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Housing Prices and Birth Outcomes: The Hidden Cost of a Home

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Abstract

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Housing prices are a key indicator of local economic conditions, yet their relationship with infant health remains heavily underexplored. This paper investigates how county-level fluctuations in housing prices from 2010 to 2018 are associated with birth outcomes. Using a two-way fixed effects model, I estimate the effect of housing prices on birthweight and gestational age, as well as the probability of low birthweight and preterm birth. Results suggest that rising home values are modestly associated with increases in birthweight and gestational age and a reduced likelihood of low birthweight, with no significant effect on preterm birth. These associations vary by maternal race and local inequality levels, with stronger effects observed for Black and non-White mothers and in counties with higher income inequality. The findings highlight the potential role of housing prices as an economic determinant of birth outcomes and underscore the need for further research into the mechanisms linking local housing markets to infant health.

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Housing Prices and Birth Outcomes: The Hidden Cost of a Home

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1 Introduction

Housing markets are a fundamental driver of economic stability and public health, influencing financial security, neighborhood conditions, and long-term well-being. While housing prices have traditionally been viewed as an economic issue, growing evidence suggests they are also a key determinant of health disparities (Swope and Hernández 2019). The United States (U.S.) has undergone significant shifts in the housing market, particularly in the post-Great Recession era, when housing prices plummeted by 20% and widespread foreclosures destabilized communities (Aruoba et al., 2022). These economic disruptions have had far-reaching consequences for household stability, fertility rates, and birth outcomes (Cherlin et al., 2013; Finch et al., 2019).

Low-income individuals are disproportionately affected by housing challenges, often experiencing compromised health outcomes due to financial strain. According to the National Low Income Housing Coalition, approximately 70% of extremely low-income households- those earning at or below 30% of the area median income- spend more than half their income on rent, leaving little for healthcare, prenatal services, and adequate nutrition (Aurand,

2024). Housing insecurity has also been linked to adverse maternal and birth outcomes, including poor maternal health and low birth weight (Cutts et al., 2011; Hock et al., 2024; Reece, 2021). These adverse birth outcomes, specifically preterm birth and low birthweight, increase the likelihood of developmental delays, chronic health conditions, and long-term socioeconomic disadvantages (Blumenshine et al., 2010). As economic inequality continues to rise, the effects of housing market instability will likely exacerbate health disparities, disproportionately affecting the most vulnerable populations.

This study examines whether fluctuations in county-level housing prices following the Great Recession are associated with changes in infant birth weight and gestational age. Additionally, it examines the effects of housing prices on the probability of low birthweight and preterm birth- two of the most severe indicators of neonatal health risk. Given the stark variation in housing prices across counties, the U.S. provides an ideal setting for investigating these relationships. This analysis builds on the work of Daysal et al. (2021), who provide the first direct estimates of the effect of housing prices on birth outcomes in Denmark. Their findings suggest that rising home values are associated with reductions in low birthweight and prematurity, though much of this effect appears to be driven by changes in the composition of births rather than direct improvements in neonatal health. Similarly, I hypothesize that rising home values are associated with improved birth outcomes, as they may reflect greater economic stability and increased access to healthcare and neighborhood resources. However, housing price growth may also introduce financial strain, displacement, and barriers to prenatal care for economically vulnerable populations. To account for this complexity, this study examines whether the association between housing prices and birth outcomes varies systematically by county-level economic conditions and maternal demographic characteristics, offering insight into the potential pathways underlying these relationships.

To analyze this relationship, I use housing price estimates from the American Community Survey (ACS) and birth certificate data to study infants born between 2010 and 2018. The dataset includes maternal characteristics such as age, education level, and race, allowing for an exploration of potential heterogeneous effects across different subpopulations. This

study employs a two-way fixed effects model to estimate how changes in housing prices over time are associated with birth outcomes. County-level fixed effects control for time-invariant county characteristics, such as geography and long-term economic conditions, while year-fixed effects account for nationwide trends affecting all counties simultaneously. This design primarily captures county fluctuations in housing prices over time, allowing for a comprehensive assessment of the relationship between housing market trends and birth outcomes.

The findings indicate that a 1% increase in home value is associated with a 0.009% increase in birth weight and a 0.003% increase in gestational age. Similarly, a 1% increase in home value is associated with a statistically significant 0.00005 percentage point reduction in the probability of low birthweight. These relationships remain statistically significant after controlling for individual-level maternal covariates as well as state-fixed effects. While the effect sizes are moderate, they suggest that housing prices play a role in shaping birth outcomes. These associations appear to vary by economic context; in high-inequality regions, a 1% increase in home value is linked to a 0.00005 percentage point reduction in the probability of low birthweight. Similarly, counties with median incomes below the national average exhibit a 0.00005 percentage point reduction in the probability of low birthweight. One possible explanation is that rising home values in these regions signal neighborhood investment, improved infrastructure, and better healthcare access, all of which may contribute to healthier birth outcomes (Chetty et al., 2016). Racial disparities are also evident, with the association between home values and birthweight being stronger for Black (0.012%) and non-White (0.015%) mothers than for White mothers (0.008%). The reduction in the probability of low birthweight is only statistically significant among Black (0.00013 percentage point) and non-White (0.00016 percentage point) mothers. This pattern may reflect the fact that historically marginalized racial groups derive greater benefits from rising home values due to long-standing inequities in homeownership, neighborhood investment, and economic security (Hess et al., 2022). Further research is needed to explore these mechanisms and assess whether housing price fluctuations primarily reflect improvements in living conditions.

Broadly, this study contributes to the growing literature on housing markets and birth

outcomes by reframing housing prices as an economic indicator of health, employing a rigorous empirical strategy to mitigate confounding bias, and exploring how these relationships differ across population subgroups. While rising home values may signal greater economic stability for some, they may also exacerbate existing disparities in access to housing and essential resources. Understanding the role of housing prices in birth outcomes disparities provides valuable insights for policymakers seeking to mitigate the unintended consequences of housing market fluctuations on public health.

2 Literature and Context

2.1 Literature on housing and birth outcomes

A growing body of research examines the short- and long-term effects of housing on birth outcomes, particularly among vulnerable populations. This literature highlights the consequences of substandard housing conditions and housing instability on health outcomes. In the short term, these environmental stressors contribute to infections, respiratory illnesses, and other health complications. Over the long term, poor housing conditions are associated with adverse birth outcomes, including low birth weight, shortened gestational age, and increased infant mortality. This expanding research field seeks to understand both the direct impact of housing conditions on birth outcomes- particularly in regions with pronounced social and economic inequalities- and the broader, lifelong consequences of these environments on health. Despite the breadth of research on housing and birth outcomes, there remains a critical gap in understanding the role of housing prices as determinants of birth outcomes. Most prior studies have focused on housing affordability, substandard conditions, and instability- examining how factors such as rent burden, housing quality, and eviction affect birth outcomes. While these studies have firmly established links between housing and birth outcomes, they do not fully capture the role of housing prices as an economic indicator that shapes maternal and birth outcomes through distinct mechanisms beyond affordability alone.

