Love and the (Superstar) City: Housing Costs and the Geography of Marriage

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PRELIMINARY AND INCOMPLETE

Abstract

We provide new evidence on the drivers of assortative marriage in the United States. Using four decades of microdata from the American Community Survey, we document substantial spatial variation in assortative mating over income: it is strongest in areas with higher housing costs and a larger share of college-educated workers. Instrumenting local housing prices with variation induced by land-use regulation, we establish a causal link between housing costs and assortative mating. To interpret these findings, we develop a marriage-market model that embeds the search-and-matching framework of Shimer and Smith (2000) within the superstar cities environment of Gyourko et al. (2013). In the model, tighter housing markets and skill concentration jointly raise the degree of assortative matching. Estimating the model allows us to decompose the contribution of these forces to both the long-run trend and the spatial dispersion in homogamy.

Keywords: Marriage market, Sorting, Search and Matching, Housing, Superstar cities
JEL Codes: J12, R21, R23, D31

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1 Introduction

Over the last four decades, assortative mating on income, that is, the similarity between spouses' earnings, has risen dramatically in the United States. Today's married couples are more similar than ever before, concentrating high earners within the same households and amplifying household income inequality.[1] Despite this, only a few studies have sought to explain the causes of this trend, typically attributing it to technological progress in the home, shifts in the wage structure, increased women's labor-force participation, or changes in the division of labor within households.[2] At the same time, the spatial distribution of earnings has shifted, with high-income jobs increasingly concentrated in metropolitan areas characterized by high housing costs (Moretti, 2012). Because marriage markets are inherently local, these parallel trends raise an important question: to what extent is the rise in positive assortative mating linked to spatial inequality and housing markets?

This paper studies the role of housing prices and skill-biased technological change in shaping the marriage decisions of U.S. couples. As skilled workers increasingly relocate to urban areas, where both the skill premium and housing costs are higher, they are more likely to meet and marry other high-earning singles. At the same time, the financial burden of homeownership increases the cost of partnering with a lower-earning spouse, raising the returns to homogamy. Conversely, lower-skilled workers may be priced out of these areas altogether, relocating to more affordable regions. This sorting process reshapes local marriage markets by linking returns to skills and housing affordability to marital choices.

In the first part of the paper, we update estimates of aggregate homogamy in the United States, and present novel empirical evidence on how marital sorting patterns vary across Metropolitan Statistical Areas (MSAs). Using microdata from the American Community Survey (ACS), we document four new facts: (i) income homogamy has steadily risen in recent years, reaching its highest level in 2021; (ii) there is substantial geographic dispersion in the degree of homogamy across the United States; (iii) assortative mating is higher in areas with a higher share of college graduates, and (iv) assortative mating is higher in areas with more expensive housing, even after instrumenting for house prices using variation in local land-use regulation stringency. These results hold after accounting for intra-household division of labor, suggesting that structural changes in marriage decisions, rather than shifts in gender roles alone, are driving these patterns.

We are the first to link housing prices with trends in homogamy, showing that spouses are most economically similar in locations where housing costs are highest. Importantly,

[1]See McCall and Percheski (2010), Schwartz (2010), Reed and Cancian (2012), Greenwood et al. (2014), Eika et al. (2019), Boertien and Bouchet-Valat (2022), Almar et al. (2023)

[2]Becker (1993), Greenwood et al. (2016), Gonalons-Pons and Schwartz (2017)

this relationship is not solely driven by increasing spatial inequality. While part of the rise reflects the sorting of high-earning college graduates into urban areas, thus changing the composition of local singles, we provide evidence that this "composition" channel is not the only mechanism at work. We also document that the effect of housing costs on homogamy is causal. Following a large literature that instruments for local house prices using residential land-use restrictions[3], we show that more stringent land-use regulations raise housing prices and, in turn, increase assortative mating. Because these regulations arise from slow-moving political and institutional processes, they are unlikely to respond to short-run local demand shocks and thus serve as plausibly exogenous drivers of local prices[4]. Using this instrument, we estimate that a doubling of real housing costs leads to a one-third increase in the slope of the relationship between husbands' and wives' earnings percentiles within an MSA. We refer to this mechanism as the "preference" effect.

We rationalize these patterns using a marriage-market model that embeds the Shimer and Smith (2000) framework within the "superstar cities" setting of Gyourko et al. (2013). In the model, individuals differ by skills and choose between two locations, the *Available City* (A) and the *Superstar City* (S), that differ in both productivity and housing supply. Superstar cities are more productive but have limited housing supply, so as local incomes rise, housing prices increase sharply. In contrast, smaller or less productive areas have more elastic housing supply and lower rents. Because housing markets are local, these differences create spatial variation in both earnings potential and the cost of living.

Within each location, singles meet and marry locally. Marriage decisions depend on both on personal preferences, model by a match-specific "love shock", and the economic trade-offs of combining incomes. When housing costs are high, the financial burden of homeownership or rent increases the value of a high-earning partner. In other words, housing affordability depends more on joint resources, which strengthens incentives for couples to match on income. As a result, assortative mating becomes stronger in more expensive, high-productivity areas—exactly the pattern observed in the data.

We use the model to decompose the rise in assortative mating into two channels. The first is a composition effect: as high-skilled workers sort into productive, high-cost cities, local marriage markets become more homogeneous. The second is a preference effect: as housing costs rise, singles within a location become more selective with respect to earnings. We calibrate the model to local MSA data in 2019 and show that these two channels together

[3]Our measure of local land use regulation comes from the Wharton Residential Land Use Regulatory Index (WRLURI) and its panel extension (Gyourko et al., 2021), which provide rare longitudinal data on changes in regulatory stringency. These data allow us to exploit within-MSA regulatory shifts over time rather than relying solely on cross-sectional differences, a feature largely absent from prior work.

[4]See Ganong and Shoag (2017); Gyourko and Krimmel (2021); Glaeser and Ward (2009).

help explain both the spatial dispersion in homogamy and of its aggregate rise over the last four decades. Policy counterfactuals indicate that relaxing land-use regulation and expanding the housing stock would weaken the preference channel and reduce household income concentration.

1.1 Related Literature

Our paper contributes to three strands of the literature. First, it adds to the large body of work documenting rising assortative matching in marriage markets. Much of this literature focuses on educational attainment, finding that individuals have become increasingly more likely to marry partners with a similar level of schooling,[5] as well as growing assortative mating on earnings.[6] The dominant explanation attributes these trends to stronger sorting on education and other socioeconomic characteristics, with individuals becoming more selective in their choice of partners (Fernández and Rogerson, 2001; McCall and Percheski, 2010; Doepke and Tertilt, 2016).[7]

However, while this literature documents that assortative mating has increased, it offers little explanation for why individuals have become more selective. Our paper contributes by proposing and testing two economic mechanisms—spatial sorting and rising housing costs—that shape the distribution of individuals across MSAs and raise the returns to marrying a high-earning spouse, thereby inducing greater selectivity in partner choice.

