108***
Jackson	59,949	62,034	63,562	63,800	3,613	238	2,085	*-1,847*	1,766	***107***
Houghton	15,142	15,341	15,672	15,830	530	158	199	*-41*	489	***77***
Niles	61,286	63,651	65,216	65,425	3,930	209	2,365	*-2,156*	1,774	***73***
Coldwater	16,036	16,922	16,879	17,422	843	543	886	*-343*	500	***47***
Petoskey	13,541	14,604	14,503	15,016	962	513	1,063	*-550*	412	***22***
Traverse City	58,474	64,217	61,966	65,951	3,492	3,985	5,743	*-1,758*	1,734	***19***
Cadillac	18,160	19,178	19,197	19,685	1,037	488	1,018	*-530*	507	*-5*
Ludington	12,336	12,426	13,087	12,733	751	-354	90	*-444*	307	*-24*
Marinette	10,869	10,011	11,294	10,251	425	-1,043	-858	*-185*	240	*-27*
Marquette	26,324	27,887	27,911	28,598	1,587	687	1,563	*-876*	711	*-33*

Hillsdale	17,557	17,858	18,410	18,236	853	-174	301	*-475*	378	*-96*
Escanaba	16,071	15,900	16,738	16,216	667	-522	-171	*-351*	316	*-106*
Adrian	37,591	38,807	38,990	39,732	1,399	742	1,216	-474	925	*-108*
Iron Mountain	11,322	11,837	11,720	12,019	398	299	515	*-216*	182	*-130*
Alpena	13,098	12,734	13,452	12,931	354	-521	-364	*-157*	197	*-139*
Midland	33,696	34,608	34,349	35,302	653	953	912	*41*	694	*-224*
Holland	41,958	44,984	43,816	45,676	1,858	1,860	3,026	*-1,166*	692	*-496*
Flint	166,386	166,375	176,902	170,249	10,516	-6,653	-11	*-6,642*	3,874	*-552*
Monroe	58,292	62,509	61,068	63,345	2,776	2,277	4,217	*-1,940*	836	*-811*
Grand Rapids	390,857	436,435	408,327	444,581	17,470	36,254	45,578	*-9,324*	8,146	*-3,413*

Note: Bold = Surplus

Jurisdiction-Level Trends

To examine changes in housing supply and demand at a smaller scale, we now turn to analyses of city- and township-level housing trends over time. We begin by mapping patterns of vacancy, production, and demolition in cities and townships within selected metropolitan areas. To illustrate the relationship between housing supply and housing costs, we also examine changes in housing value and rent across at the jurisdiction level. Specifically, Figure 3 displays the housing vacancy rate[9] as of 2010; the percent change in occupied units, median contract rent, and median housing value between 2010 and 2021; and estimates of the housing production and housing demolition rate during that same time period.[10] Legacy cities like Detroit and Flint have higher baseline vacancy rates and elevated demolition activity in or near the urban core, while suburban jurisdictions show comparatively stronger growth in occupied units and housing production. In contrast, stronger markets like Grand Rapids exhibit lower baseline vacancies, more widespread housing production, and larger net gains in occupied units across much of the metropolitan area. The maps in Figure 3 also illustrate that jurisdictions with high rates of housing production have experienced the largest increases in housing costs between 2010 and 2021. Thus, there is limited evidence that new housing production has reduced pressure on housing costs. Instead, new development is concentrated in jurisdictions with rising rates of occupancy and rising housing costs.

[9] We display the housing vacancy rate for marketable units in both the renter and owner stock.

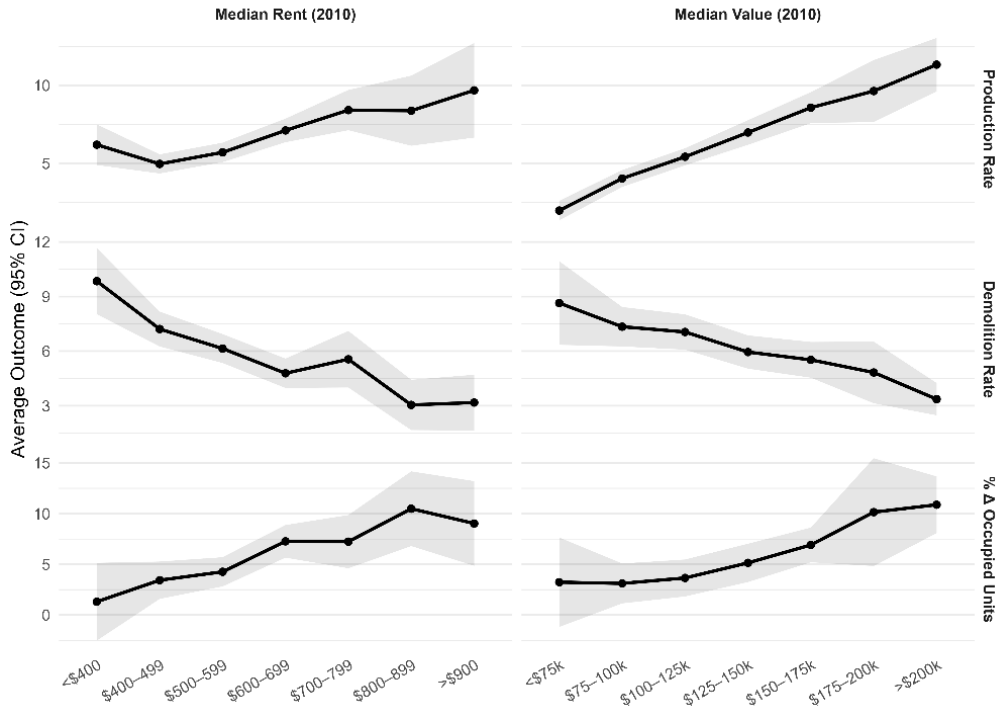
[10] Once again, we use the mid-point of the 5-Year ACS estimate as the focal period. To calculate the production rate, we use 2021 ACS estimates of the percentage of housing units built after 2009. To estimate the demolition rate, we first use the 2010 ACS estimates to calculate the number of housing units in the jurisdiction as of 2010. We then calculate the percentage of these housing units that were removed from the housing stock by 2021, as follows: $100 * \frac{Pre{-}2010\ Units_{2010} - Pre{-}2010\ Units_{2021}}{Pre{-}2010\ Units_{2010}}$.