An extensive body of research has analyzed the relationships between housing and birth outcomes. In a systematic review, Ramphal et al. (2023) found that degraded housing conditions are directly linked to adverse birth outcomes. Similarly, Rani and Dhok (2023) demonstrated that exposure to environmental toxins such as lead and air pollutants exacerbates infant health risks, contributing to developmental delays and chronic health issues later in life. Beyond physical housing conditions, housing instability itself is increasingly recognized as a major determinant of birth outcomes. At the county level, Khadka et al. (2020) reported that higher rates of eviction case filings during pregnancy were associated with an increased risk of prematurity and low birth weight. Geographic disparities also play a role, with Ehrenthal et al. (2020) finding that higher infant mortality rates in rural counties are best explained by greater socioeconomic disadvantage. Furthermore, the long-term effects of homelessness on birth outcomes persist well beyond birth. Clark et al. (2019) found that infants born to homeless mothers experience elevated rates of asthma, higher emergency department visit rates, and increased healthcare spending that continues through at least age six.

Unlike prior research that examines affordability as a household-level burden, this study takes a macro-level approach, assessing how county-level housing price fluctuations are associated with birthweight and gestational age. This distinction is important, as rising home values may indicate greater economic stability for some while simultaneously increasing financial strain and displacement risks for others, particularly in economically stratified regions. By leveraging county-level variation in housing prices over time, this study provides new insight into the economic determinants of birth outcomes beyond traditional measures of housing.

Housing prices can function as a broader economic signal, reflecting changes in wealth accumulation, neighborhood desirability, and economic displacement- all of which may shape maternal and birth outcomes through distinct pathways. The U.S. Department of Housing and Urban Development's study highlights that families burdened by high housing costs face trade-offs that compromise maternal and child health, including reduced access to nu-

tritious food, healthcare, and childcare. Yet, few studies have explored how shifts in housing prices at the county-level impact birth outcomes at a population scale. Housing policies such as the Ohio Healthy Beginnings at Home program and Boston's Health Start in Housing initiative have demonstrated the benefits of stable, affordable housing for maternal and infant health, but the broader implications of market-driven housing price fluctuations remain underexplored. Understanding these dynamics is critical for policymakers designing interventions that mitigate the unintended consequences of rising housing costs. By filling this gap, this study expands our knowledge of the relationship between housing markets and health, offering evidence that can inform both economic and public health policies.

2.2 Housing prices as a determinant of birth outcomes

Housing prices serve as a key economic indicator shaped by supply and demand dynamics, reflecting regional economic conditions and wealth accumulation. Rising home values often signal stronger local economies, increased demand, and constrained housing supply, while declining prices may indicate economic downturns, reduced demand, or market instability (Case and Shiller, 2003). Housing prices also contribute to household wealth accumulation, particularly for homeowners, as rising values increase home equity and borrowing capacity (DiPasquale and Wheaton, 1992). This aligns with the Wealth Effect, where rising property values boost consumer confidence and spending, which can influence broader economic stability (Mian and Sufi, 2014). However, for households with limited financial flexibility, higher housing prices may impose greater financial constraints. These dynamics can have downstream effects on maternal and child well-being through increased cost burdens or reduced local affordability (Fisher and Gervais, 2011). Additionally, rising housing prices can contribute to gentrification, where long-term residents- particularly low-income and minority households- are displaced from their communities due to increasing costs (Freeman, 2005). The Spatial Mismatch Theory suggests that such displacement can isolate low-income families from job centers, healthcare, and social support (Kain, 1968).

In this study, county-level housing prices serve as a proxy for local economic conditions

that may shape birth outcomes. Unlike prior research focusing on affordability, eviction, or housing instability, this study emphasizes median home values as a broader economic signal tied to community-level wealth, investment, and financial security. By leveraging variation in housing prices over time and across counties, this analysis investigates how economic conditions correlate with birth outcomes, particularly for marginalized populations.

2.3 Pathway between housing and birth outcomes

Building on the theoretical framing above, this section outlines three potential mechanisms through which housing price fluctuations affect: poor housing conditions, neighborhood effects, and housing affordability.

The first mechanism, housing conditions, refers to exposure to toxins, mold, pests, poor air quality, and overcrowding, all of which have been identified as significant determinants of maternal and infant health (Reece, 2021). Chu et al. (2015) found that inadequate housing conditions increase the risk of sleep-related injury deaths among infants. Degrading housing conditions, particularly in low-income and racially segregated communities, exacerbate health disparities and increase the likelihood of adverse birth outcomes. The second mechanism, neighborhood effects, encompasses crime rates, resource deprivation, and social capital, all of which shape maternal and infant health. The external environment surrounding housing-including access to healthcare, nutritious food, and community support- plays a critical role in shaping health outcomes (Forum on Aging, Disability, and Independence). Mason et al. (2009) found that high rates of economic deprivation in racially segregated neighborhoods are strongly associated with preterm birth. Similarly, Osypuk and Acevedo-Garcia (2008) demonstrated that Black infants born in areas with high levels of segregation had significantly higher preterm birth rates compared to Black infants in less segregated communities. Additionally, Mason et al. (2009) found that high neighborhood crime rates can directly contribute to preterm birth by increasing maternal stress and limiting access to essential prenatal care. The third pathway, housing affordability and stability, is shaped by fluctuations in housing prices, which can increase financial strain, evictions, and displace-

ment. Families experiencing unstable housing conditions, evictions, or severe cost burdens face increased maternal stress, which has been linked to poorer birth outcomes. Sandel et al. (2018) found that families experiencing serious housing deprivation were more likely to report poor caregiver health, maternal depressive symptoms, and adverse child health outcomes. Cutts et al. (2018) demonstrated that homelessness during infancy is associated with both poor infant health and deteriorating maternal physical and mental health. Furthermore, frequent moves during pregnancy have been linked to lower birth weight and poorer maternal mental health outcomes (Carrion, 2015). These housing inequalities are further exacerbated by racial and economic segregation, particularly in low-income neighborhoods where families face limited access to stable, affordable housing.

These three pathways reinforce the idea that housing prices may affect birth outcomes through both direct material conditions and broader economic pressures. While this study focuses on median home values, these mechanisms help contextualize the possible channels through which market fluctuations shape health disparities.

2.4 Housing inequality in the United States

The Great Recession of 2007–2009 profoundly reshaped the U.S. housing landscape, triggering a 33% decline in housing prices and displacing nearly 10 million Americans through foreclosures (Weinberg, 2013). While the economy eventually recovered, the housing market did not rebound evenly, leaving long-lasting affordability challenges and deepening economic inequality. Homeownership rates for the bottom 90% of earners saw little to no recovery from 2007 to 2016, highlighting the disproportionate burden on lower-income households (Dettling et al. 2018). Today, median home prices are nearly six times the median income, a sharp increase from historical norms, making housing increasingly unaffordable for millions (Freddie Mac Research).

The post-recession housing supply deficit has only exacerbated this crisis. New housing construction has plummeted, with fewer homes built in the decade leading up to 2018 than in any 10 years since the 1960s (Freddie Mac Research). This shortage, combined with rising

housing costs, has contributed to increasing homelessness, with an estimated 250,000 Americans unhoused in 2023 (Soucy et al., 2015). These dynamics underscore the importance of housing prices as a key indicator of economic inequality- not only do they reflect affordability pressures, but they also serve as a critical measure of who has access to stable housing and long-term wealth accumulation. Rising housing costs can disproportionately impact first-time buyers and low-income households, reinforcing broader socioeconomic disparities. Accordingly, this study uses county-level median home values as a proxy for local economic conditions, capturing structural dimensions of wealth, stability, and inequality that may influence maternal health and birth outcomes.