Secondly, our paper relates to a literature documenting the increasing spatial segregation of workers by education and skill in the United States. Moretti (2012) documents the increasing concentration of college-educated workers in high-wage, high-cost cities and the widening geographic gaps in labor market outcomes between skilled and unskilled workers. Autor et al. (2013) show how trade shocks accelerated the divergence between dynamic, skill-intensive urban regions and declining manufacturing regions. Diamond (2016) provides causal evidence that high-skilled workers increasingly sort into expensive cities where wages are higher, and that this sorting amplifies geographic inequality. This literature recognizes the relationship between housing prices and spatial segregation. Saiz (2010) shows that geographic constraints on housing supply make local housing prices highly sensitive to shifts in demand, helping explain why high-skill cities are also high-cost cities. Conversely Ganong and Shoag (2017) show that high house prices can exacerbate income inequality by deter-

[5]See Greenwood et al. (2014); Fernandez et al. (2005); Doepke and Tertilt (2016).

[6]See McCall and Percheski (2010); Boertien and Bouchet-Valat (2022); Cancian and Reed (1998); Schwartz (2010); Reed and Cancian (2012).

[7]A related literature argues that observed increases in homogamy may instead reflect changes in the intra-household division of labor, rather than true shifts in partner matching (Gonalons-Pons and Schwartz, 2017). By focusing on hourly earnings, we largely abstract from such intra-household specialization decisions.

ring migration of low-skilled workers. While the literature documents the trends in spatial segregation, and the way in which these trends reinforce income inequality, they do not link marriage market outcomes to these trends. One exception to this is Costa and Kahn (2000), who look at the increasing concentration of "power couples" (couples where both spouses have college degrees) in urban areas. They find that the co-location problem of married high-skill couples drives migration of power-couples to urban areas. Our paper connects these two literatures by explicitly examining how assortative mating varies across geography, and by expounding a mechanism by which assortative mating amplifies spatial inequalities.

In addition, our paper also contributes to several related literatures. First, it speaks to a broader body of work on household formation and demographic responses to housing market conditions, which has shown that higher housing costs delay marriage and fertility and increase co-residence with parents (Ermisch, 1999; Dettling and Kearney, 2017; Martínez Mazza, 2020). Second, it connects to the literature on the consequences of housing supply constraints, which has primarily focused on wages, migration, and local labor markets (**?**Gyourko et al., 2021), by showing that these constraints can also shape household sorting patterns. Finally, our work is related to research on the microeconomic origins of income inequality within households, which has highlighted how changes in household structure contribute to rising inequality (Lundberg et al., 2017). By linking housing market frictions to marriage market outcomes, our paper brings these literatures together and highlights marriage as a new margin through which housing supply constraints can amplify inequality.

The remainder of the paper is organized as follows. Section 2 describes the data and discusses our key measure of homogamy before establishing a new set of empirical facts on housing prices and income homogamy. Section 3 shows our causal identification strategy whereby we use exogenous variation in local land use restrictions to instrument for housing price change, finding this has a significant effect on the level of homogamy. Section 4 proposes the model and characterizes the equilibrium of the economy. Section **??** takes the model to the data and shows the key results alongside our policy counterfactual exercises. Finally Section 5 concludes.

2 Empirical Evidence

This section documents new empirical facts about assortative mating over income in the United States and establishes a causal link between local housing prices and the degree of assortative mating. We begin by introducing the data and describing the methodology used to measure assortative mating. We then present descriptive patters over time and across space, and finally use exogenous variation in land-use regulation to identify causal effects.

2.1 Data and Sample Selection

We use data from the American Community Survey (ACS), a publicly available cross-sectional dataset at the household level[8]. The ACS samples between 0.4% and 1% of U.S. households annually and is representative of the overall U.S. population. It is administered by the U.S. Census Bureau, and response is mandatory for households, leading to high compliance rates.

We choose this survey for several reasons. First, to study income homogamy across geographic sub-areas of the United States, we need a large sample of married couples within US regions. The ACS provides individual-level information on earnings, spousal characteristics, and housing at the metropolitan statistical area (MSA) level, making it well suited for this purpose. Importantly, the data also include the year of marriage, which allows us to analyze trends and cross-sectional variations in marriage timing. Data on earnings using the ACS is available from 2000 to 2021, while housing data is available from 2005 and data on year of marriage from 2007.

To ensure measurement consistency over time, we restrict the sample to heterosexual married couples.[9] We further limit the sample to respondents aged 25–65 to abstract from changes related to schooling and retirement. Our primary variable of interest is hourly wage. To calculate this, we divide *incwage* by *uhrswork*, the usual number of hours worked per week in the prior year. We also use data on respondents' estimates of the value of their own house to construct MSA-level average housing costs. The homeowner's value of housing is given by the respondent's estimate of the property's market value, that is, the amount the house would sell for if placed on the market. This question is only asked of homeowners.[10] We adopt the 2013 MSA definitions from the U.S. Office of Management and Budget (OMB), which define MSAs as urbanized areas with at least 50,000 residents and their economically linked surrounding communities.

[8]The data are accessed via the Integrated Public Use Microdata Series (IPUMS) website.

[9]While ideally we would include all cohabiting couples, the ACS only began identifying same-sex and cohabiting partnerships in 2007. This limits our ability to study long-run trends outside heterosexual marriages.

[10]This variable provides a level measure of housing value that can be consistently compared across MSAs. To validate the accuracy of these self-assessed values, we compare them against an MSA-level house price index based on transaction data. The correlation between the two series is 0.89, indicating that self-assessed property values are largely accurate. A scatterplot illustrating this relationship is presented in Appendix 7.

2.2 Measuring Assortative Mating

A central task in this paper is to quantify how similar spouses are in their earnings potential. There are several approaches in the literature to measure assortative mating, and estimates are sensitive to the metric employed (Gihleb and Lang, 2020). Because our focus is on how couples sort by relative position in the earnings distribution, rather than absolute wage levels, we use a rank-based measure. This approach captures whether higher-earning individuals tend to marry others with similarly high relative earnings, independent of changes in overall wage dispersion.

Formally, we modify the framework of Greenwood et al. (2014). We regress the wife's income percentile on the husband's income percentile within the national earnings distribution for their respective sex and year:

$$wife\_pct_{it} = \alpha_t + \beta_t, husband\_pct_{it} + \epsilon_{it} \tag{1}$$

We interpret the coefficient β_t as a measure of assortative mating within year t. The higher β, the stronger we say assortative mating is. A β of 1 would indicate perfect assortative mating, while a β of 0 would correspond to random pairing. By converting incomes to ranks, rather than using levels, this regression-based measure is invariant to changes in income dispersion[11]. This regression-based method is preferable to correlation coefficients because it allows us to include MSA level controls, allowing us to comment on assortative mating absent of omitted variables that can cause bias. This is important since we make causal statements about assortative mating and housing. Our goal is not to capture changes in inequality, but rather in sorting behavior conditional on the marginal distributions of income.

