The Role of Marriage Markets in the Inter-Metropolitan Distribution of Skilled Couples

Abstract

Costa and Kahn (2000) hypothesized that dual-degree couples migrate to large cities in order to solve their dual-employment problem. However, there is only limited empirical evidence in support of this hypothesis. This research presents an alternative explanation: The inter-metropolitan distribution of skilled couples is largely the result of marriages among skilled singles in large cities. The relative merits of both the "colocation" and "marriage market" hypotheses are evaluated by comparing the effects of migration and marriage on the inter-metropolitan distribution of dual-degree couples using data from the 2008 American Community Survey. Migration is found to have little effect on the distribution of dual-degree couples. Rather, the concentration of dual-degree couples is strongly related to the high rate of marriages among single college graduates in large cities. This research highlights the need for research concerning the distribution of skilled workers to examine migration behavior more closely.

Introduction

The density of skilled individuals in a region is an important determinant of economic growth (Storper and Scott 2009). In a trend that may herald increasing regional economic divergence, the concentration of skilled individuals in large cities appears to be increasing (Berry and Glaeser 2005; Waldorf 2009). Migration is assumed to be an important factor in this trend: For example, Florida (e.g. Florida 2002) argues that individuals comprising the "creative class" are attracted to large, diverse cities with a tolerant urban lifestyle, while Glaeser (e.g. Glaeser and Mare 2001) argues that college graduates migrate to large, highly skilled cities in search of opportunities to enhance their own human capital, productivity, and income. Nonetheless, there are relatively few studies that directly analyze the role of migration in shaping the geographic distribution and concentration of skilled individuals (Hansen and Niedomysl 2009).

This analysis responds to previous research regarding the role of migration in shaping the inter-metropolitan distribution of skilled married couples. Costa and Kahn's (2000) "colocation hypothesis" posits that dual-degree couples migrate to large cities in order to solve their dual-employment problem. However, there is only limited empirical evidence in support of this hypothesis. This research presents an alternative explanation: The inter-metropolitan distribution of skilled couples is largely the result of marriages among skilled singles in large cities. The relative merits of both the colocation and "marriage market" hypotheses are evaluated by comparing the effects of migration and marriage on the inter-metropolitan distribution of dual-degree couples using data from the 2008 American Community Survey.

Background

Empirical research concerning the inter-metropolitan distribution of skilled couples has focused on Mincer's (1978) hypothesis that dual-employed couples may be drawn to large labor markets to solve their dual-employment problem: ". . . to the extent that both [spouses] are motivated by job opportunities, the dissimilarity in locational specificities . . might be reduced by a tendency for such families to locate in large, diversified labor markets (Mincer 1978, 755)." Costa and Kahn's (2000) "colocation" hypothesis revived Mincer's hypothesis by emphasizing that large labor markets would be particularly attractive for couples where both spouses have college degrees.

However, there is little evidence that the migration of skilled married couples plays a strong role in the concentration of skilled married couples in large cities. First, there is almost no empirical evidence that married couples make migration decisions to maximize the employment opportunities of both spouses equally. Family migration decisions are generally made to benefit the husband's employment, frequently at the expense of the wife's employment (e.g. Lichter 1982; Bird and Bird 1985; Shihadeh 1991; Jacobsen and Levin 1997; LeClere and McLaughlin 1997; Boyle, Cooke et al. 2001; Compton and Pollak 2007; Cooke 2008; Cooke, Boyle et al. 2009; Blackburn 2010). This holds true even among contemporary dual-career couples (Cooke 2003), and is generally accepted to reflect the continued importance of gender in family migration decisions (Cooke 2001; Cooke 2008; Cooke 2008). To presume that married couples, on average, migrate to large cities to solve their dual-employment problem runs counter to decades of empirical evidence. Second, Compton and Pollak (2007) question the primary assumption behind Costa and Kahn's (2000) colocation hypothesis that power coupes need to move to large, diverse labor markets to solve their dual-employment problem:

> The plausible-sounding hypothesis based on academic job markets is misleading because the typical power couple is not one PhD married to another PhD but a high school teacher married to a nurse. These more typical dual-degree couples do not need to locate in New York or Los Angeles to solve their colocation problem (Compton and Pollak 2007, 506).

Finally, at an aggregate level the direction of family migration is down, not up, the urban hierarchy as even dual-employed couples are (slowly) leaving large metropolitan areas in search of family-specific amenities and a lower cost of living in medium-sized metropolitan areas (Withers and Clark 2006; Withers, Clark et al. 2008). Whisler, Waldorf et al. (2008) find a similar pattern with respect to married college-educated householders.