2.5 Birth outcomes

Birth outcomes are widely regarded as key indicators of a society's overall well-being, reflecting broader socioeconomic conditions, healthcare access, and systemic inequities. While infant mortality rates (IMR) in the United States have declined over time, persistent racial, socioeconomic, and geographic disparities highlight the unequal conditions into which children are born. Jang and Lee (2018) found that non-Hispanic Black infants had an IMR of 10.8 per 1,000 live births, more than double the rate of White infants (4.6) and nearly triple that of Asian infants (3.6). Further, Black and Hispanic preterm infants are disproportionately born in hospitals with higher rates of morbidity and mortality, suggesting systemic inequities in perinatal care. Dagher and Linares (2022) found that maternal socioeconomic status further compounds these disparities: infants born to mothers with less than a high school education face a 135% higher mortality risk than those born to college-educated mothers. These disparities are not isolated phenomena but are deeply connected to structural inequalities in healthcare access, economic security, and neighborhood conditions.

Among these structural factors, housing prices represent a critical but understudied determinant of birth outcomes. Housing costs shape where families can afford to live, influencing access to high-quality healthcare, stable housing, and supportive community resources. This study examines how fluctuations in housing prices impact birth outcomes while account-

ing for the intersecting roles of maternal education, race, and age. By investigating these relationships, this research provides insight into how demographic differences contribute to persistent disparities in birth outcomes and informs policies aimed at improving health equity across populations.

3 Data

This paper combines county-level housing data from the American Community Survey (ACS), an ongoing national survey conducted by the U.S. Census Bureau, with birth certificate records containing information on birth weight, gestational age, maternal education, maternal age, and maternal race.

3.0.1 Data on housing prices

To measure county-level housing conditions, I use ACS 5-Year Estimates for the period 2010-2018. The ACS 5-Year Estimates aggregate data collected over five years, offering greater statistical reliability for smaller populations and reducing short-term fluctuations in housing market trends. These estimates are preferred over ACS 1-Year Estimates, which are more volatile and less precise for capturing longer-term housing dynamics. The sample is restricted to 2010-2018 to focus on the post-Great Recession (2007-2009) period while avoiding COVID-19-related economic disruptions that could confound housing trends after 2018.

Housing prices are measured using county-level median home values, a standard metric in urban and economic research (Hipp, 2023). Since birth records are available at the county-level, this geographic alignment ensures consistency between housing price data and birth outcomes. However, ACS median home values rely on self-reported estimates from homeowners, rather than transaction-based indices, which may introduce biases due to overestimation or lagged market adjustments. Research suggests that homeowners may overestimate property values, particularly during periods of declining home prices, but these discrepancies tend to be moderate, averaging 3-8% (Benitez-Silva et al., 2015; Kiel and Zabel, 1999).

Although pregnancy is a nine-month process, prior research examining economic conditions and birth outcomes has similarly relied on annual indicators, as broader economic trends shape maternal stress, financial stability, and access to prenatal resources throughout pregnancy (Aizer et al., 2016). Studies on in-utero exposure to economic shocks have found that financial strain during pregnancy, particularly in the second and third trimesters, plays a significant role in birth outcomes (Lindo, 2011). Given that housing market conditions evolve gradually and influence residential stability and neighborhood resources over time, annual housing price measures remain an appropriate proxy for the broader economic environment affecting maternal health and birth outcomes.

Figure 1 presents the percent change in county-level median home values from 2010 to 2018, illustrating how housing prices evolved during this period. The figure highlights the continued recovery of housing prices following the Great Recession, with prices reaching their lowest point around 2013-2014 before rebounding sharply in later years. This trend is relevant to this study, as families who experienced housing cost burdens during the market recovery may have faced greater financial stress, potential displacement, and limited access to maternal healthcare resources. To assess the robustness of findings, Section 7 also explores alternative measures of housing conditions, including housing burden rate and homeownership rates.

3.0.2 Data on county-level characteristics

County-level economic conditions are measured using median household income and the Gini coefficient, both obtained from the ACS 5-Year Estimates. Median household income reflects the economic resources available within a county, while the Gini coefficient captures income inequality, with higher values indicating greater economic disparity. Table 1 presents the distribution of median household income and the Gini coefficient across counties in the sample from 2010 to 2018. Over this period, median income has steadily increased, but income inequality has remained relatively stable. Median household income consistently fell below the national median throughout the study period. These measures will be used in

the heterogeneity analysis (Section 6) to examine whether the relationship between housing prices and birth outcomes varies by county economic conditions.

3.0.3 Data on birth outcomes

Data on birth outcomes, specifically birthweight and gestational age, are obtained from restricted Natality birth records within the National Vital Statistics System (NVSS). These indicators, along with low birthweight and preterm birth, are widely used in research on neonatal health, infant mortality risk, and long-term health outcomes. Figure 2 illustrates the percent change in birthweight and gestational age from 2010 to 2018. Over this period, birthweight and gestational age show a slight decline. Table 2 presents the summary statistics for both outcomes, highlighting slightly more variations in birthweight than gestational age over time. Given the robustness of these indicators and their established role in maternal and infant health research, birthweight and gestational age serve as the primary continuous outcomes in this analysis, while the probability of low birthweight and preterm birth are examined as key clinical risk factors for adverse neonatal outcomes.

3.0.4 Data on maternal socioeconomic factors

Information on maternal characteristics, including race, age, and educational attainment, is obtained from restricted Natality birth records within the NVSS. These socioeconomic factors provide insight into disparities in birth outcomes and allow for an examination of how maternal demographics influence the relationship between housing prices and birth outcomes. Table 3 presents maternal characteristics across 2010-2018, showing a gradual increase in maternal age and educational attainment over time. Educational attainment is categorized as high school or less and more than high school. The race variable adheres to U.S. Census classifications, categorizing mothers as White, Black, Asian, or American Indian/Alaska Native. The racial composition of births remains relatively stable, with White mothers representing the majority of births, though the proportion of non-White mothers increased slightly after 2014. To further explore potential disparities, I examine whether the

effects of housing prices on birth outcomes differ by maternal demographic characteristics in Section 6.

4 Methods

To estimate the relationship between housing prices and birth outcomes, I use a log-log regression model for continuous outcomes and a semi-log linear probability model for binary outcomes with county- and year-fixed effects. This approach accounts for time-invariant county characteristics, such as historical economic conditions and healthcare infrastructure, as well as national-level shocks that may influence birth outcomes. By including county-fixed effects, I control for differences between counties that do not change over time, while year-fixed effects account for broader national trends, such as policy changes or economic shocks.

The key identifying assumption is that, after accounting for these fixed effects and controlling for maternal and infant characteristics, the remaining variation in housing prices across counties and over time is not systematically correlated with unobserved determinants of birth outcomes. This means that fluctuations in median home values across counties over time capture economic shifts that are not fully explained by other factors affecting birthweight and gestational age. To address potential serial correlation and heteroskedasticity in housing prices and birth outcomes within counties, standard errors are clustered at the county level.

This study examines two continuous primary birth outcomes, birthweight (in grams) and gestational age (in weeks), and two binary variables, low birthweight (defined as leq 2,500 grams) and preterm birth (defined as < 37 weeks). Since low birthweight and preterm birth are strongly associated with infant mortality, developmental delays, and long-term health risks, incorporating them into the analysis allows for a more comprehensive assessment of how housing prices influence both average birth outcomes and severe neonatal conditions. For continuous outcomes, I estimate the following log-log model:

$$\ln(Y_{ict}) = \alpha + \beta_1 \ln(HomeValue_{ct}) + \gamma_c + \delta_t + X_i\Gamma + \epsilon_{ict}$$

For binary outcomes, I estimate a semi-log linear probability model:

$$P(Y_{ict} = 1) = \alpha + \beta_1 \ln(HomeValue_{ct}) + \gamma_c + \delta_t + X_i\Gamma + \epsilon_{ict}$$

For the continuous outcomes, the dependent variable, $\ln(Y_{ict})$, represents the natural log of the birth outcome- birthweight or gestational- for newborn i, born to a mother in county c in year t. For the binary outcomes, the dependent variable, $P(Y_{ict} = 1)$, represents the outcome- preterm or low birthweight- for newborn i, born to a mother in county c in year t.