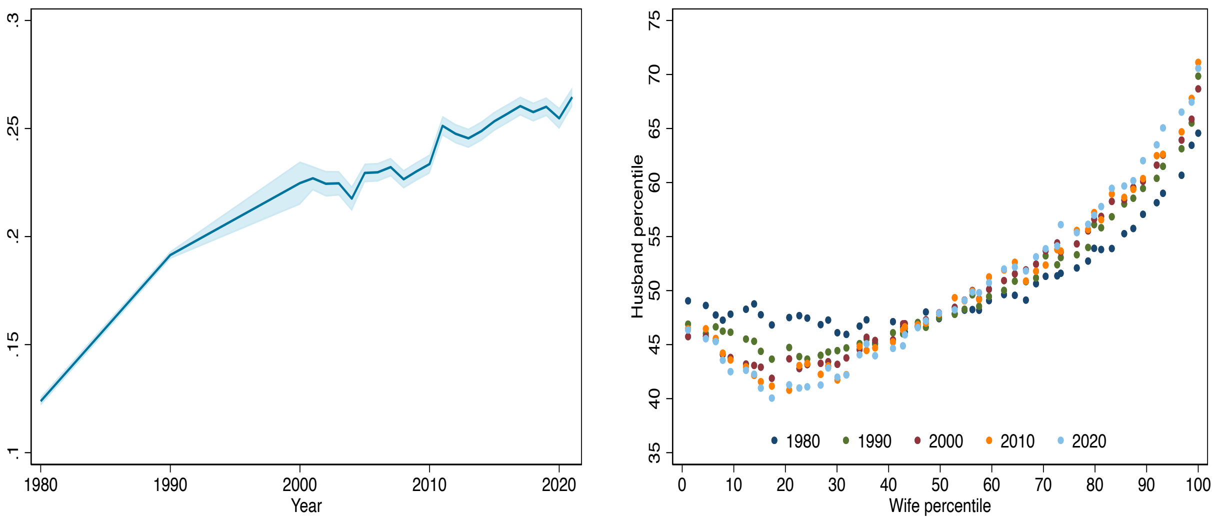
where both husband and wife's earnings are defined as percentiles of hourly wages within the national distribution for their respective gender in year t, denoted by $wife\_pct_{it}$ and $husband\_pct_{it}$ respectively. The coefficient β_t measures the extent of income homogamy: a value of 1 would indicate perfect assortative matching on income ranks, while a value of 0 implies random assortation. The evolution of β captures changes in the extent of assortative mating among US households over time.

2.3 Trends in Assortative Mating

We estimate Equation 1 using ordinary least squares (OLS) separately for each year in the sample and plot the resulting estimates of β_t in Figure 1a. The figure shows a persistent

[11] The regression coefficient is given by $\beta = \frac{\sigma_{xy}}{\sigma_x^2} = \frac{\sigma_y}{\sigma_x}\rho$. As noted by Eika et al. (2019) and Gihleb and Lang (2020), if variables are used in levels, shifts in β may reflect changes in the relative distributions of income or education between men and women rather than true changes in sorting behavior.

Figure 1. Time Trends in Homogamy



(a) Homogamy over time

(b) Rank-rank homogamy

Notes: Panel a) plots the estimated slope of wife's hourly earnings rank on husband's hourly earnings rank (β) over time. Light blue area represents 95% confidence intervals. Separate regressions are estimated for years 1980, 1990, and every year from 2000. Panel b) plots the average husband's hourly wage percentile in that MSA, by each within-MSA percentile of wifes' hourly earnings in the ACS for each year cross-section as indicated. The figure is constructed by binning wife rank into 2-percentile point bins (so that there are 50 equal-width bins) and plotting the mean husband rank in each bin versus the mean wife rank in each bin. For both plots the sample consists of married dual-earner couples ages 25–54.

increase in the level of assortative over the period. In 1980, the homogamy coefficient β was approximately 0.15, implying that the highest-earning women were, on average, married to men whose earnings percentile was about 15 points higher than that of the husbands of the lowest-earning women. By 2021, this difference had risen to roughly 26 percentiles. In other words, the correlation between spousal earnings has nearly doubled over the past four decades. Our results are consistent with earlier work documenting relatively stable levels of income and educational homogamy in the early 2000s (Gihleb and Lang, 2020; Gonalons-Pons and Schwartz, 2017; Eika et al., 2019). However, our estimates suggest that this apparent flattening was temporary: assortative matching has continued to intensify in more recent years. The trend toward greater economic similarity between spouses thus shows no sign of reversal.

We next examine how the strength of homogamy varies across the income distribution by plotting a rank–rank relationship between wives' and husbands' earnings (Figure 1b). This approach illustrates how the correlation between spouses' hourly wages differs at each point of the distribution.[12] The figure shows that assortative matching is present throughout the distribution but is particularly pronounced at the top: high-earning women are most likely to be married to men with similarly high earnings ranks. The rank–rank plot also highlights which parts of the income distribution have driven the rise in assortative mating over time. While the slope of the relationship has steepened across the entire distribution, the largest changes occur between the 10th and 30th percentiles of women's earnings. In this range, women are now less likely to be married to high-earning men than in earlier periods. Interestingly, the relationship is not fully monotonic: women in the bottom decile of hourly earners tend to have husbands who earn more, on average, than those of women in the 10th–30th percentile. This pattern may reflect a persistence of traditional household income arrangements, in which men remain the primary earners while their spouses contribute relatively less to household income.

2.4 Cross-sectional Variation in Homogamy

We now turn from aggregate trends in homogamy to examining how homogamy varies across geographic areas. To estimate the extent of homogamy at the MSA level, we modify our empirical specification to account for local income distributions within each MSA, as shown in Equation 2:

$$wife\_pct_{itc} = \alpha_{tc} + \beta_{tc}, husband\_pct_{itc} + \epsilon_{itc} \tag{2}$$