Figure 3. Spatial Patterns in Housing Trends at the Jurisdiction Level for Selected Metros

To better understand the relationship between production trends and housing costs, Figure 4 plots the average production rate, demolition rate, and change in occupied housing units between 2010 and 2021 by the median contract rent and median housing value in the jurisdiction as of 2010. Rates of housing production and net changes in occupied housing units are highest in cities and townships with higher baseline rents and home values; thus, new construction and household growth are disproportionately concentrated in relatively higher-cost jurisdictions. In contrast, demolition rates are highest in jurisdictions with low median values and median rents. Together, these findings suggest that cities and townships that had the strongest housing markets in 2010 have experienced the greatest demand for and supply of housing over the past decade. Conversely, the jurisdictions

with the weakest housing markets – those with low housing costs and high rates of vacancy – have experienced considerable rates of housing demolition, declines in housing occupancy, and only modest increases, and in some cases decreases, in housing costs. With the findings in Figure 4, this indicates that new housing production has been concentrated in jurisdictions with the highest housing costs.

Figure 4. Average Housing Production, Housing Demolition, and Household Growth by Baseline Housing Price



Policy Implications

Our results demonstrate there is substantial variation in key housing outcomes over time, between metros, within metros (i.e., between jurisdictions), and within market segments (e.g., renter vs. owner). These results highlight the need to accompany claims about housing supply gaps and related outcomes with qualification about context and scale. Statewide and regional estimates can obscure important differences in local housing market dynamics. Across many metropolitan areas, housing demand is uneven—concentrated in select jurisdictions and more evident in the owner-occupied market—while other areas exhibit signs of excess supply and ongoing declines in demand. Notably, in many jurisdictions—and even across many entire metropolitan areas—there is little evidence of a housing supply gap, suggesting that calls for additional construction or broad regulatory changes may be over-stated. Supplemental findings from survey research conducted as part of this project support these conclusions. (See Appendix B).

To the extent that housing supply gaps exist in Michigan, they are often hyper-localized. Jurisdictions across the state face a variety of housing challenges. Central cities are often managing the liabilities of depopulation—such as property abandonment and subsequent demolition—while growth and market activity occur elsewhere in the region. These findings underscore the importance of accounting for attrition and the restructuring of supply and demand both within and across metros. For example, tightening rental markets in jurisdictions with high demolition rates reflect localized adjustments driven by unit loss rather than broad-based demand growth, reinforcing the need for context-specific interpretation.

This uneven geography of growth and decline points to the need for coordinated, metropolitan-scale strategies that better align housing reinvestment and new production with the demographic trends and fiscal realities of individual jurisdictions. In metropolitan areas experiencing limited population growth or ongoing population decline, additional housing production may primarily redistribute households across jurisdictions rather than accommodate substantial net new demand. Under these conditions, new development in stronger markets can draw households and investment away from neighboring communities, potentially accelerating disinvestment, increasing vacancy, and reinforcing existing patterns of uneven development and suburban sprawl. As a result, housing policy should move beyond assumptions of uniform statewide housing shortages and instead be calibrated to the distinct market conditions that exist both between and within metropolitan areas.

Taken together, these findings point toward a shift from uniform, production-oriented housing policy to a more spatially differentiated approach that simultaneously manages growth and decline within metropolitan regions. To conclude, we present five policy recommendations that align with the results of this research.

1. Rehabilitation-First Housing Strategy

Why: The results suggest that many Michigan metropolitan areas do not face aggregate housing shortages, but instead have excess or underutilized units alongside potential localized mismatches in type, quality, and location.
How: Prioritize policies and funding streams that support the rehabilitation, modernization, and adaptive reuse of existing housing stock (e.g., grants, low-interest loans, code compliance programs), particularly in areas with high vacancy or aging units, before incentivizing new construction.

2. Metro-Scale Housing Coordination Frameworks

Why: The results show that production and demolition are occurring in different jurisdictions, creating inefficiencies.
How: Establish regional housing strategies (through MPOs, councils of governments, or state-enabled compacts) that coordinate where new housing is added and where contraction is occurring, rather than allowing fragmented, jurisdiction-by-jurisdiction decisions.

3. Targeted Reinvestment and Regional Fiscal Compensation

Why: Many central cities are disproportionately burdened with nonmarket vacancy (i.e., property abandonment and subsequent demolition), while growth and tax base expansion shift outward.
How: Direct public investment (e.g., infrastructure, housing rehabilitation, land banking) toward

jurisdictions experiencing sustained decline, and implement regional fiscal tools (e.g., revenue sharing, tax-base sharing, or state transfers) to offset the uneven distribution of costs associated with managing decline.

4. Context-Sensitive Zoning and Regulatory Reform

Why: The results indicate that demand is uneven and not universal across jurisdictions.
How: Avoid blanket upzoning or statewide deregulation mandates; instead, target regulatory changes to high-demand jurisdictions while allowing more flexible, stabilization-oriented approaches in weaker markets.