The primary independent variable, $\ln(HomeValue_{ct})$, is the natural log of the median county-level home value in year t, capturing the relationship between local housing prices and birth outcomes. Table 4 presents a comparison of regressions with and without county-fixed effects to assess their impact on the estimated relationship between housing prices and birth outcomes. The results indicate that the coefficient on home value remains relatively stable across specifications, suggesting that unobserved, time-invariant county characteristics do not substantially bias the estimated effect of housing prices on birthweight and gestational age. I focus on individual-level controls, represented by the vector X_i, which includes maternal and child characteristics: the child's sex, mother's age, mother's education level, and mother's race. These covariates help account for demographic and socioeconomic factors that influence birth outcomes.

5 Results

In this section, I present the results of estimations using the models identified in Section 4, examining the relationship between county-level home values and birth outcomes.

5.0.1 Birthweight and low birthweight results

Table 5 presents estimates for the effect of home values on birth weight, controlling for county- and year-fixed effects, as well as individual-level characteristics. In Column (1), a 1% increase in home value is associated with a 0.008% increase in birth weight. In Column (2), the inclusion of the child's sex, maternal age, education, and race slightly increases the magnitude of this relationship to 0.009%, suggesting that home values exert an independent effect on birth weight beyond socioeconomic factors. Column (3) introduces state-fixed effects, and the coefficient remains unchanged, reinforcing the robustness of the association. Results for low birthweight as the outcome variable also point to a statistically significant association, where a 1% increase in home value is associated with a 0.00005 percentage point reduction in the probability of low birthweight. This relationship remains stable after the inclusion of state-fixed effects.

These parallel findings suggest that rising home values are linked to improvements in both average birthweight and reductions in severe birth outcomes; however, the effect sizes are extremely modest and may not translate into clinically meaningful changes at the individual level. The small increase in average birthweight may reflect marginal improvements in maternal well-being, access to prenatal care, or reduced financial stress. Similarly, the slight reduction in low birthweight may correspond to fewer extreme adverse outcomes, such as intrauterine growth restriction or delivery complications (Hack et al., 1995). These patterns align with prior literature highlighting the influence of neighborhood and economic conditions on early-life health outcomes. Nevertheless, the underlying mechanisms remain unclear. The observed associations could stem from improved housing quality or greater access to neighborhood resources accompanying rising property values. Alternatively, compositional shifts—such as the in-migration of healthier or more affluent families may contribute to the patterns observed. While this study identifies a statistically robust association, the practical significance is limited, and further research is needed to better understand and quantify the mechanisms driving these subtle changes.

5.0.2 Gestational age and preterm birth results

Table 6 reports estimates for the relationship between home values and gestational age. In Column (1), a 1% increase in home value is associated with a 0.0033% increase in gestational age. After controlling for maternal and child characteristics in Column (2), the coefficient remains stable at 0.0032%, and adding state-fixed effects in Column (3) slightly reduces it, though the relationship remains statistically significant. While this effect is smaller than that observed for birth weight, several factors could explain the difference. Gestational age is biologically constrained, meaning that there is a natural limit on how much pregnancy length can be extended, even under improved socioeconomic conditions (Goldenberg et al., 2008). Unlike birth weight, which can respond more flexibly to nutritional and environmental changes, gestational duration is largely determined by physiological factors that regulate labor onset. Additionally, prior research suggests that maternal stress, housing instability, and environmental factors are more likely to be associated with preterm birth than with extended gestation (Cutts et al., 2015; Saigal and Doyle, 2008).

However, results indicate no significant association between home values and the probability of preterm birth. These findings suggest that higher home values may be linked to small increases in gestational age on average, but they do not appear to influence the probability of preterm birth. The relatively small effect size further suggests that broader socioeconomic and medical conditions likely play a stronger role in determining gestational duration, rather than housing prices alone.

6 Heterogeneity analysis

To identify potential pathways that could explain the relationship between housing prices and birth outcomes, I examine differences in effects across both individual-level and county-level characteristics.

6.1 Individual level heterogeneity

At the individual-level, the effects of housing prices on birth outcomes may vary based on maternal and infant characteristics as shown in Tables 7-9. Racial disparities in birth outcomes have been well-documented, with Black mothers experiencing higher rates of preterm birth and low birth weight due to structural inequities in healthcare and economic stability (Lu and Halfon, 2003). If rising home values signal broader economic improvements, these effects may disproportionately benefit historically marginalized groups by expanding access to resources and reducing financial strain. Additionally, higher maternal education has been linked to better prenatal health behaviors and healthcare utilization (Currie and Moretti, 2003), which could amplify the benefits of rising home values. Infant sex may also influence these relationships; male infants are generally more vulnerable to environmental stressors, including maternal stress and poor prenatal conditions, which can negatively impact birthweight (DiPietro and Voegtline, 2017). If housing price increases are associated with improved maternal health and prenatal care, the positive relationship between home values and birthweight may be stronger for male infants, as they may benefit more from improved living environments.

6.1.1 Maternal Race

Table 7 shows that a 1% increase in home value is associated with a 0.008% increase in birthweight for White mothers, a 0.012% increase for Black mothers, and a 0.015% increase for non-White mothers. While the magnitudes are small, the relative differences suggest that any potential benefits of rising home values may be slightly more pronounced among historically marginalized groups. Similarly, a 1% increase in home value is associated with a 0.00013 percentage point reduction in the probability of low birthweight ($p < 0.1$) for Black mothers and a 0.00016 percentage point reduction for non-White mothers. These marginal associations may reflect neighborhood-level changes—such as improved access to healthcare facilities, reduced environmental hazards, or upgraded infrastructure—that disproportionately benefit communities facing structural disadvantage. Prior research supports the idea

that such improvements are linked to better perinatal health outcomes (Arcaya et al., 2024). However, these patterns could also be driven by differences in baseline conditions, as families in historically disadvantaged communities often face more concentrated exposures to financial stress, limited healthcare access, and environmental risks.

For gestational age, a 1% increase in home value is associated with a 0.002% increase for White mothers, a 0.005% increase ($p < 0.1$) for Black mothers, and a 0.5% increase for non-White mothers. A similar pattern is observed for preterm birth, where a 1% increase in home value is associated with a statistically significant 0.00009 percentage point reduction in the probability of preterm birth ($p < 0.1$) for non-White mothers only. Although these associations are extremely modest, the consistency of the direction across birthweight, gestational age, and preterm birth suggests that rising home values may coincide with small improvements in birth outcomes for the most marginalized groups. Further research is needed to disentangle potential mechanisms, including whether these changes reflect genuine improvements in neighborhood conditions or shifts in population composition.

6.1.2 Maternal Education

In Table 8, a 1% increase in home value is associated with a 0.009% increase in birthweight for mothers with a high school education, while no significant association is observed among other educational groups. Similarly, for gestational age, a significant relationship emerges only for high school–educated mothers, with a 1% increase in home value linked to a 0.004% increase in gestational age. Although the effect sizes are small, these patterns are broadly consistent with findings from Noghanibehambari et al. (2022), who reported that higher maternal education levels were associated with improved birth outcomes.