Gautier, Svarer et al. (2010) provide another explanation for the concentration of skilled couples in large cities that only indirectly depends upon migration behavior.[1] They argue that skilled singles migrate to large cities with a high density of other skilled singles not only because of career opportunities and urban amenities but also because the high density of skilled singles in these urban areas means they also function as highly efficient marriage markets. From this perspective, the concentration of skilled couples in large cities is largely due to the formation of skilled marriages.

Several points are worth noting regarding Gautier, Svarer et al.'s (2010) marriage market hypothesis. First, the concentration of skilled singles in large cities may not be due entirely to the in-migration of skilled singles but may also be the result of a higher rate of human capital investment among the residents of large cities (Glaeser and Resseger 2009). Second, Gautier, Svarer et al. (2010) argue that once married, the marriage-market benefit to living in a large, dense city disappears, which would cause the net out-migration of married couples from large cities. Thus, the marriage market hypothesis is consistent with observed empirical patterns of the migration of college-educated singles up the urban hierarchy and the migration of families with a college-educated householder down the urban hierarchy (Whisler, Waldorf et al. 2008).

To synthesize, this research hypothesizes that the concentration of skilled couples in large cities is the result of a high rate of new marriages among skilled singles in those same cities and that the migration of skilled couples actually acts to reduce the concentration of skilled couples in large cities. The merits of the marriage market hypothesis, as well as the colocation hypothesis, are evaluated by estimating the relative effects of migration and marriage on the inter-metropolitan distribution of dual-degree couples using data from the 2008 American Community Survey.

Data and Methods

The data for this analysis is drawn from the 2008 IPUMS version of the American Community Survey (Ruggles, Alexander et al. 2010). The ACS is a 1% sample of the U.S. population administered by the U.S. Bureau of the Census and includes, among a host of other individual- and household-level variables, metropolitan place of residence in 2007 and 2008, marital status, level of education, and, for the first time in the ACS, the ability to identify couples who married in the previous year. The sample also includes individual-level weights to obtain nationally representative descriptive statistics. One limitation is the small sample size for some specific derived variables (e.g. number of new marriages in a metropolitan area) and

[1] The role of marriage markets in the concentration of skilled couples in large cities is briefly discussed by both Costa and Kahn (2000) and Compton and Pollack (2007).

therefore latter parts of this analysis focus on just the 50 largest metropolitan areas rather than the complete sample of all metropolitan areas.

Following Costa and Kahn (2000) and Compton and Pollak (2000), the analysis simply focuses on two subpopulations: College graduates married to other college graduates ("dual-degree couples") and single college graduates ("single college graduates"). Married couples in which one or more of the spouses lack a college degree are not included in the analysis. That the sample is limited to college graduates effectively places a lower age restriction of approximately 21 years of age. The presence of other family members, such as children, or other household members, such as unmarried partners, is not considered in identifying either married couples or single individuals. As a result, cohabiting individuals are treated as single. Also following previous research, employment status is not considered in identifying dual-degree couples and single college graduates: The benefits to the concentration of college graduates in a metropolitan area extend beyond whether or not they are employed (e.g. Glaeser and Mare 2001) and employment status among married spouses is endogenous to metropolitan area (Withers and Clark 2006; Withers, Clark et al. 2008). Finally, the analysis is limited to residents of metropolitan areas where the definitions of metropolitan areas are as reported by the ACS based upon 2000 CMSA and MSA boundaries.

The purpose of this research is to estimate the role of marriage formation and migration on the inter-metropolitan distribution of dual-degree couples. However, there are several processes that shape the inter-metropolitan distribution of dual-degree couples: 1) the in-migration of dual-degree couples into a metropolitan area, 2) the out-migration of dual-degree couples from a metropolitan area, 3) the formation of new dual-degree couples through the marriage of singles college graduates, 4) the formation of new dual-degree couples through the completion of education of by one or more spouses in an existing marriage, and 5) the dissolution of dual-degree couples through death or divorce. Since the 2008 ACS cannot identify the last two processes these are treated as a residual.