5. Improve Measurement of Housing Demand and Supply

Why: The results demonstrate that commonly used indicators, such as employment growth, can overstate supply gaps or obscure important spatial variation.
How: Expand standard housing metrics to incorporate a broader set of supply and demand measures. Include vacancy, demolitions, and tenure shifts, and require sub-metropolitan analysis to better capture localized conditions before making policy decisions.

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Appendix A: Assessing Measures of Housing Supply and Demand at the Metro Level

In this section we show in greater detail how the selection of measures of supply and demand shapes estimates of housing supply gaps at the metropolitan level. Figure A.1 evaluates how metropolitan housing supply has responded to demand growth across four measures — labor force, employment, population, and households (occupied units). The top panel shows the distribution of demand growth across CBSAs between 2010 and 2021. Each observation is a metropolitan area. The second panel displays scatterplots of each demand measure (x-axis) against three supply-side responses (y-axis): the change in total housing units, the housing production rate (new units relative to the 2010 stock), and the change in marketable units (occupied plus for-rent/for-sale inventory). The bottom panel presents a histogram of the gap between these measures of supply and demand. As the results illustrate, there is no single, consistent story. For example, when demand is measured using employment (jobs), many metro areas appear to have a shortage of housing—suggesting supply is not keeping pace with demand. But when demand is measured using households, the gaps are much smaller and often close to zero. The same issue occurs on the supply side. When supply is measured using total housing units or the number of units available on the market, estimated housing supply gaps are larger. But when supply is measured using new construction alone, the gaps are smaller. Overall, Figure A.1 shows that estimate of housing supply gaps depend heavily on how both demand and supply are defined.

Figure A.1. Supply and Demand Measures, and Housing Supply Gaps, at the Metropolitan Level