Among high school graduates, a 1% increase in home value is also associated with a 0.00006 percentage point reduction in the probability of low birthweight. While modest, this association aligns with prior research suggesting that mothers with a high school education may be somewhat better positioned to benefit from neighborhood-level improvements, possibly due to relatively greater access to information, healthcare, or financial stability compared

to those with less education (Noghanibehambari et al., 2022). No significant relationship is found between home values and preterm birth across any educational group, reinforcing the notion that gestational age may be more biologically constrained than birthweight and less sensitive to incremental socioeconomic improvements (Goldenberg et al., 2008).

It is also worth noting that the distribution of maternal education is skewed, with a larger proportion of the sample having completed high school compared to lower levels of educational attainment. This imbalance may affect statistical power, contributing to the absence of significance in smaller subgroups and should be considered when interpreting the results.

6.1.3 Infant Sex

In Table 9, a 1% increase in home value is associated with a 0.009% increase in birthweight for both male and female infants, suggesting similarly small associations across infant sex. Likewise, the relationship with low birthweight is not sex-specific, with a 1% increase in home values corresponding to a 0.00005–0.00006 percentage point reduction in the probability of low birthweight for both groups. While statistically detectable, these effect sizes are extremely modest and may not indicate meaningful differences in health outcomes. No significant relationship is observed between home values and preterm birth, aligning with prior research suggesting that preterm labor is primarily shaped by physiological and medical factors rather than neighborhood-level economic conditions (Goldenberg et al., 2008; Saigal and Doyle, 2008).

Although these findings differ from literature suggesting that male infants may be more vulnerable to adverse prenatal environments (DiPietro and Voegtline, 2017), the uniformity observed here could reflect the influence of broader household-level factors, such as modest improvements in financial stability or prenatal care access, that benefit all infants regardless of sex. However, given the small effect sizes, these interpretations should be made cautiously, and further research is needed to assess whether these patterns hold in other settings or over time.

6.2 County-level heterogeneity

Housing market conditions and broader economic factors shape the relationship between home values and birth outcomes. To examine this, I stratify the analysis by county-level income and inequality, with results presented in Tables 10 and 11. Counties are classified as low-income or high-income based on whether their median household income falls below or above the national median income for the given year. Similarly, counties are categorized as low-inequality (low-Gini) or high-inequality (high-Gini) based on whether their Gini coefficient is below or above the national median Gini coefficient for that year.

Prior research suggests that economic stability is a key determinant of birth outcomes, as financial resources enable access to better healthcare, nutrition, and living conditions (Aizer and Currie, 2014). I hypothesize that housing price increases will have a stronger positive effect on birth outcomes in low-income counties, where families may benefit more from improved housing market conditions and economic stability (Arcaya et al., 2024). Conversely, in high-inequality counties, the benefits of rising home values may be dampened due to segregation, disparities in healthcare access, and financial precarity (Chetty et al., 2016).

6.2.1 Median Income

As shown in Table 10, the relationship between home values and birth outcomes varies across the county income distribution. A 1% increase in home value is associated with a 0.013% increase in birthweight in the lowest-income counties (0–25%) and a 0.009% increase in the second quartile (25–50%). These associations are statistically significant and suggest that rising home values may be linked to modest improvements in fetal growth in lower-income areas. The effects are smaller but still significant in the third quartile, while no statistically significant relationship is observed in the highest-income counties (75–100%). A similar pattern is observed for low birthweight: a 1% increase in home value is associated with a 0.00011 percentage point reduction in the lowest-income counties, while estimates are smaller and not statistically significant in other quartiles. These results may reflect neighborhood-level improvements in disadvantaged areas, such as greater access to healthcare, improved

housing conditions, or reduced environmental risks (Krieger and Higgins, 2002; Osypuk et al., 2010). Alternatively, the results could reflect compositional shifts, such as healthier families moving into appreciating neighborhoods.

For gestational age, a statistically significant association is observed only in the third quartile (50–75%), with a 1% increase in home values linked to a 0.006% increase in gestational length. No clear pattern emerges for preterm birth, where only the highest-income counties exhibit a statistically significant reduction (0.009 percentage points). These findings suggest that birthweight may be more responsive to local economic conditions than gestational duration or timing of labor onset.

6.2.2 Gini Coefficient

Table 11 reports results stratified by county-level income inequality. A 1% increase in home value is associated with a 0.014% increase in birthweight in the lowest-inequality counties (0–25%), and a 0.011% increase in the highest-inequality counties (75–100%), with statistically significant effects across all quartiles. Although the magnitude is small, the consistency of the relationship suggests that rising home values may be broadly associated with modest improvements in fetal growth, regardless of baseline inequality. For low birthweight, a 1% increase in home value is associated with a 0.00008 percentage point reduction in the highest-inequality counties. The effect is largest in the lowest-inequality quartile (-0.00011 percentage points) and statistically significant, but weaker and not significant in the middle quartiles. These findings may indicate that even small gains in housing value can coincide with improvements in neonatal health in both the most and least unequal areas- possibly due to infrastructure investments or selective migration (Chetty et al., 2016).

Gestational age shows a statistically significant association with rising home values in the third and fourth quartiles, with effect sizes around 0.005% and 0.008%, respectively. As with income stratification, no significant relationship is found between home values and preterm birth, reinforcing the idea that gestational timing may be less responsive to local economic changes than birthweight (Goldenberg et al., 2008).

7 Robustness

To assess the robustness of the relationship between housing prices and birth outcomes, I conduct additional analyses replacing median home values with two alternative measures of housing market conditions from the 5-Year ACS Estimates: percent home burden and percent homeownership. While median home values capture property valuation and wealth accumulation, they do not directly reflect housing affordability pressures or long-term residential stability. Percent home burden, defined as the share of households spending more than 30% of their income on housing, serves as a measure of housing cost stress, while homeownership rate reflects community stability and access to homeownership opportunities. I test whether the observed relationships hold when using alternative indicators of housing market conditions, evaluating whether the observed relationships persist when using alternative housing market measures.

7.1 Homeownership Rate

The results in Table 12 examine the association between county-level homeownership rates and birth outcomes. The findings indicate that a 1% increase in homeownership rate is associated with a 0.029% increase in birthweight after controlling for maternal characteristics and including state-fixed effects. Similarily, a 1% increase in homeownership is significantly associated with a 0.027 percentage point reduction in the probability of low birthweight. While the magnitude of this effect is relatively small, it suggests that higher homeownership rates may be linked to marginal improvements in birth outcomes. However, no statistically significant association is found between homeownership rates and gestational age nor the probability of preterm birth across all specifications, reinforcing prior research that gestational length is less sensitive to economic and housing-related conditions than birthweight (Goldenberg et al., 2008).

While both housing prices and homeownership rates are indicators of local housing conditions, the results suggest that housing prices are more strongly associated with birth out-

comes, particularly in magnitude and statistical significance. The effects of homeownership on birthweight and low birthweight are consistent in direction but notably smaller. This contrast may reflect the distinct economic signals captured by each measure: housing prices are more responsive to market dynamics and economic shifts, while homeownership rates capture longer-term housing stability.

7.2 Home Burden Rate

The results for the relationship between home burden rates and birth outcomes are presented in Table 13. Surprisingly, the findings indicate that a 1% increase in the home burden rate is associated with a 0.01 percentage point reduction in the probability of low birthweight- a counterintuitive result, given that housing cost stress is often linked to negative health outcomes. One possible explanation is that higher burden rates may coincide with broader neighborhood investment or rising property values in gentrifying areas, where some families remain and indirectly benefit from improved infrastructure or healthcare access (Freeman, 2005). However, this effect is extremely small and should be interpreted with caution. These findings highlight the complexity of interpreting housing cost burden as an economic indicator, suggesting that it may capture different aspects of housing-related stress than broader measures like home prices.