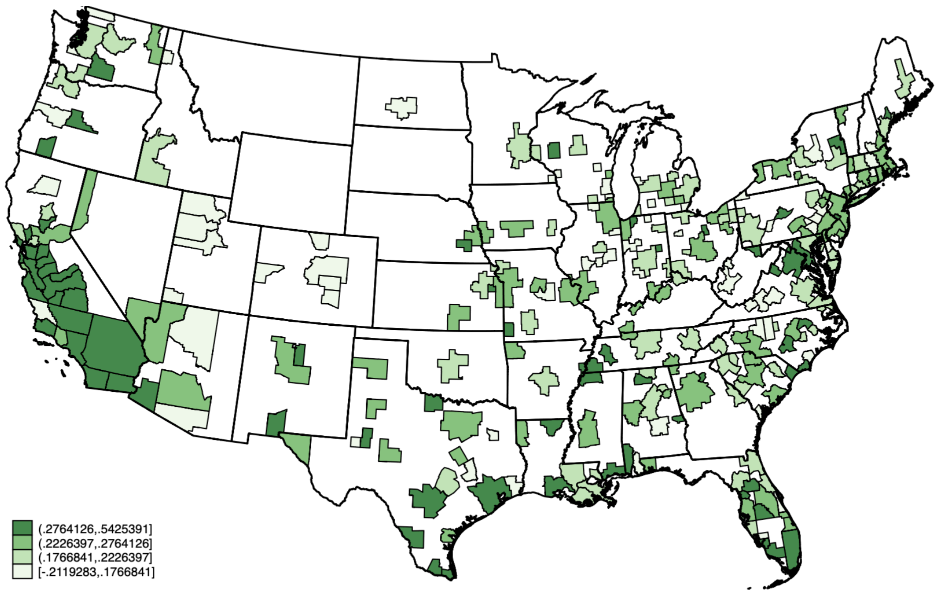
In this specification, men's and women's income percentiles are defined relative to their metropolitan statistical area, indexed by c, rather than the national distribution. The equation is estimated separately for each MSA–year pair, with distinct intercepts and slope coefficients (α_{tc} and β_{tc}). These MSA-level β estimates serve as our measure of local homogamy.

Figure 2 shows our MSA-level estimates on a map of the continental United States. Darker areas indicate regions with higher levels of homogamy, whereas lighter areas reflect weaker assortative matching. The figure reveals substantial geographic dispersion in homogamy across the country. Higher homogamy is concentrated in high-cost coastal metropolitan areas, particularly California, the Pacific Northwest, and the Northeast Corridor, while lower levels prevail across interior metropolitan areas and much of the South and Midwest. This spatial pattern closely parallels regional variation in cost of living, with the strongest homogamy estimates observed in high-cost, and especially high-housing-cost, areas.

To quantify the magnitude of this dispersion, Figure 3a plots the distribution of MSA-

[12] Chetty et al. (2014) employ rank–rank measures in a similar framework to study intergenerational mobility.

Figure 2. Hourly wage β Coefficients, 2019



Note: This figure maps the estimated slope of wife's hourly earnings rank on husband's hourly earnings rank (β) for each MSA in 2019. Coefficients are estimated from separate regressions of wife's rank on husband's rank within each MSA using ACS data. The sample includes married dual-earner couples ages 25–54.

level β estimates. The modal value is approximately 0.2, and homogamy is positive for the majority of MSAs. However, the range is wide: some regions exhibit coefficients as high as 0.5, while others fall slightly below zero. Figure 3b shows the unconditional relationship between local housing prices and the estimated β values by plotting each MSA's 2019 estimate against the log of its median housing price. To account for variation in MSA size, each marker is weighted by the number of married, dual-earner couples residing in that area. The figure suggests a positive association: MSAs with higher median housing prices tend to exhibit higher levels of homogamy. Specifically, the correlation coefficient is:

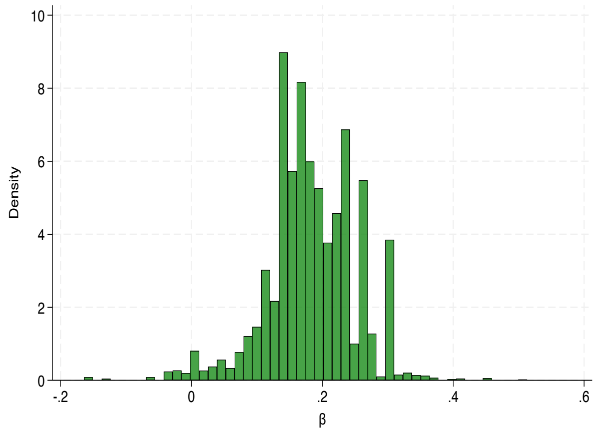
Overall, we find that there is substantial geographic dispersion in homogamy across the United States, with higher levels concentrated in expensive coastal metropolitan areas. In the next section, we more formally test the relationship between local housing prices and the degree of homogamy across metropolitan areas.

2.5 Income Homogamy and Housing Prices

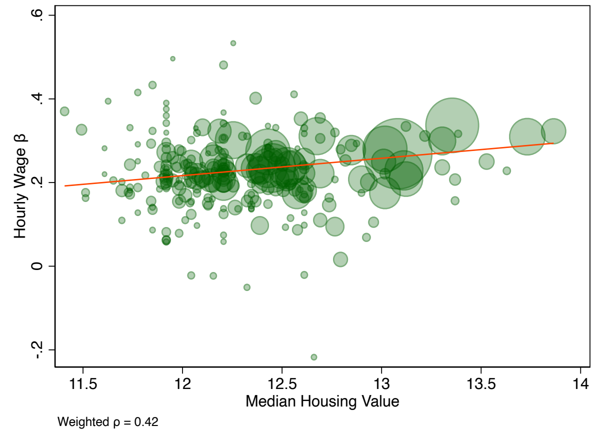
To formally test the relationship between housing prices and income homogamy, we estimate the following specification using a fixed-effects estimator:

$$wife\_pct_{tic} = \alpha + \beta * husband\_pct_{tic} + \delta\,(husband\_pct_{tic} * ln(hs\_price_{tc})) + \eta_{tc} + \epsilon_{tic} \quad (3)$$

Figure 3. Local βs and Housing Costs



(a) Distribution of βs



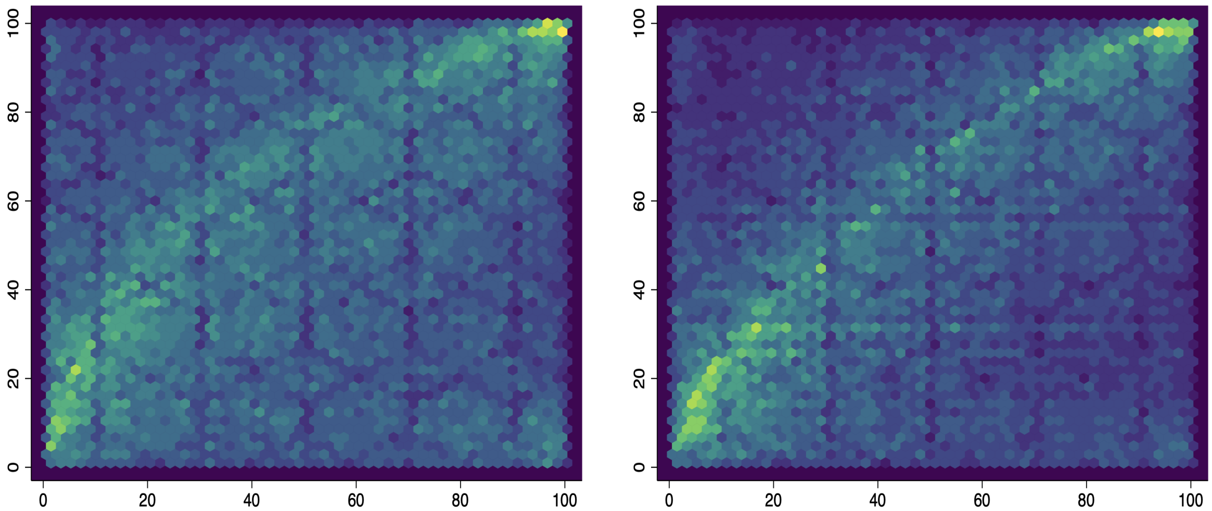
(b) Hourly Wage Homogamy by Housing Cost

Note: Panel a) shows the distribution of β coefficient estimates by MSA in 2019. For each MSA, β represents the coefficient of women's hourly earnings percentile on their husband's hourly earnings percentile. Panel b) plots these same β estimates by log median housing value in that MSA. The linear fitted (weighted) regression line is displayed in red. Plot markers weighted by sample size. Data taken from the ACS.