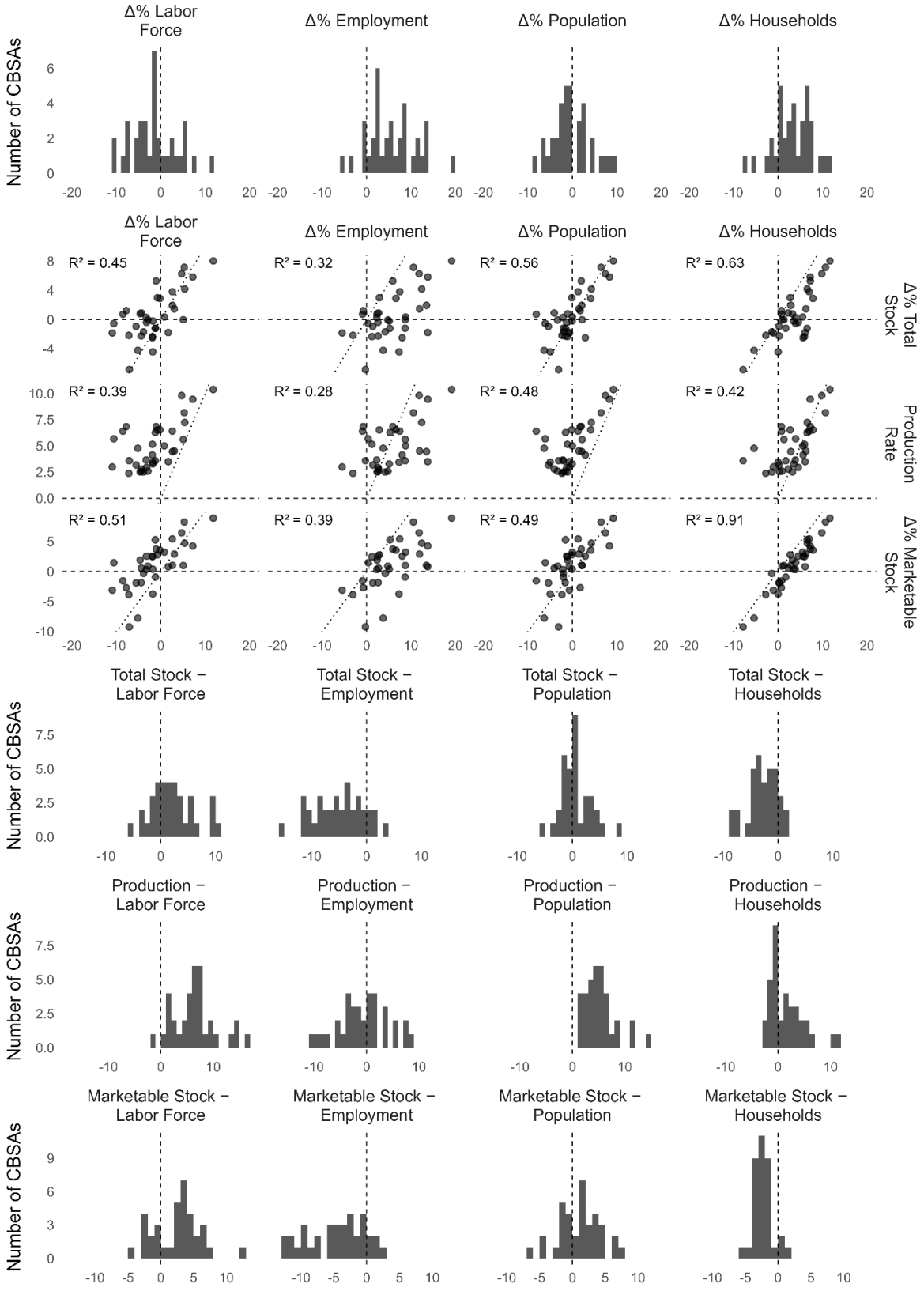


Table A.1 illustrates the estimated change in housing supply gaps from 2010 to 2021 at the metropolitan level, assuming no gap or excess supply at the start of the period (2010). The table shows that the change in these gaps, like the state-wide estimates, vary widely and depend heavily on how both supply and demand are measured. When using our preferred comparison—changes in marketable units relative to changes in households—most small and mid-sized metros show relatively modest changes in their housing supply gaps, and in some cases apparent surpluses where household counts declined (e.g., Alma, Alpena, and Sault Ste. Marie). At the same time, comparisons using labor force growth often diverge sharply, frequently showing larger "surpluses" over time or smaller changes in the gaps because labor force changes are more volatile and influenced by labor-market participation trends rather than direct housing need. Measures based on total production (new units) also tend to show larger negative changes in the gaps, reflecting the fact that new construction does not fully translate into net additions to usable housing stock due to demolition, conversion, or obsolescence.

Table A.1. Estimated Change in Metropolitan-level Housing Supply Since 2010

					Change in Supply Gap by Measure (Assuming No Gap or Surplus in 2010)			
Metropolitan Area	**Change in Marketable Units**	**Production (# of New Units)**	**Change in Households**	**Change in Labor Force**	**Marketable Unit-Households**	**Marketable Unit-Labor Force**	**Production-Households**	**Production-Labor Force**
Alma	-50	407	-210	-730	***160***	***680***	***617***	***1137***
Midland	953	2345	912	-313	***41***	***1266***	***1433***	***2658***
Owosso	253	783	240	-989	***13***	***1242***	***543***	***1772***
Houghton	158	1181	199	911	-41	-753	***982***	***270***
Alpena	-521	381	-364	-1005	-157	***484***	***745***	***1386***
Marinette	-1043	510	-858	-843	-185	-200	***1368***	***1353***
South Bend	1090	1621	1288	-316	-198	***1406***	***333***	***1937***
Iron Mountain	299	411	515	-413	-216	***712***	-104	***824***
Coldwater	543	1040	886	157	-343	***386***	***154***	***883***
Escanaba	-522	603	-171	-1932	-351	***1410***	***774***	***2535***
Big Rapids	245	1200	617	-2135	-372	***2380***	***583***	***3335***
Sault Ste. Marie	-1213	1012	-795	-901	-418	-312	***1807***	***1913***
Ludington	-354	1182	90	-1100	-444	***746***	***1092***	***2282***
Adrian	742	1092	1216	-2277	-474	***3019***	-124	***3369***
Hillsdale	-174	777	301	-264	-475	***90***	***476***	***1041***
Cadillac	488	1067	1018	-429	-530	***917***	***49***	***1496***
Petoskey	513	1387	1063	-35	-550	***548***	***324***	***1422***
Mount Pleasant	-413	1816	190	-3172	-603	***2759***	***1626***	***4988***
Bay City	259	1342	999	-2313	-740	***2572***	***343***	***3655***
Marquette	687	1768	1563	-630	-876	***1317***	***205***	***2398***
Sturgis	192	968	1352	479	-1160	-287	-384	***489***
Muskegon	704	3273	1865	2127	-1161	-1423	***1408***	***1146***
Holland	1860	4663	3026	3986	-1166	-2126	***1637***	***677***

Battle Creek	-1061	1556	141	-2939	-1202	***1878***	***1415***	***4495***
Kalamazoo	4948	7950	6531	7148	-1583	-2200	***1419***	***802***
Traverse City	3985	7930	5743	3472	-1758	***513***	***2187***	***4458***
Saginaw	-1601	2758	160	-5144	-1761	***3543***	***2598***	***7902***
Jackson	238	2269	2085	-1363	-1847	***1601***	***184***	***3632***
Monroe	2277	4309	4217	-808	-1940	***3085***	***92***	***5117***
Niles	209	2807	2365	-2570	-2156	***2779***	***442***	***5377***
Lansing	10313	12745	12608	6285	-2295	***4028***	***137***	***6460***
Ann Arbor	11727	12048	14373	9822	-2646	***1905***	-2325	***2226***
Flint	-6653	6610	-11	-3516	-6642	-3137	***6621***	***10126***
Grand Rapids	36254	44516	45578	64730	-9324	-28476	-1062	-20214
Detroit	51040	85089	103270	65278	-52230	-14238	-18181	***19811***

Notes: Uses 2012 and 2023 5-year ACS data (2010 and 2021 are midpoint); Bold = Housing Surplus; Ordered by Change in the Supply Gap as Measured by Marketable Units – Households

Temporal Changes in Vacancy

Figures A.2, A.3, and A.4 display temporal changes in vacancy rates between 2008 and 2021 for renter-occupied and for-rent housing units, other vacant units, and seasonal housing units.