8 Conclusions

Housing prices have far-reaching implications beyond market conditions, influencing economic stability, community well-being, and birth outcomes. This study examines the relationship between housing valuation and birth outcomes in the post-Great Recession period (2010–2018), focusing on birthweight and gestational age. Using a two-way fixed effects model, I account for both county-specific and national trends to isolate the association between housing prices and birth outcomes. The findings indicate that a 1% increase in home value is associated with a 0.009% increase in birthweight, a 0.003% increase in gestational

age, and a 0.0005 percentage point reduction in the probability of low birthweight. While these effect sizes are relatively small, they suggest that housing market conditions may be modestly associated with improvements in birth outcomes. However, these relationships are not uniform across populations. The heterogeneity analysis reveals that increases in home values are associated with higher average birthweight in low-income counties, while this relationship is not statistically significant in high-income counties. When stratifying by inequality, both low- and high-inequality counties show increases in birthweight, but the gains are more pronounced in low-inequality areas. For more severe outcomes, such as low birthweight, only low-income and high-inequality counties exhibit statistically significant reductions. This suggests that economic vulnerability or disparity may amplify the protective effects of rising home values against the most adverse neonatal risks.

Additionally, the effects of rising home values differ across maternal characteristics. Black and non-White mothers experience stronger associations with increased birthweight and reductions in the probability of low birthweight, potentially reflecting differential exposure to structural disadvantage. Similarly, mothers with a high school education show more consistent improvements in birth outcomes relative to other education levels, suggesting heightened sensitivity to local economic shifts. These heterogeneous effects underscore the complexity of the relationship between housing prices and birth outcomes. The findings highlight the potential role of targeted housing policies in promoting maternal and infant health, particularly in economically or racially marginalized communities.

One limitation of this analysis is the lack of direct measures of maternal socioeconomic status, housing displacement, or stress, all of which may play a role in shaping the observed relationships. While rising home values may signal improved neighborhood conditions, they can also introduce financial strain, displacement risks, or reduced housing access for lower-income families- mechanisms that cannot be directly tested with the available data. Additionally, while the two-way fixed effects model controls for many potential confounders, unobserved factors related to broader economic conditions, housing market volatility, and maternal health behaviors could still influence the results. Future research should further

disentangle the pathways linking housing valuation to birth outcomes. As housing markets continue to shape economic mobility and community well-being, housing prices should be examined as a key economic determinant of maternal and infant health.

Although the estimated effect sizes in this study are modest, the potential long-term implications should not be overlooked. Birthweight is a well-established predictor of adult health and labor market outcomes. For example, Black et al. (2007) find that a 10% increase in birthweight is associated with a 0.8% increase in adult earnings. Applying this elasticity to the present findings, a 1% increase in home values in low-income counties is associated with a 0.013% increase in birthweight, which translates to an estimated 0.00104% increase in adult earnings per child. While this individual-level gain is minimal, when scaled to the population level, the implications are more substantial: across 100,000 births, this could correspond to approximately $1.56 million in cumulative lifetime earnings. These projections underscore the broader economic significance of early-life health improvements and reinforce the relevance of housing market conditions as a potential determinant of long-term well-being.

9 Tables and Figures

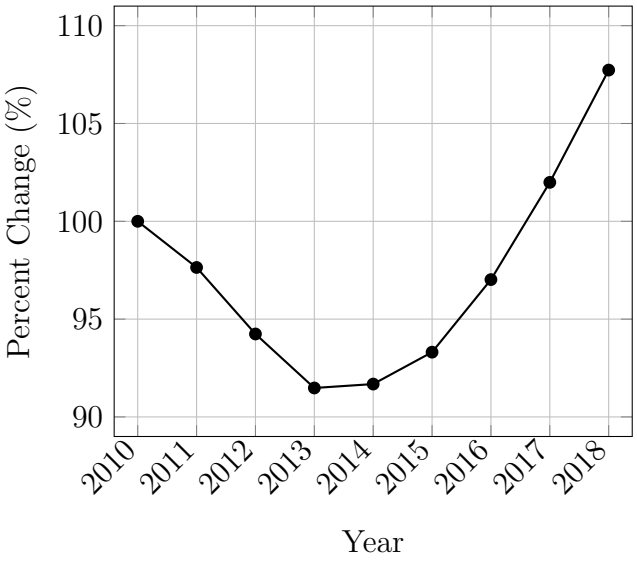

Figure 1: Percent change in home value from 2010-2018
This figure represents the percent change in home value from 2010 to 2018 using ACS 5-Year Estimates of the county-level median home values. This series is expressed as percentage changes relative to the 2010 baseline year.

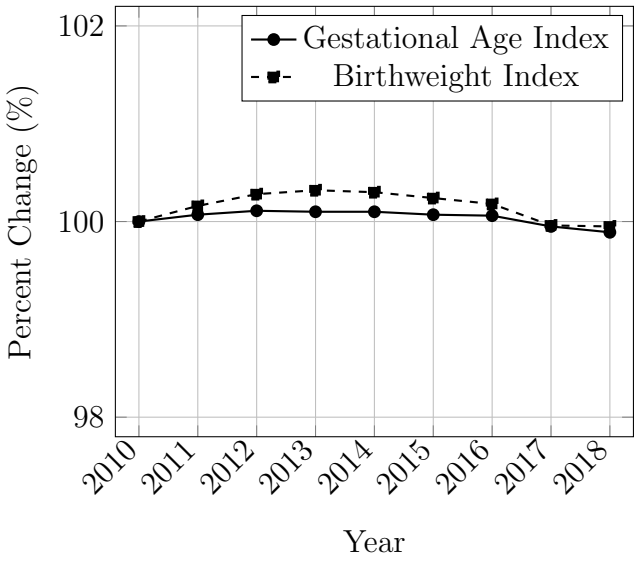

Figure 2: Percent change in gestational age and birthweight from 2010-2018
This figure presents the percent change in gestational age and birthweight from 2010 to 2018 using the NVSS dataset. The solid line represents changes in gestational age, and the dashed line shows the changes in birthweight. Both series are expressed as percentage changes relative to the 2010 baseline year.

Year	Gini	Income	Gini Difference	Income Difference
2010	0.4560	53,799.99	0.0560	-12,930.01
2011	0.4584	54,833.25	0.0494	-10,916.75
2012	0.4600	55,088.38	0.0510	-10,651.62
2013	0.4622	55,173.55	0.0562	-13,046.45
2014	0.4646	55,784.98	0.0496	-11,575.02
2015	0.4669	56,291.63	0.0549	-14,708.37
2016	0.4681	57,948.12	0.0571	-15,571.88
2017	0.4690	60,400.37	0.0570	-14,409.63
2018	0.4692	63,086.76	0.0552	-12,703.24
N	35,479,147	35,479,147	35,479,147	35,479,147

Table 1: Summary of gini and income values with median differences by year
This table presents ACS 5-Year Estimates of the Gini coefficient and median income values from 2010 to 2018. The Gini coefficient reflects income inequality, aggregated at the county level, while income refers to median household income, also aggregated at the county level for each year. The "Gini Difference" and "Income Difference" columns report the deviation between the aggregated county-level values and the corresponding national values for each year, highlighting how the distribution of county-level conditions compares to national trends.