In Equation 3, the wife's percentile rank in the earnings distribution within her MSA-year is regressed on her husband's percentile rank, interacted with the log of median housing prices in that MSA-year. The coefficient of interest, δ, captures how the strength of income homogamy varies systematically with local housing prices. A positive δ implies that homogamy is stronger in more expensive housing markets. The inclusion of MSA-year fixed effects (η_{tc}) absorbs all local shocks and time-varying factors, such as changes in education composition, labor supply, or local wages, that could simultaneously affect both housing prices and marriage sorting. This ensures that identification comes from within-MSA variation in homogamy, conditional on local economic conditions.

Regression results from this equation are reported in Table 1. Column 3 shows that in the full sample, the estimate of δ is 0.065, which implies that a doubling of house prices is associated with an increase in homogamy of 0.065. Relative to a baseline β of 0.2, this represents more than a 30% increase. The result is statistically significant and robust across specifications. Column 5 replicates the analysis using hourly wages instead of total income, yielding a similar and significant estimate for δ.

Figure 4. Homogamy Heat Plots by Local Housing Costs



(a) Lowest housing cost decile

(b) Highest housing cost decile

Note: This figure plots the joint distribution of husband's and wife's hourly earnings ranks for married dual-earner couples in 2019 ACS data. Couples are divided into high- and low-housing-cost areas based on the top and bottom quintiles of their MSA's median house value distribution. Each panel shows a heat map of the density of couples across the joint rank–rank space; brighter colors indicate higher density.

3 A Causal Link from Housing Prices to Homogamy

We now turn to examining the direction of causality by instrumenting local housing prices with a measure of land use regulation stringency. This approach follows an established literature showing that more restrictive land use policies constrain housing supply and raise prices (Pollakowski and Wachter, 1990; Quigley and Raphael, 2005; Glaeser and Ward, 2009).

Panel measures of land use regulation are rare due to data limitations. A notable exception is Ganong and Shoag (2017), who proxy regulation intensity using the frequency of land use cases in state court and supreme court records. In our analysis, we rely on the Wharton Residential Land Use Regulatory Index (WRLURI), developed by Gyourko et al. (2008, 2021), which provides a comprehensive, survey-based measure of regulatory stringency across over 2,600 local jurisdictions. The WRLURI combines data from local planning surveys with administrative records on zoning, approval processes, and regulatory outcomes, such as approval rates and processing time. The resulting index, standardized to have a mean of zero and a standard deviation of one, captures the overall restrictiveness of land use policies in each locality. We aggregate the WRLURI to the MSA level using ACS population weights.

To measure changes in regulation over time, we use the "Regulation Change Index" in-

Table 1. Wife Wage Rank

	(1)	(2)	(3)	(4)	(5)
Husband wage rank	0.200***				
	(0.00415)				
College % × Husband wage rank		0.271***	0.0968***	0.144***	0.116***
		(0.0137)	(0.0152)	(0.0304)	(0.0353)
Q1 × Husband wage rank		0.0905***	0.238***	0.215***	0.220***
		(0.00584)	(0.00790)	(0.0153)	(0.0168)
Q2 × Husband wage rank		0.0810***	0.242***	0.225***	0.241***
		(0.00654)	(0.00795)	(0.0166)	(0.0179)
Q3 × Husband wage rank		0.0777***	0.246***	0.231***	0.244***
		(0.00731)	(0.00815)	(0.0169)	(0.0189)
Q4 × Husband wage rank		0.0791***	0.258***	0.219***	0.233***
		(0.00889)	(0.00842)	(0.0181)	(0.0199)
Q5 × Husband wage rank		0.127***	0.268***	0.242***	0.253***
		(0.0114)	(0.00931)	(0.0179)	(0.0208)
Constant	40.2***	40.3***	36.0***	34.7***	34.7***
	(0.208)	(0.0997)	(0.0676)	(0.114)	(0.120)
N	7,174,843	6,322,942	1,157,457	168,998	153,037
FE	Yes	Yes	Yes	Yes	Yes
F	2,319	4,846	7,717	2,188	1,942

Notes: The table reports results from regression (3) across multiple specifications. The dependent variable, Wife's Hourly Earnings Percentile, measures her earnings rank within the local metropolitan area. Husband Wage Rank denotes the husband's corresponding percentile within the local male earnings distribution. Columns (2) and (4) use quintiles (Q1–Q5) of contemporaneous MSA-level house prices, while columns (3) and (5) use the quintile at the couple's year of marriage. Columns (4) and (5) restrict the sample to couples married one year or less. College (%) represents the share of married adults with at least a college degree in each MSA. All models include year × 2013 MSA fixed effects (coefficients omitted). Standard errors (in parentheses) are clustered at the year × 2013 MSA level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *Source:* ACS, 2005–2021.

troduced by Gyourko and Krimmel (2021), which captures net changes in nine regulatory categories surveyed in both 2008 and 2018. This allows us to construct a panel of evolving regulatory stringency across MSAs. According to Gyourko et al. (2021), highly regulated areas typically feature multiple approval authorities, strict density rules, and greater involvement by public officials—features that tend to persist over time.

Our identification strategy assumes that changes in local land use regulation are orthogonal to changes in assortative matching on earnings, conditional on MSA-level income and labor force participation trends. This assumption is plausible if regulatory changes reflect

Table 2. IV Output: Wife's Hourly Earnings Percentile

	(1)	(2)
$hus\_pct \times ln(hs\_price)$	0.164^{***}	0.111^{*}
	(0.0357)	(0.0619)
hus_pct	-1.888^{***}	-1.142
	(0.463)	(0.805)
N	74202	12552
FE	Yes	Yes
F	174.1	218.8

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

local political and institutional processes unrelated to household-level earnings sorting.[13]

4 Model

This section presents a general equilibrium model that combines a spatial structure of cities with a search-and-matching framework of marriage. The model embeds the spatial environment of Gyourko et al. (2013) into the matching model of Shimer and Smith (2000) to study how housing costs and skill concentration jointly shape the degree of assortative mating across locations. Agents differ by gender and productivity and choose where to live before entering the marriage market. Locations differ in both the returns to productivity and the elasticity of housing supply, which together determine local wages, housing costs, and the composition of residents.