Figure A.2. Temporal Changes in Vacancy: Renter-Occupied and For-Rent Housing Stock

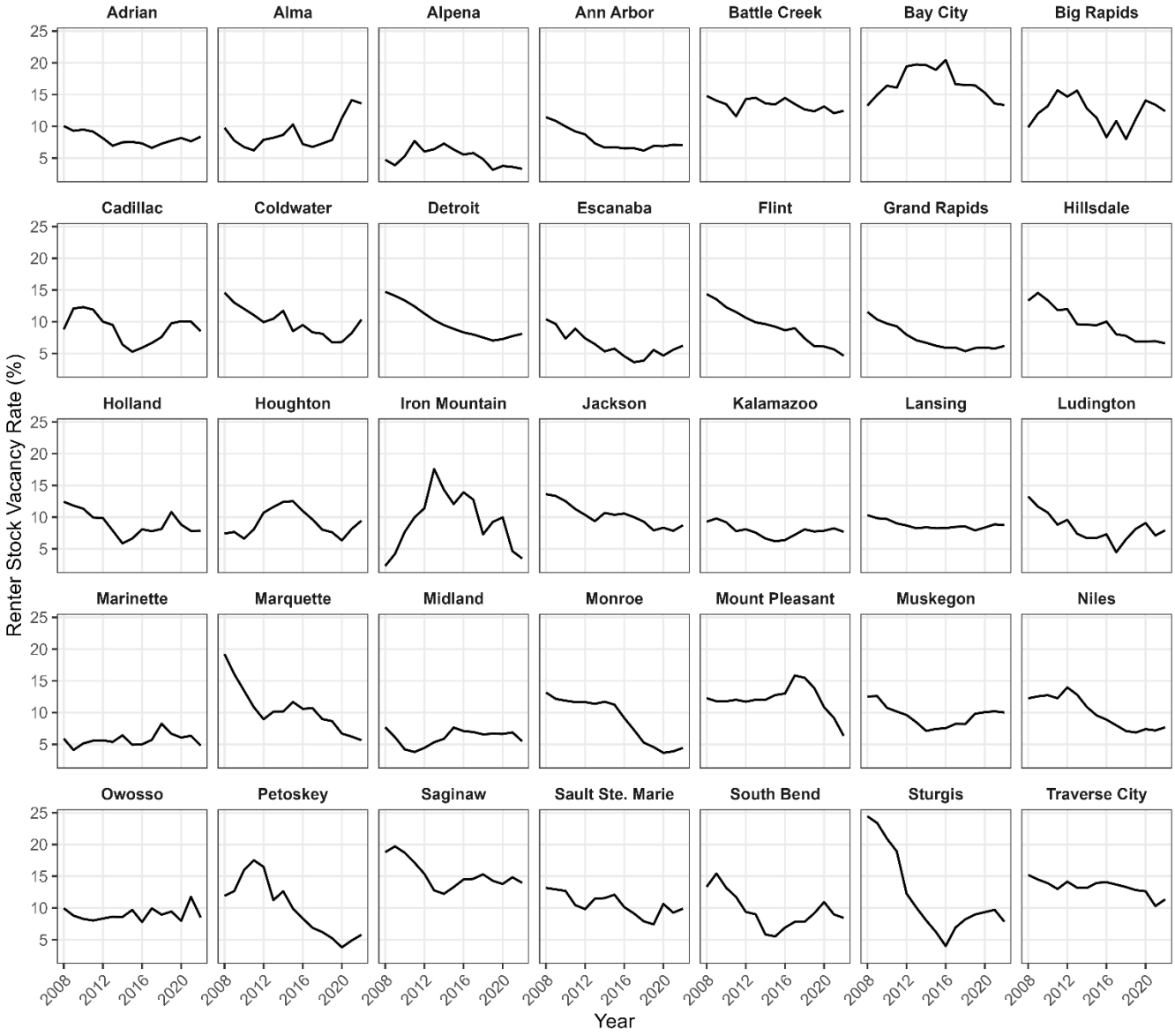