Year	Birthweight	Gestational Age
2010	3268.54	38.6651
2011	3273.72	38.6925
2012	3277.73	38.7065
2013	3279.24	38.7033
2014	3278.34	38.7047
2015	3276.29	38.6914
2016	3274.59	38.6874
2017	3267.42	38.6464
2018	3266.9	38.6207
N	35,479,147	35,479,147

Table 2: Summary statistics of outcomes by year
This table presents the values for the two primary outcomes, birthweight and gestational age, for each year from 2010 to 2018 from the NVSS dataset.

Year	%Black	%White	%Non-white	Age	Education	Infant's Sex
2010	16	77	23	27.6851	0.73354265	0.4881846
2011	16	76	24	27.8532	0.76321243	0.4880476
2012	16	76	24	27.9841	0.78167764	0.4885957
2013	16	76	24	28.1623	0.81239031	0.4880754
2014	15	72	28	28.3513	0.83567891	0.488291
2015	15	75	25	28.514	0.86539123	0.4881868
2016	16	74	26	28.7093	0.87293428	0.488526
2017	16	73	27	28.8468	0.89328930	0.4882823
2018	16	74	26	29.009	0.89138945	0.4888187
N	35,479,147	35,479,147	35,479,147	35,479,147	35,479,147	35,479,147

Table 3: Summary statistics of maternal and infant characteristics by year

This table presents maternal characteristics from the NVSS dataset, including the distribution of maternal racial demographics, age, and educational attainment, as well as infant sex for each year from 2010 to 2018. Maternal education is recorded as a binary variable, where 0 represents non-high school graduates and 1 represents high school graduates. Similarly, infant sex is coded as 0 for male and 1 for female. Race is categorized into Black, White, and Non-White, with the latter grouping all non-White individuals, including Black mothers, into a single percentage.

	(1)	(2)
	A. Log(Birthweight)	
Log(Home Value)	0.00904***	0.00904***
	(0.00210)	(0.00210)
N	30,287,175	30,121,131
	B. Log(Gestational Age)	
Log(Home Value)	0.00323**	0.00316**
	(0.00131)	(0.00134)
N	30,287,175	30,121,131
	C. p(Preterm Birth)	
Log(Home Value)	-0.00132	-0.00128
	(0.00325)	(0.00336)
N	30,287,175	30,121,131
	D. p(Low Birthweight)	
Log(Home Value)	-0.00537***	-0.00537***
	(0.00169)	(0.00169)
N	30,287,175	30,121,131

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Effect of home value on birth outcomes with controls

This table presents the effects of county-level home values on four key birth outcomes: birthweight, gestational age, the probability of preterm birth ($\leq$ 37 weeks), and the probability of low birthweight ($<$ 2500 grams). The first column presents estimates that include county and year-fixed effects, along with maternal and infant controls, including maternal age, maternal education, maternal race, and infant sex. The second column includes estimates with additional county-level controls, such as median income, Gini coefficient (income inequality), and population. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight and preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1)	(2)	(3)
	A. Log(Birthweight)		
Log(Home Value)	0.00765***	0.00904***	0.00904***
	(0.00202)	(0.00210)	(0.00210)
N	35,439,770	30,287,175	30,287,175
	B. p(Low Birthweight)		
Log(Home Value)	–0.00461***	-0.00537***	-0.00537***
	(0.00154)	(0.00169)	(0.00169)
N	35,439,770	30,287,175	30,287,175

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Effect of home value on birthweight and p(low birthweight)
This table presents the effects of county-level home values on birthweight and the probability of low birthweight (< 2500 grams). The first column presents estimates using county and year-fixed effects, and the second column introduces maternal and infant controls, such as maternal age, maternal education, maternal race, and infant sex. The third column adds state-fixed effects to account for unobserved regional differences. For the birthweight outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1)	(2)	(3)
	A. Log(Gestational Age)		
Log(Home Value)	0.00326**	0.00323**	0.00318**
	(0.00151)	(0.00131)	(0.00157)
N	35,439,770	30,287,175	35,308,228
	B. p(Preterm Birth)		
Log(Home Value)	0.00011	-0.00132	-0.00132
	(0.00313)	(0.00325)	(0.00325)
N	35,439,770	30,287,175	30,287,175

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Effect of home value on gestational age and p(preterm birth)
This table presents the effects of county-level home values on gestational age and the probability of preterm birth ($\leq$ 37 weeks). The first column presents estimates using county and year-fixed effects, and the second column introduces maternal and infant controls such as maternal age, maternal education, maternal race, and infant sex. The third column adds state-fixed effects to account for unobserved regional differences. For the gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1)	(2)	(3)
	A. Log(Birthweight)		
Log(Home Value)	0.008***	0.012***	0.015***
	(0.002)	(0.005)	(0.003)
N	22,701,534	4,679,247	7,716,924
	B. Log(Gestational Age)		
Log(Home Value)	0.002**	0.005*	0.005***
	(0.001)	(0.003)	(0.002)
N	22,701,534	4,679,247	7,716,924
	C. p(Preterm Birth)		
Log(Home Value)	-0.001	-0.007	-0.009*
	(0.003)	(0.007)	(0.005)
N	22,701,534	4,679,247	7,716,924
	D. p(Low Birthweight)		
Log(Home Value)	-0.002	-0.013**	-0.016***
	(0.002)	(0.004)	(0.003)
N	22,701,534	4,679,247	7,716,924

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Effect of home value on birth outcomes by maternal race

This table presents the effects of county-level home values on four key birth outcomes: birthweight, gestational age, the probability of preterm birth ($\leq$ 37 weeks), and the probability of low birthweight ($<$ 2500 grams), stratified by maternal race. The first column presents estimates for White mothers only, the second column for Black mothers only, and the third for all Non-White mothers. All estimates include county and year-fixed effects, as well as maternal and infant controls, including maternal age, maternal education, maternal race, and infant sex. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight and preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1)	(2)
	A. Log(Birthweight)	
Log(Home Value)	0.002	0.009***
	(0.002)	(0.002)
N	2,385,482	27,901,618
	B. Log(Gestational Age)	
Log(Home Value)	-0.002	0.004***
	(0.003)	(0.001)
N	2,385,482	27,901,618
	C. p(Preterm Birth)	
Log(Home Value)	0.006	-0.003
	(0.011)	(0.003)
N	238,5482	27,901,618
	D. p(Low Birthweight)	
Log(Home Value)	-0.006	-0.006***
	(0.005)	(0.002)
N	238,5482	27,901,618

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Effect of home value on birth outcomes by maternal education level

This table presents the effects of county-level home values on four key birth outcomes: birthweight, gestational age, the probability of preterm birth ($\leq$ 37 weeks), and the probability of low birthweight ($<$ 2500 grams). The analysis is stratified by maternal education level, with the first column representing mothers with less than a high school education and the second column representing those with at least a high school education. All estimates include county and year-fixed effects, as well as maternal and infant controls, including maternal age, maternal education, maternal race, and infant sex. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight and preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1)	(2)
	A. Log(Birthweight)	
Log(Home Value)	0.009***	0.009***
	(0.002)	(0.002)
N	14,781,457	15,505,464
	B. Log(Gestational Age)	
Log(Home Value)	0.003**	0.003**
	(0.001)	(0.001)
N	14,781,457	15,505,464
	C. p(Preterm Birth)	
Log(Home Value)	0.000	-0.003
	(0.003)	(0.004)
N	14,781,457	15,505,464
	D. p(Low Birthweight)	
Log(Home Value)	-0.006***	-0.005***
	(0.002)	(0.002)
N	14,781,457	15,505,464