From a demographic accounting framework, the change in the number of dual-degree couples (*dual*) in any metropolitan area (*m*) between 2007 and 2008 is defined as the number of in-migrating dual-degree couples (*in-migrants*), less the number of out-migrating dual-degree couples (*out-migrants*), plus the number of newly married dual-degree couples (*newly married*), plus the residual change (*residual*) between 2007 and 2008:

$$dual_{2008,m} - dual_{2007,m} = in\,migrants_{2007\Rightarrow 2008,m} - out\,migrants_{2007\Rightarrow 2008,m} + newly\,married_{2007\Rightarrow 2008,m} + residual_{2007\Rightarrow 2008,m}$$

The balance of the number of in-migrants less the number of out-migrants is redefined as *net migration*:

$$dual_{2008,m} - dual_{2007,m} = net\,migration_{2007\Rightarrow 2008,m} + newly\,married_{2007\Rightarrow 2008,m} + residual_{2007\Rightarrow 2008,m}$$

Raw numbers are transformed into rates by dividing both sides by the estimated mid-year population and distributing the denominator across all terms on the right hand side:

$$\frac{dual_{2008,m} - dual_{2007,m}}{\left(\left(dual_{2008} + dual_{2007}\right)/2\right)} = \frac{net\ migration_{2007\Rightarrow 2008,m}}{\left(\left(dual_{2008} + dual_{2007}\right)/2\right)} + \frac{newly\ married_{2007\Rightarrow 2008,m}}{\left(\left(dual_{2008} + dual_{2007}\right)/2\right)} + \frac{residual_{2007\Rightarrow 2008,m}}{\left(\left(dual_{2008} + dual_{2007}\right)/2\right)}$$

This decomposes the percent change in the number of all dual-degree couples living in any particular metropolitan area into the change due to net migration and new marriages.[2]

In the following analysis the inter-metropolitan distribution of dual-degree couples is compared with the rate of net migration and new marriages to test the colocation and marriage market hypotheses. Note that while the residual factor is not inconsequential it is not examined in the following analysis since it reflects any number of processes (divorce, death, joint events, and measurement error) that cannot be directly addressed through this data. Therefore, the discussion will focus solely on the effects of net migration and new marriages on the inter-metropolitan distribution of dual-degree couples.

Results

Figure 1 shows the relationship between the percent of the total population in a metropolitan area relative to the percent of the total number of dual-degree couples in each metropolitan area. These data are calculated using all metropolitan areas. The 45-degree line separates those metropolitan areas with a disproportionately large share of dual-degree couples (those above the line) from those with a disproportionately small share of dual-degree couples (those below the line). The assumption of previous research that dual-degree couples are concentrated in the largest metropolitan areas is supported. In particular, the ten metropolitan areas with the largest share of dual-career couples (identified on Figure 1) have 37.3% of the total number of dual-degree couples but contain only 32.6% of the total U.S. metropolitan population.

Figure 2 clarifies the distinctions highlighted in Figure 1 by plotting the share of single college graduates versus the share of dual-degree couples. The distribution of dual-degree couples is roughly proportional to the distribution of single college graduates. This is consistent with the marriage market hypothesis and inconsistent with the colocation hypothesis: If migration were driving the concentration of dual-degree couples into large cities the relationship between these two variables would be steeper indicating an in-migration of dual-degree couples in excess of the supply of single college graduates.

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[2] In calculating these values, newly married migrants are treated as migrants because it is assumed that they had formed a union prior to migration (e.g. they may have been engaged or cohabiting prior to migration).

Figures 3 through 6 provide the primary test of the research hypotheses. These values are calculated only for the 50 largest metropolitan areas and so differ, slightly, from Figures 1 and 2. Figure 3 shows the relationship between the percent change in the dual-degree population in each metropolitan area relative to the share of the dual-degree population living in each metropolitan area. The range of values is relatively small, ranging from about -0.17% to 0.22%. As well, there is no strong relationship with city size suggesting that the concentration of dual-degree couples in large cities is not increasing or decreasing in any dramatic fashion.

Figure 4 shows the relationship between the net migration rate and the share of dual-degree couples. As expected, this relationship is weakly negative. For many smaller cities the migration of dual-degree couples contributes to an increase in their share of dual-degree couples. However, for large cities, and especially for the three largest dual-degree cities (New York, Los Angeles, and Chicago), migration acts to reduce their share of dual-degree couples. However, note that the size of the migration effect is relatively small, ranging from about -0.08 to 0.06%, compared with an overall rate of change of between -0.17% to 0.22% (see above). The conclusion to be drawn is that the concentration of dual-degree couples in large cities is not due to the migration of dual-degree couples into those cities. Rather, migration actually acts to reduce the concentration of dual-degree couples in most large cities and even in those large cities where the effect of migration is positive the size of the effect is quite small.