Figure A.3. Temporal Changes in Vacancy: Other Vacant Housing Units

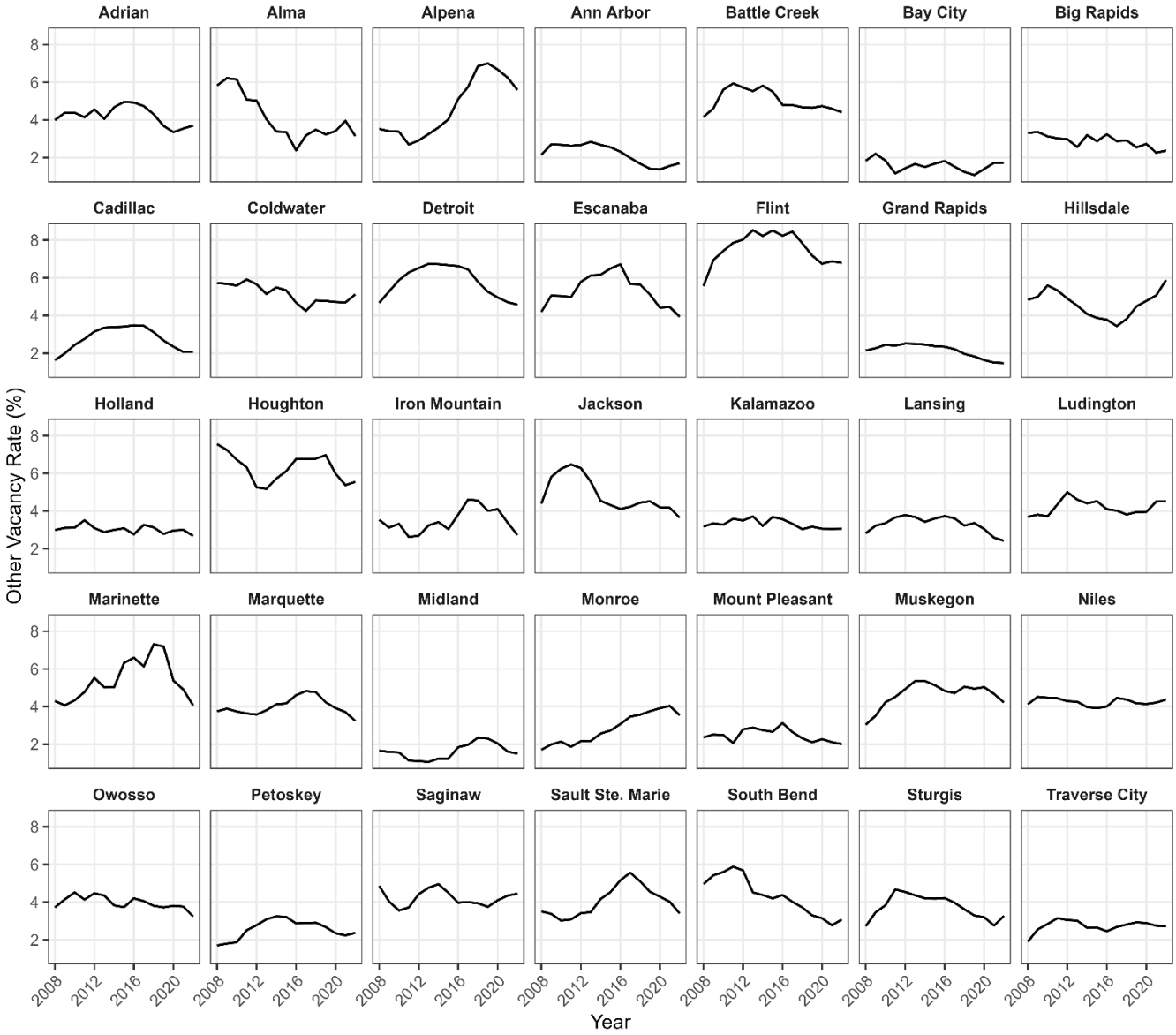
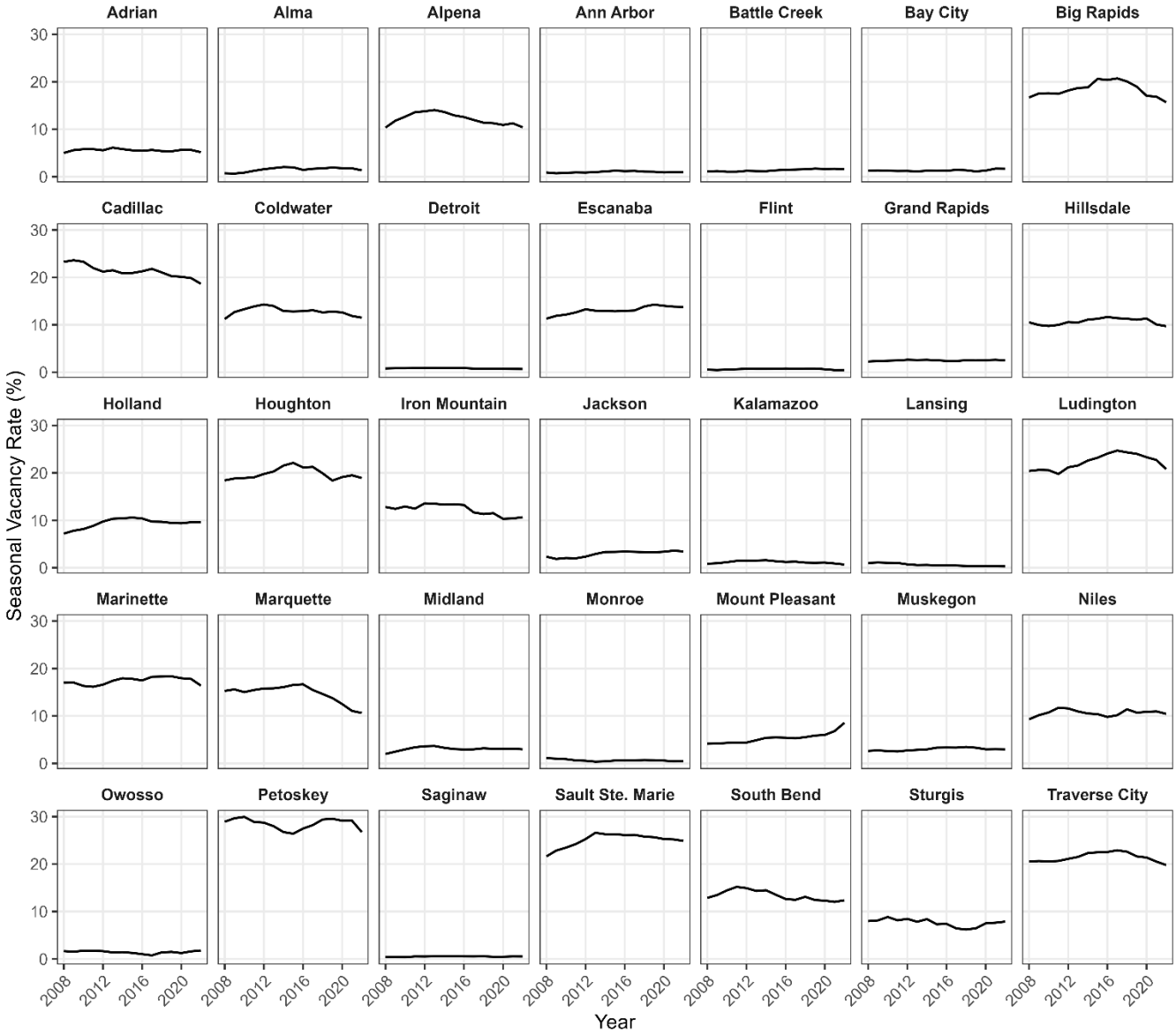