4.1 Environment

Time is continuous and infinite, and future utility is discounted at rate $\rho > 0$. The economy consists of two locations: the *Available City* (A) and the *Superstar City* (S). The Available City has perfectly elastic housing supply and a normalized rent $R_A = 0$. The Superstar City faces barriers to development that limit its housing supply. Its capacity $K(R_S)$ increases with rents R_S only when higher prices make new construction profitable, with $K'(R_S) \geq 0$. When $K'(R_S) = 0$, supply is completely inelastic, so rents must rise to clear the market as population grows. This friction generates equilibrium differences in housing costs across

[13] A possible violation of this assumption is reverse causality: if rising homogamy drives up demand for housing and thus prompts more restrictive land use policies. However, this would challenge the broader literature on regulation-driven housing prices. An alternative, potentially stronger, instrument would be geographic constraints on housing supply (e.g., Saiz 2010), which we leave for future work.

cities.

4.2 Agents

The total mass of individuals is normalized to one, with a share $N_f \in (0,1)$ female and a share $N_m = 1 - N_f$ males. Each individual is risk-neutral and indexed by gender $g \in \{m, f\}$ and productivity $x \in \mathbb{R}_+$. Productivity translates directly into wages, but the return to productivity differs across locations. A worker of type x in location $\ell \in \{A, S\}$ earns

$$w_\ell(x) = \begin{cases} x, & \text{if } \ell = A, \\ \\ y_0 + yx, & \text{if } \ell = S, \end{cases}$$

where $y_0 > 0$ and $y \geq 1$ capture the Superstar City's productivity advantage arising from agglomeration economies, network effects, or better job opportunities. Hence, the Superstar City is both more productive and more expensive.

Each individual chooses where to live before entering the marriage market, trading off the higher wage and rent in the Superstar City against the lower income but cheaper housing in the Available City. Once a location is chosen, individuals only interact with others in the same city. This local matching assumption ensures that spatial variation in housing markets and wages translates into differences in marriage-market selectivity.

Search and Matching. Within each location $\ell \in \{A, S\}$, single men and women meet randomly over time. Let $g_m(x_m, \ell)$ and $g_f(x_f, \ell)$ denote the densities of single men and women of productivity x_m and x_f in city ℓ. The total masses of singles are

$$G_m(\ell) = \int g_m(x_m, \ell)\, dx_m, \quad G_f(\ell) = \int g_f(x_f, \ell)\, dx_f.$$

The probability that a single individual meets a potential partner depends on the total mass of singles of the opposite gender in that city. A single man meets potential female partners at rate

$$\lambda_m(\ell) = \lambda\, G_f(\ell),$$

and symmetrically, a single woman meets potential male partners at rate

$$\lambda_f(\ell) = \lambda\, G_m(\ell),$$

where $\lambda > 0$ captures the efficiency of the local marriage market. Conditional on a meeting, the productivity of the potential partner is drawn from the *conditional density* $g_j(x_j, \ell)/G_j(\ell)$, which gives the probability of meeting a type-x_j individual among all available singles of that gender. When a man and a woman meet, they observe each other's productivities and draw an idiosyncratic match quality $\gamma \sim \Gamma(\gamma)$, distributed on $[\underline{\gamma}, \overline{\gamma}]$. Given this realization, the couple decides whether to marry based on the joint surplus that the match would generate.

Preferences and Utilities. Singles consume their income net of local housing costs. The instantaneous utility of a single individual i of productivity x in location ℓ is

$$u^s(x_i, \ell) = w_\ell(x_i) - R_\ell.$$

If a man of type x_m and a woman of type x_f marry in location ℓ, they pool their incomes and enjoy a match quality γ. Married couples share housing and experience economies of scale in rent payments: each spouse effectively pays only a fraction $\alpha/2$ of what a single would pay, with $\alpha \in (0,1)$ denoting the total rent burden of the household. The instantaneous flow utilities from marriage are

$$\begin{aligned} u_m^m(x_m, x_f, \gamma, \ell) &= (1-\beta)\big[w_\ell(x_m) + w_\ell(x_f)\big] - \alpha R_\ell + \gamma, \\ u_f^m(x_m, x_f, \gamma, \ell) &= \beta\big[w_\ell(x_m) + w_\ell(x_f)\big] - \alpha R_\ell + \gamma, \end{aligned}$$

where $\beta \in (0,1)$ is the woman's bargaining weight in the division of surplus.

4.3 Value Functions and Marital Surplus

Let $V_i^s(x_i, \ell)$ denote the lifetime value of being single for an individual of gender $i \in \{m, f\}$ and productivity x_i in location ℓ, and let $V_i^m(x_m, x_f, \gamma, \ell)$ denote the value of being married. Singles receive the flow utility $u^s(x_i, \ell)$ and meet potential partners at rate $\lambda_i(\ell)$. Upon meeting, they evaluate whether the expected marital surplus is positive. The Bellman equation for a single individual is:

$$\rho V_i^s(x_i, \ell) = u^s(x_i, \ell) + \lambda_i(\ell) \iint \max\{S(x_m, x_f, \gamma, \ell), 0\} \, \frac{g_j(x_j, \ell)}{G_j(\ell)} \, d\Gamma(\gamma) \, dx_j, \tag{4}$$

where $S(x_m, x_f, \gamma, \ell)$ denotes the *total marital surplus* from the match. The term $g_j(x_j, \ell)/G_j(\ell)$ ensures that the integral averages over the distribution of partner types conditional on meeting, rather than over the entire population of singles. The value of being married satisfies:

$$\rho V_i^m(x_m, x_f, \gamma, \ell) = u_i^m(x_m, x_f, \gamma, \ell) + \delta\big[V_i^s(x_i, \ell) - V_i^m(x_m, x_f, \gamma, \ell)\big], \tag{5}$$

where δ is the Poisson rate of exogenous separation (death or divorce). The first term captures the flow utility from marriage, including joint income, housing consumption, and match quality, while the second term accounts for the expected loss in case of divorce, weighted by its arrival rate.