Figure 5 plots the marriage effect against the share of dual-degree couples. Confirming the research hypothesis, new marriages are positively related to the share of dual-degree couples in a metropolitan area. To some extent this is an obvious result: Large cities have a greater number of people at-risk for becoming married and so there should be a very strong relationship between city size and the number of new marriages. However, this result is important in the context of previous research and Figure 4. Previous research has focused on migration as the driving force in the concentration of dual-degree couples in large cities. Figure 4 shows that if migration has any effect it is negative, not positive, and Figure 5 demonstrates that the process that drives the concentration of dual-degree couples in large cities is marriage. Furthermore, the scale of the migration effect is quite small compared to the scale of the marriage effect. Indeed, for New York City, new dual-degree marriages added an additional 0.37% to its dual-degree couple population between 2007 and 2008.

Conclusion

Previous research on the inter-metropolitan distribution of skilled couples has emphasized the role of migration. This research argues against Costa and Kahn's (2000) colocation hypothesis that dual-degree couples are increasingly concentrated in large cities as a means for solving their dual employment problem. Rather it is argued that the concentration of dual-degree couples in large cities is due to the high rate of marriages among power singles in large cities. The results clearly demonstrate that the concentration of dual-degree couples in large cities is

largely due to the high rates of marriage among single college graduates in large cities. Indeed, migration acts to reduce the concentration of dual-degree couples in these cities. This last point is important as it suggests that the role of migration in shaping the inter-metropolitan distribution of skilled workers is much more complex than this literature frequently presumes. Indeed, future research that builds upon this research needs to explore the interconnections between marriage, migration and the life course using individual-level panel data and longitudinal methods.

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Figure 1: Distribution of Dual–Degree Couples Relative to the Total Population

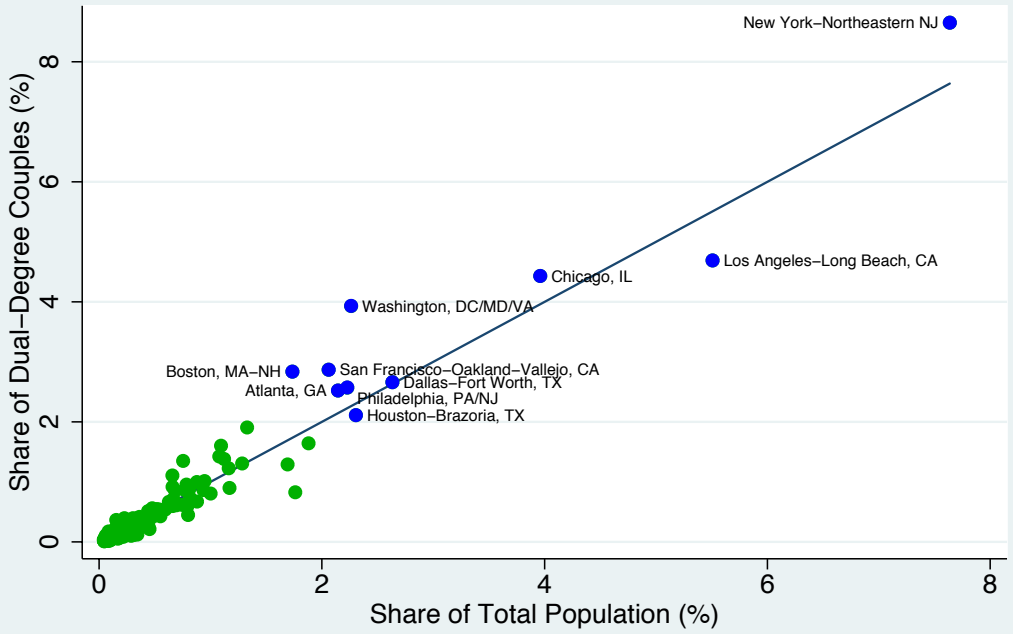


Figure 2: Distribution of Dual–Degree Couples Relative to Single College Graduates