Figure A.4. Temporal Changes in Vacancy: Seasonal Housing Units



Appendix B: Housing Development Constraints: Regulatory Content, Implementation, and Perceived Difficulty

Introduction

Academic and policy debates about housing shortages frequently assume that insufficient supply is driven, at least in part, by restrictive regulations and burdensome development processes (E. Glaeser & Gyourko, 2017; E. L. Glaeser et al., 2006; Knaap et al., 2007; May, 2005; Pendall et al., 2022). Media coverage on housing supply gaps consistently restates these assumptions (Mcvicar, 2025; Moore, 2023). However, the analysis presented here did not find clear evidence of widespread housing supply gaps. This raises an important question for policy and planning practice: if housing supply gaps are not widespread, what influences the overall perception of regulatory barriers as constraints to development? If regulatory barriers are overstated, reforms focused solely on deregulation may be misdirected; if they are real but uneven, more targeted interventions may be needed. This Appendix examines how different actors perceive regulatory content and implementation in Michigan communities, and how those perceptions relate to whether new housing development is perceived by public officials as being easy or difficult.

Methods

This Appendix analyzes survey data collected from public officials and private planning consultants regarding housing development processes. The survey instruments were developed and administered with support from the MAPPR grant and were distributed via the Michigan Association of Planning listserv in January 2026. The dataset includes responses from 119 public officials and 31 private planning consultants, though valid sample sizes vary by question due to item nonresponse. The public official survey captures perspectives on housing development processes and conditions within their jurisdictions, while the consultant survey captures perspectives on factors affecting their clients—who may include local governments, developers, or other stakeholders across multiple jurisdictions. Throughout this analysis, our primary dependent variable is the "perceived ease of housing development," measured dichotomously ("easy to develop" vs. "difficult to develop").

Two key independent variables capture perceptions of regulatory environments: (1) the content of regulations (5-point ordinal scale from very lenient to very strict), and (2) the application of regulations (5-point ordinal scale from very inconsistent to very consistent). To make interpretation easier, the answers are collapsed to 3-point scales for cross-tabulations, but the original coding is used for logistic regression. Additionally, we assess perceived priority trade-offs (e.g., environmental protection, political opposition, commercial development, growth control).

Analytical methods include descriptive statistics (frequencies and valid percentages), bivariate analysis using cross-tabulations and chi-square tests, and binary logistic regression. Crosstabs assess associations between perceived development difficulty and both regulatory content and implementation consistency. Pearson chi-square tests evaluate statistical significance. Logistic regression models estimate the independent effects of regulatory content and implementation on

development difficulty. To account for differences in subgroup size, responses to "select all that apply" items are compared using percentages within each group (easy vs. difficult development).

Results

Descriptive Findings

Public officials (n = 119) are nearly evenly split on whether new housing is easy or difficult to develop, though a slight majority report that it is difficult (55.1%) compared to easy (44.9%). This indicates meaningful variation in perceived development conditions across Michigan communities.

Complementary evidence from the separate survey of private planning consultants (n = 31) reinforces this pattern while broadening the set of perceived constraints beyond regulations alone. Consultants were asked to identify up to five primary factors, from a list of 24 factors, that discourage clients from building additional housing. Among all factors, rising construction costs was the most commonly cited barrier (54.8%), followed by community opposition to new housing (45.2%). Development approval processes (38.7%), infrastructure availability or costs (38.7%), and broader economic uncertainty (35.5%) were also frequently cited, along with regulatory requirements and compliance (32.3%). Together, these responses indicate that while regulatory processes are salient, they are part of a broader set of constraints that includes market conditions and local political dynamics.

Additional results from the consultant survey further clarify the relative importance of these constraints. When asked to rank six broad categories of factors discouraging new housing development, respondents identified costs and resource constraints (e.g., materials, labor, insurance) as the most significant barrier (M = 2.45, SD = 1.572, mode = 1), followed by financing and economic conditions (M = 2.90, SD = 1.472, mode = 2) and community and political factors (M = 2.93, SD = 1.486, mode = 3). Local regulations ranked lower (M = 3.45, SD = 1.617, mode = 4), while market demand (M = 4.59, SD = 1.593, mode = 6) and land and location constraints (M = 4.69, SD = 1.257, mode = 5) were least likely to discourage development.

When examining specific regulatory components, most were perceived to increase project time and costs only minimally or moderately. For example, zoning and land use regulations, environmental review, design review, and building code compliance were most frequently associated with minimal to moderate impacts. In contrast, 50% of respondents indicated substantial increases in time and cost due to approval timelines and delays. Similarly, organized citizen opposition was frequently identified as a major contributor to project time and costs, with 48% reporting substantial impacts. These results suggest that administrative delays and political processes—rather than regulatory content alone—are key drivers of project-level constraints.

Bivariate Relationships

Cross-tabulations indicate significant relationships between perceptions of housing development difficulty and both the strictness of regulatory content and the consistency of regulatory implementation. The association between development difficulty and regulatory content was statistically significant (χ^2 = 7.72, df = 2, p = .021). Table B.1 shows that communities described as

"difficult to develop" were substantially more likely to report strict regulatory content, with 53.1% falling into the "strict" category compared to 27.5% among communities described as "easy to develop." In contrast, communities perceived as easy to develop were more likely to report neutral or lenient regulatory content, including 47.1% categorized as neutral and 25.5% as lenient.