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Effect of home value on birth outcomes by infant sex

This table presents the effects of county-level home values on four key birth outcomes: birthweight, gestational age, the probability of preterm birth ($\leq$ 37 weeks), and the probability of low birthweight ($<$ 2500 grams), stratified by infant sex. The first column presents estimates for female infants, and the second column presents estimates for male infants. All estimates include county and year-fixed effects, as well as maternal and infant controls, including maternal age, maternal education, maternal race, and infant sex. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight and preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1) 0-25%	(2) 25-50%	(3) 50-75%	(4) 75-100%
	A. Log(Birthweight)			
Log(Home Value)	0.013***	0.009	0.008**	0.003
	(0.002)	(0.007)	(0.004)	(0.004)
Mean of Y	8.061	8.067	8.072	8.082
N	7,353,999	7,520,705	7,537,295	7,873,195
	B. Log(Gestational Age)			
Log(Home Value)	0.000	0.002	0.006**	0.003
	(0.002)	(0.002)	(0.003)	(0.002)
Mean of Y	3.651	3.651	3.652	3.656
N	7,353,999	7,520,705	7,537,295	7,873,1952
	C. p(Preterm Birth)			
Log(Home Value)	0.005	-0.005	-0.005	-0.009*
	(0.010)	(0.008)	(0.006)	(0.004)
Mean of Y	0.126	0.126	0.113	0.098
N	7,353,999	7,520,705	7,537,295	7,873,195
	D. p(Low Birthweight)			
Log(Home Value)	-0.011***	-0.0055	-0.002	0.000
	(0.003)	(0.005)	(0.003)	(0.003)
Mean of Y	0.087	0.086	0.081	0.072
N	7,353,999	7,520,705	7,537,295	7,873,195

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Effect of home value on birth outcomes by median income level

This table presents the effects of county-level home values on four key birth outcomes: birthweight, gestational age, the probability of preterm birth (< 37 weeks), and the probability of low birthweight (≤ 2500 grams). The analysis is stratified by county median income, dividing counties into four groups based on income quartiles using ACS data: bottom 25%, middle-low 25%, middle-high 25%, and top 25%. All estimates include county and year-fixed effects, as well as maternal and infant controls, including maternal age, maternal education, maternal race, and infant sex. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight and preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1) 0-25%	(2) 25-50%	(3) 50-75%	(4) 75-100%
	A. Log(Birthweight)			
Log(Home Value)	0.014***	0.005*	0.014**	0.011***
	(0.002)	(0.003)	(0.007)	(0.004)
Mean of Y	8.089	8.076	8.065	8.053
N	7,679,541	7,660,276	7,593,723	7,351,443
	B. Log(Gestational Age)			
Log(Home Value)	0.003	0.005	0.005*	0.008*
	(0.001)	(0.002)	(0.003)	(0.005)
Mean of Y	3.657	3.654	3.650	3.648
N	7,679,541	7,660,276	7,593,723	7,351,443
	C. p(Preterm Birth)			
Log(Home Value)	-0.003	-0.011	-0.007	-0.014
	(0.005)	(0.005)	(0.010)	(0.009)
Mean of Y	0.100	0.110	0.123	0.128
N	7,679,541	7,660,276	7,593,723	7,351,443
	D. p(Low Birthweight)			
Log(Home Value)	-0.008***	-0.001	-0.005	-0.008*
	(0.003)	(0.002)	(0.004)	(0.004)
Mean of Y	0.066	0.077	0.089	0.095
N	7,679,541	7,660,276	7,593,723	7,351,443

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 11: Effect of home value on birth outcomes by median Gini coefficient

This table presents the effects of county-level home values on four key birth outcomes: birthweight, gestational age, the probability of preterm birth ($\leq$ 37 weeks), and the probability of low birthweight ($<$ 2500 grams). The analysis is stratified by county-level income inequality, dividing counties into quartiles based on ACS data: lowest, lower-middle, upper-middle, and highest inequality. All estimates include county and year-fixed effects, as well as maternal and infant controls, including maternal age, maternal education, maternal race, and infant sex. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home value. For low birthweight and preterm birth, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home value; note that coefficients are not scaled, and should be divided by 100 for interpretation.

	(1)	(2)	(3)
	A. Log(Birthweight)		
Homeownership Rate	0.00022	0.00029**	0.00029**
	(0.00014)	(0.00014)	(0.00014)
N	35,478,059	30,323,794	30,323,794
	B. Log(Gestational Age)		
Homeownership Rate	0.00005	0.00002	0.00002
	(0.00009)	(0.00009)	(0.00009)
N	35,478,059	30,323,794	30,323,794
	C. p(Preterm Birth)		
Homeownership Rate	-0.037241	-0.033550	-0.033550
	(0.000)	(0.0340)	(0.0340)
N	35,478,059	30,323,794	30,323,794
	D. p(Low Birthweight)		
Homeownership Rate	-0.00019	-0.00027**	-0.00027**
	(0.0001)	(0.0001)	(0.0001)
N	35,478,059	30,323,794	30,323,794

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 12: Effect of homeownership rate on birth outcomes

This table presents the effects of homeownership rate, defined as the percentage of households owning their residence, on four key birth outcomes: birthweight, gestational age, the probability of preterm birth (≤ 37 weeks), and the probability of low birthweight (< 2500 grams). The first column provides estimates using county- and year-fixed effects. The second column introduces maternal and infant characteristics as controls: maternal age, maternal education, maternal race, and infant sex. The third column further incorporates state-fixed effects, meaning the analysis compares counties within the same state to control for unobserved state-level differences. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in homeownership rate. For preterm birth and low birthweight, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in homeownership rate.

	(1)	(2)	(3)
	A. Log(Birthweight)		
Home Burden Rate	-0.00006	0.00000	0.00000
	(0.00008)	(0.00008)	(0.00008)
N	35,477,798	30,323,590	30,323,590
	B. Log(Gestational Age)		
Home Burden Rate	0.00000	0.00001	0.00001
	(0.00003)	(0.00003)	(0.00003)
N	35,477,798	30,323,590	30,323,590
	C. p(Preterm Birth)		
Home Burden Rate	0.00000	-0.00001	-0.00001
	(0.00013)	(0.00013)	(0.00013)
N	35,477,798	30,323,590	30,323,590
	D. p(Low Birthweight)		
Home Burden Rate	-0.00008	-0.000141**	-0.000141**
	(0.00006)	(0.00006)	(0.00006)
N	35,477,798	30,323,590	30,323,590

Note: *** p<0.01, ** p<0.05, * p<0.1.

Table 13: Effect of home burden rate on birth outcomes

This table presents the effects of county-level home burden rate, defined as the percent of households spending more than 30% of their income on housing, on four key birth outcomes: birthweight, gestational age, the probability of preterm birth (< 37 weeks), and the probability of low birthweight (≤ 2500 grams). The first column provides estimates using county- and year-fixed effects. The second column introduces maternal and infant characteristics as controls: maternal age, maternal education, maternal race, and infant sex. The third column further incorporates state-fixed effects to account for any unobserved state-level differences. For the birthweight and gestational age outcome, estimates can be interpreted as the percent change in birthweight associated with a 1% increase in home burden rate. For preterm birth and low birthweight, coefficients are interpreted as the change in probability, expressed in percentage points, associated with a 1% increase in home burden rate.

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