Nash Bargaining. The total marital surplus between partners (x_m, x_f) in location ℓ is the total lifetime value that marriage generates relative to the option value of each partner remaining single:

$$S(x_m, x_f, \gamma, \ell) = V^m_m(x_m, x_f, \gamma, \ell) + V^m_f(x_m, x_f, \gamma, \ell) - V^s_m(x_m, \ell) - V^s_f(x_f, \ell).$$

Following Foerster et al. (2024), spouses divide the marital surplus through Nash bargaining with weights $(1-\beta, \beta)$. Given total surplus $S(x_m, x_f, \gamma, \ell)$, the equilibrium division satisfies:

$$V^m_m(x_m, x_f, \gamma, \ell) - V^s_m(x_m, \ell) = (1-\beta)\, S(x_m, x_f, \gamma, \ell),$$

$$V^m_f(x_m, x_f, \gamma, \ell) - V^s_f(x_f, \ell) = \beta\, S(x_m, x_f, \gamma, \ell).$$

A marriage occurs if and only if $S(x_m, x_f, \gamma, \ell) \geq 0$. As shown in Foerster et al. (2024), this outcome can equivalently be derived from a bargaining problem with transfers t_m and t_f between spouses that ensure the Nash solution maximizes the weighted product of individual gains from marriage. The transfers adjust payoffs so that each spouse receives exactly their bargaining share of the total surplus, yielding the linear split above. Because transfers are fully internal to the couple, they affect the distribution of gains but not the total surplus or the marriage decision itself.

4.4 Equilibrium

We now characterize the steady-state equilibrium in both the marriage and housing markets. The sequence of events is as follows. First, individuals choose a city $\ell \in \{A, S\}$ to maximize expected utility, taking rents and local matching conditions as given. Then, singles in each city meet potential partners randomly over time and decide whether to marry based on realized match quality and expected surplus. Married couples separate exogenously at rate δ, re-entering the pool of singles in the same city. This dynamic process determines the steady-state distribution of singles, married couples, and local housing demand.

Steady–State Marriage Market. Within each city ℓ, let $c(x_m, x_f, \ell)$ denote the steady-state mass of married couples with characteristics (x_m, x_f). In steady state, the inflow of new marriages equals the outflow from exogenous separations:

$$\delta\, c(x_m, x_f, \ell) = \lambda\, g_m(x_m, \ell)\, g_f(x_f, \ell)\, \alpha(x_m, x_f, \ell), \tag{6}$$

where $\alpha(x_m, x_f, \ell) \equiv \Pr_\Gamma\big[S(x_m, x_f, \gamma, \ell) \geq 0\big]$ is the probability that a match yields non-negative surplus. Here, λ is the primitive matching efficiency, so a man of type x_m meets potential partners at rate $\lambda G_f(\ell)$. Let

$$N_m(x_m, \ell) \equiv g_m(x_m, \ell) + \int c(x_m, x_f, \ell)\, dx_f,$$
$$N_f(x_f, \ell) \equiv g_f(x_f, \ell) + \int c(x_m, x_f, \ell)\, dx_m,$$

be the total mass of men and women of each type in location ℓ, including singles and married individuals. Integrating (6) over potential partners yields the steady-state balance for singles:

$$g_m(x_m, \ell) = \frac{\delta\, N_m(x_m, \ell)}{\delta + \lambda \int g_f(x_f, \ell)\, \alpha(x_m, x_f, \ell)\, dx_f}, \tag{7}$$

$$g_f(x_f, \ell) = \frac{\delta\, N_f(x_f, \ell)}{\delta + \lambda \int g_m(x_m, \ell)\, \alpha(x_m, x_f, \ell)\, dx_m}. \tag{8}$$

where we substituted $g_m(x_m, \ell) = N_m(x_m, \ell) - \int c(x_m, x_f, \ell)\, dx_f$ and $g_f(x_f, \ell) = N_f(x_f, \ell) - \int c(x_m, x_f, \ell)\, dx_m$ in equation (6). These identities imply that inflows from divorce exactly offset outflows to new marriages, so that the distributions are constant in steady state.

Housing Market Equilibrium. Housing demand must equal housing supply in each city. Let H_ℓ denote the steady-state measure of households in city ℓ (each single individual and each married couple occupies one unit). The Superstar City clears when

$$H_S = \int g_m(x, S)\, dx + \int g_f(x, S)\, dx + \iint c(x_m, x_f, S)\, dx_m\, dx_f = K(R_S), \tag{9}$$

where $K(R_S)$ is the city's housing supply. We assume a linear form,

$$K(R_S) = \bar{K}_0 + \kappa(R_S - R_0),$$

with $\kappa > 0$ denoting the supply elasticity. In the Available City, supply is perfectly elastic, so $R_A = 0$ and H_A adjusts endogenously.

Location Choice and Consistency. Before entering the marriage market, individuals choose a location $\ell \in \{A, S\}$ to maximize expected lifetime utility. Let $\pi_\ell^g(x) \in \{0, 1\}$ indicate the location chosen by an individual of gender g and type x:

$$\pi_\ell^g(x) = \begin{cases} 1, & \text{if } V_g^s(x, \ell) \geq V_g^s(x, \ell'), \\ 0, & \text{otherwise.} \end{cases}$$

These choices determine the aggregate type distributions $N_g(x, \ell)$ used above. In equilibrium, expectations are consistent:

$$\pi_\ell^g(x) = \tilde{\pi}_\ell^g(x), \qquad \forall x, g, \ell,$$

where $\tilde{\pi}$ denotes the location decisions implied by the endogenous rents, marriage rates, and value functions.

Definition 1. *A* steady-state equilibrium *is a collection* $\{V_i^s(x, \ell), g_i(x, \ell), c(x_m, x_f, \ell), R_\ell, \pi_\ell^g(x)\}$ *such that:*

1. *Value functions satisfy the Bellman equations (4)–(5);*
2. *The steady-state distributions (7)–(8) hold in each location;*
3. *Housing markets clear via* (9)*;*
4. *Location choices are optimal and consistent with equilibrium distributions.*

In equilibrium, high-productivity individuals disproportionately sort into the Superstar City to benefit from higher wages despite higher rents. This self-selection increases the concentration of productive workers in expensive areas, reinforcing assortative matching and generating a spatial gradient in income homogamy: assortative mating is stronger in high-cost, high-productivity cities and weaker in affordable ones.

5 Conclusion

This paper studies how housing markets and spatial inequality shape marriage formation and assortative matching in the United States. We document that income homogamy is significantly higher in metropolitan areas with both higher housing costs and a larger share of college-educated workers. Using variation in local land-use regulations to instrument for housing prices, we show that these relationships are causal: more stringent regulation, by raising rents, strengthens assortative matching on income.

We rationalize these empirical patterns through a quantitative model that embeds a search-and-matching framework of marriage within a spatial economy with heterogeneous productivity and housing supply elasticities. The model highlights two mechanisms linking housing markets to assortative mating. First, a *composition effect*: as high-skill workers sort into productive, high-cost cities, local marriage markets become more homogeneous. Second, a *preference effect*: as housing costs rise, singles become more selective, since the affordability of housing depends increasingly on joint income. Together, these forces explain both the cross-sectional dispersion in homogamy across cities and its aggregate rise over recent decades.