Similarly, the relationship between development difficulty and regulatory implementation (see Table B.2) was statistically significant, (χ^2 = 6.66, *df* = 2, *p* = .036). Among respondents reporting that housing development is easy, 83.0% characterized regulatory implementation as consistent, compared to 60.3% among respondents reporting that development is difficult. Conversely, inconsistent implementation was reported by 22.2% of respondents in difficult development contexts, compared to 10.6% in easy contexts. Together, these findings suggest that both the substance of regulations and the predictability with which they are applied are associated with perceived ease of housing development.

			Content (3-point scale)			
			Lenient	Neutral	Strict	Total
In this community, is developing new housing easy or difficult?	Easy to develop	Count	13	24	14	51
		%	25.5%	47.1%	27.5%	100.0%
	Difficult to develop	Count	10	20	34	64
		%	15.6%	31.3%	53.1%	100.0%
Total		Count	23	44	48	115
		%	20.0%	38.3%	41.7%	100.0%

Table B.1. Crosstabulation: Perception of Development Difficulty and Perception of the Content of Regulations

			Implementation (3-point scale)			
			Inconsistent	Neutral	Consistent	Total
In this community, is developing new housing easy or difficult?	Easy to develop	Count	5	3	39	47
		%	10.6%	6.4%	83.0%	100.0%
	Difficult to develop	Count	14	11	38	63
		%	22.2%	17.5%	60.3%	100.0%
Total		Count	19	14	77	110
		%	17.3%	12.7%	70.0%	100.0%

Table B.2. Crosstabulation: Perception of Development Difficulty and Perception of the Implementation of Regulation

Multivariate Results: Logistic Regression

A logistic regression model was estimated to assess the independent effects of regulatory content and implementation on perceived development difficulty. The model was statistically significant (χ^2 = 15.415, *df* = 2, $p < .001$), indicating that the predictors jointly improve model fit.

When considered simultaneously in the multivariate model—rather than examined separately in the prior chi-square analyses—both predictors are statistically significant, indicating that each has an independent association with perceived development difficulty. Regulatory content has a positive effect ($B = 0.728$, $p = .002$), with an odds ratio of 2.071, indicating that each increase in regulatory strictness more than doubles the odds of reporting development as difficult. Regulatory implementation has a negative effect ($B = -0.519$, $p = .010$), with an odds ratio of 0.595, indicating that more consistent application reduces the odds of difficulty by approximately 40%. Pseudo R^2 values (Cox & Snell = .131; Nagelkerke = .176) suggest modest explanatory power.

Priority Trade-offs

Public officials report that housing supply is often balanced against other priorities. For environmental protection, responses are distributed across categories, with 27.8% indicating "about equal priority" with housing supply, while 24.4% report somewhat higher and 13.3% much higher priority than housing supply (37.7% higher overall, compared to 34.4% lower). Similar patterns appear for political opposition and commercial development. For political opposition, "about equal priority" with housing supply is the most common response (30.9%), but a substantial share indicates higher priority (32.1% somewhat higher and 13.6% much higher; 45.7% higher overall). For commercial development, nearly half of respondents (47.2%) report equal priority, with an additional 32.6% indicating higher priority.

Growth control stands out somewhat, with a larger share of respondents indicating it is prioritized above housing supply. Specifically, 31.8% report somewhat higher and 8.0% much higher priority (39.8% total higher), compared to 26.1% indicating equal priority.

Collectively, these findings suggest that development outcomes are shaped by competing policy goals, not just regulatory constraints. Even where regulations are not especially restrictive, housing development may still be limited as local decision-makers balance it against environmental protection, political opposition, and non-residential development—treating housing as one of several co-equal priorities rather than a dominant objective. As a result, regulatory reform alone may not substantially increase housing supply in some contexts.

Conclusion and Policy Implications

The results suggest a more nuanced interpretation of regulatory barriers than is often assumed in academic and policy debates. While stricter regulatory content is clearly associated with greater perceived difficulty in housing development, the overall distribution of responses indicates that most communities are not characterized by uniformly restrictive environments. Instead, many fall near the middle of the regulatory spectrum. At the same time, consistent regulatory implementation appears

to mitigate perceived barriers, highlighting the importance of administrative processes alongside formal rules.

The findings reported in the main text and those from the survey complicate the common narrative that regulations broadly constrain housing supply. If, as we demonstrate in the main text, supply gaps are not widespread, yet practitioners still perceive development as difficult, this suggests a potential disconnect between measurable housing outcomes and the public policy discourse regarding housing supply. Evidence from private planning consultants further reinforces this point, indicating that cost pressures, community opposition, and economic uncertainty are at least as prominent as regulatory barriers in shaping development decisions. Ranking results from consultants further suggest that regulations are not the primary constraint relative to construction costs and financing conditions, and that within the regulatory domain, delays associated with approval timelines and organized opposition are more consequential than regulatory requirements themselves.

These findings point to several implications for policymaking and planning practice. First, attention should shift from a singular focus on deregulation to a more balanced approach that also prioritizes administrative capacity, interdepartmental coordination, and procedural clarity. The consistent association between implementation and the perceived difficulty of development suggests that improvements in how regulations are applied may yield meaningful gains without substantial changes to regulatory content. Second, the prominence of competing priorities—such as environmental protection, political opposition, and growth control—indicates that housing supply decisions are embedded within broader planning trade-offs. Efforts to increase housing production must therefore engage these competing goals directly, rather than assume that regulatory reform alone will resolve constraints.

Finally, the findings point to the importance of distinguishing between perception and measurable housing outcomes. While perceptions of difficulty are consequential—shaping behavior, investment, and policy discourse—they do not necessarily align with objective indicators of supply shortage. For researchers and practitioners, this underscores the need to integrate perception-based data with empirical measures of housing production and market conditions when diagnosing housing challenges and designing policy responses.

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