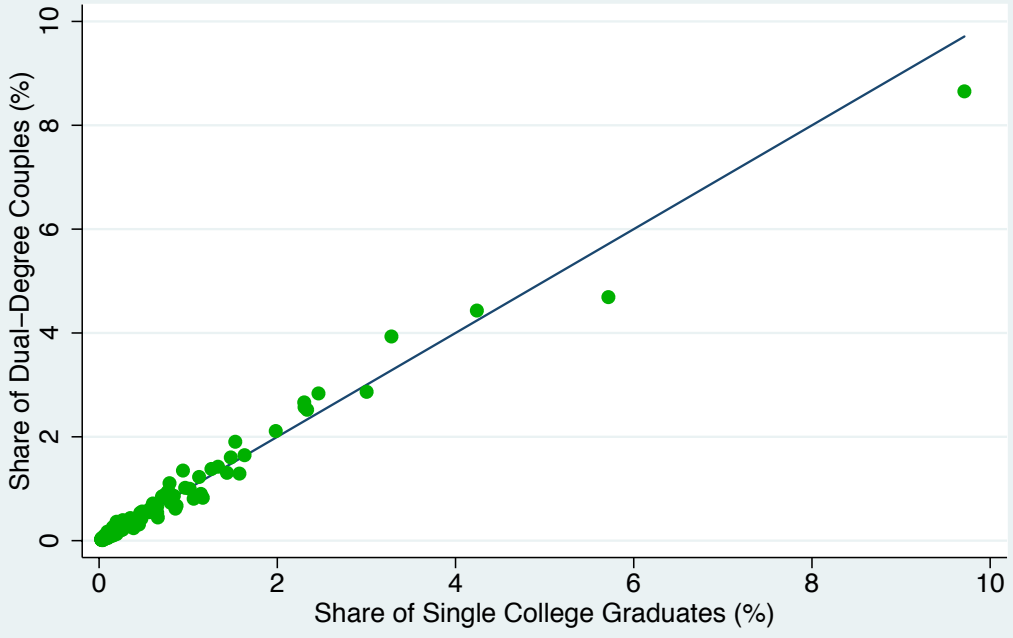


Figure 3: Change in Dual–Degree Couples

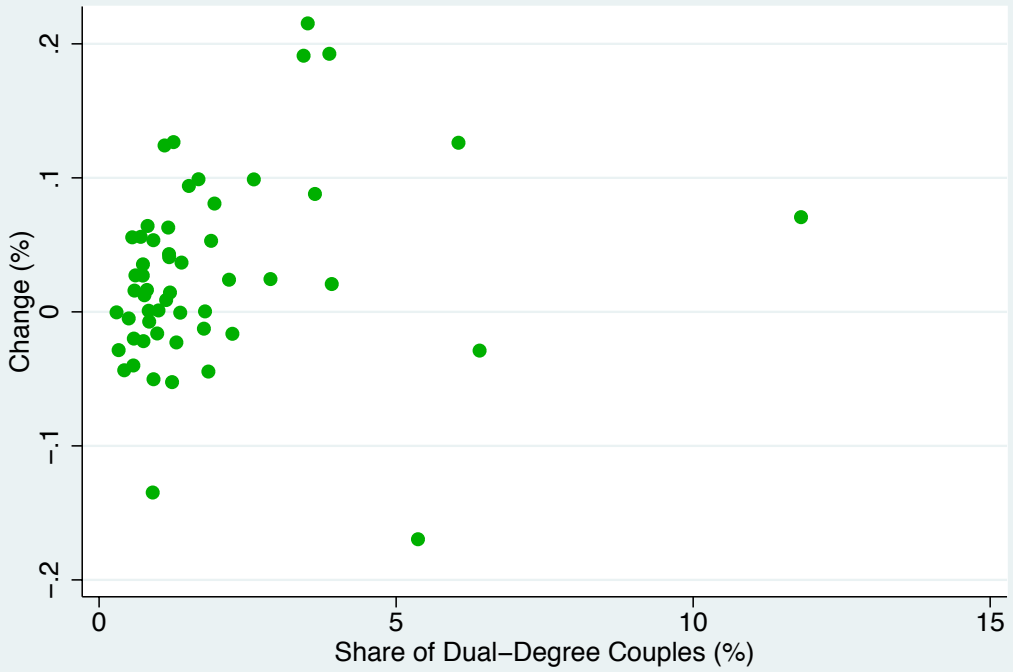
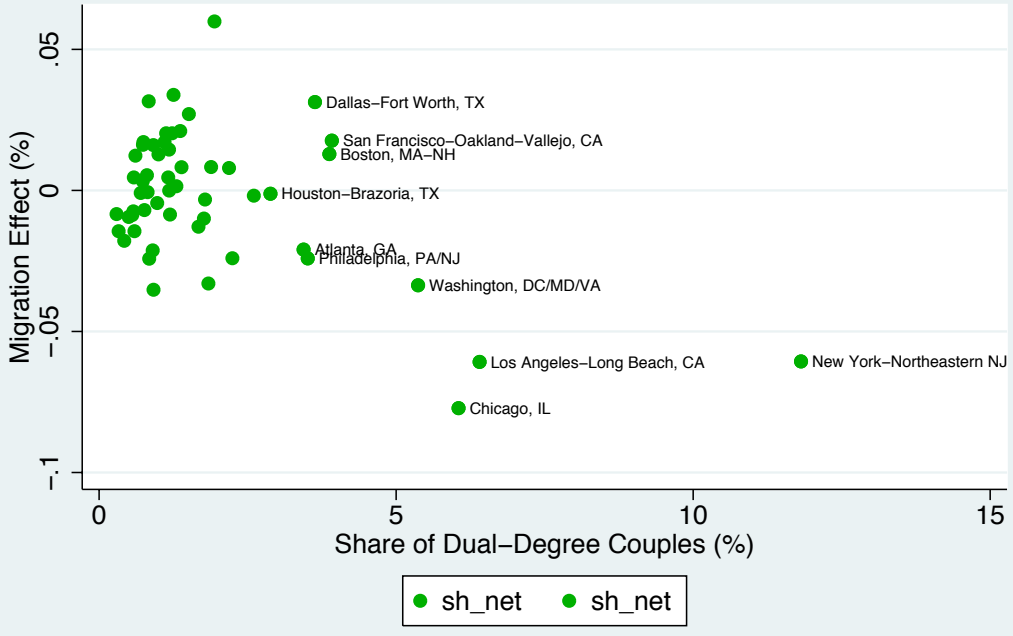