Counterfactual exercises underscore the role of housing supply constraints in amplifying inequality within households. Relaxing land-use regulation or expanding housing capacity would reduce local housing costs, weaken the preference channel, and thereby lower the degree of assortative mating. These results suggest that urban housing policy can have far-reaching implications not only for spatial inequality and labor mobility, but also for the formation and composition of households.

By linking housing frictions to marriage markets, this paper provides a new perspective on how urban and family economics interact. Spatial inequality does not only affect where people live and work, but also whom they marry—and, consequently, how income inequality evolves within and across households.

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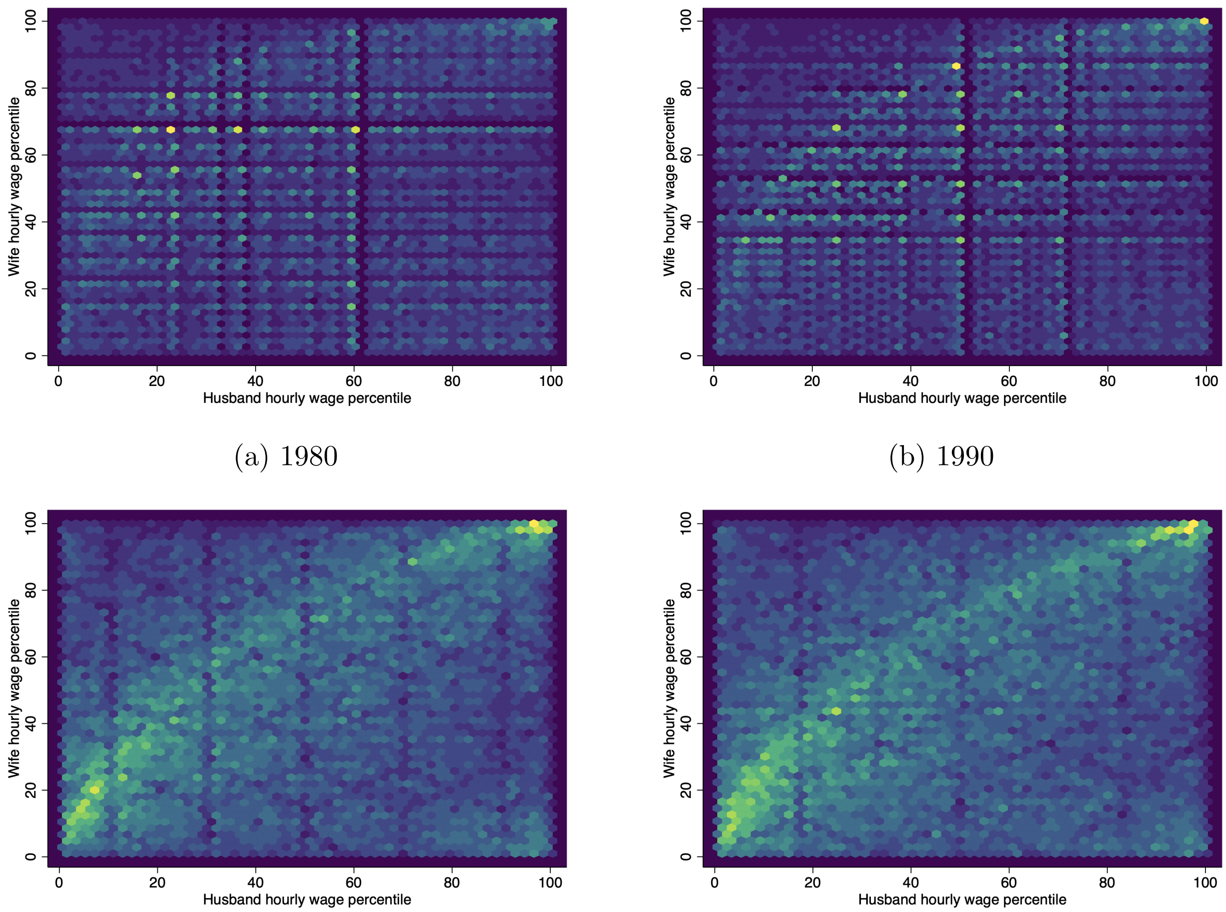
Appendix

A Additional Figures

To understand which couples are driving changes in homogamy we plot a series of "heat maps" that represent sorting between couples over time and over geography. The x-axis of each plot represents the hourly wage percentile of married men with working wives. Similarly, the y-axes represent the hourly wage percentile of women with working husbands. In these graphs, lighter colors represent areas of the joint distribution with a greater mass of observations. For example, in the 2019 plot, the bright mass in the top right corner means a concentration of high-earning men married to high-earning women.

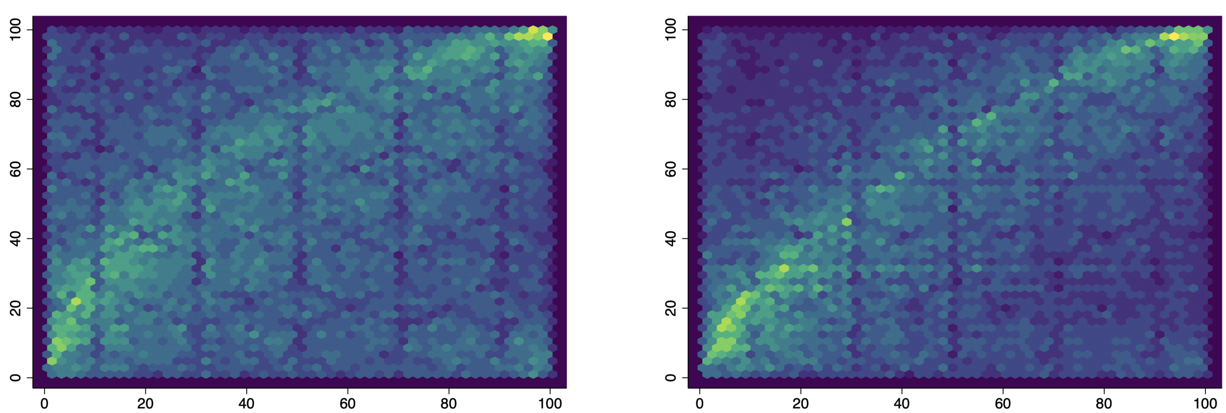
The heat maps reveal two main points. Firstly, the visible line becomes stronger over time. This is due to an increase in homogamy. It seems that homogamy across the entire distribution is driving the increase in homogamy, although the very top and the very bottom of the distribution seem to be particular drivers. Secondly, the line of strongest matching is concave over the entire sample period, but becomes increasingly less so over time, becoming more and more similar to a linear function over time. This means that there are less low-percentile women who are married to top percentile men.



(a) 1980 (b) 1990

(c) 2010 (d) 2019

Figure 5. Spousal Hourly Earnings Homogamy Heat Maps



(a) Bottom 10 % (b) Top 10 %

Figure 6. Spousal Hourly Earnings Homogamy Heat Maps by Price

Figure 7. Housing Price Measures