Figure 4: Migration Effect Relative to Share of Dual–Degree Couples



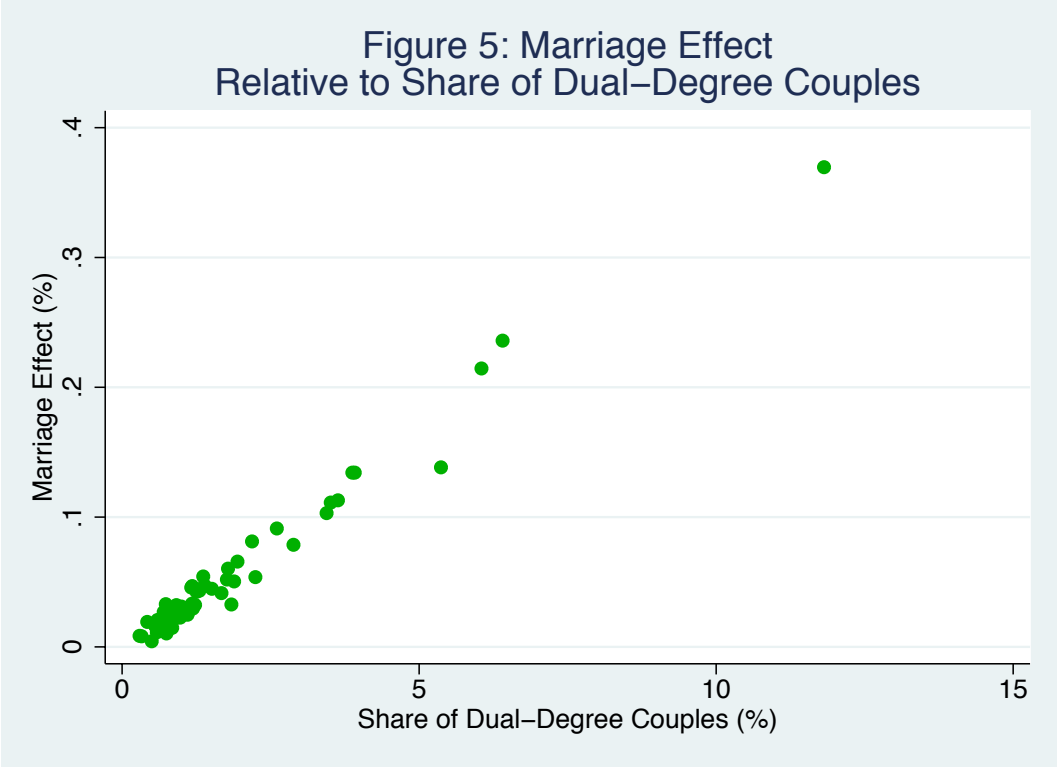


Figure 5: Marriage Effect
Relative to Share of Dual–Degree Couples
Marriage Effect (%)
0
.1
.2
.3
.4
0
5
10
15
Share of Dual–Degree Couples (%)