Owing Value to Scarcity? Intra-Household Implications of Immigration Reforms in South Korea*

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March 2, 2025

Abstract

In this paper, we investigate how marriage market conditions – specifically, the *outside options* available to married couples – shape intra-household bargaining and key outcomes from within-household negotiation. We exploit South Korea's 2007–2010 immigration reforms, shifting ethnic Korean Chinese (EKC) women away from marriage. The shift in immigration altered intra-household bargaining by constraining men's marriage market options. Employing a triple difference-in-differences strategy with district-level variation in sex ratios and EKC bride presence, we analyze rich individual-level longitudinal data and divorce records. We find that the reform significantly increased women's intra-household bargaining power associated with reduced housework, higher employment, improved life satisfaction, and lower divorce rates, with a rise in abuse-related cases. These results reveal immigration policy's unintended effects on household dynamics and its broader economic implications.

JEL Classification: F22, J12, J16, K37, R23

Keywords: immigration, policy reform, marriage market, intra-household allocation, bargaining power

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1 Introduction

Households are widely recognized as fundamental economic units, where everyday choices—such as those involving resource allocation, consumption, and labor force participation—coalesce into broader economic outcomes (Becker, 1993). Yet these decisions seldom rest with a single individual; rather, they emerge from negotiation among household members (e.g., spouses) who hold varying degrees of influence (Manser and Brown, 1980; Chiappori, 1988, 1992). Historically, women have had less bargaining power than men in many contexts, but a growing body of research shows that bolstering women's influence can reshape outcomes both within the household and across the economy (Duflo, 2003; Friedberg and Webb, 2006; Doss, 2013; Knowles, 2013; Gousse et al., 2017; Heath and Tan, 2020). Accordingly, it is crucial to examine the factors that contribute to women's bargaining power within household and to understand how these dynamics inform key intra-household decisions. In this paper, we investigate how marriage market conditions—specifically, the *outside options* available to married couples—shape intra-household bargaining. A change in the availability of outside option for married couples directly affects the cost of divorce. As a consequence, key outcomes emerge from within-household negotiation, including time allocation, labor supply, life satisfaction, and divorce, in the empirical context of South Korea.

To identify these effects, we exploit the 2007 immigration policy reform and its expansion in 2010, which provided an alternative visa pathway for ethnic Koreans from abroad who would otherwise have entered to South Korea on a marriage visa. This policy change is particularly salient for ethnic Korean Chinese (EKC) women because (1) international marriages between Korean natives and foreign husbands have historically been relatively uncommon, and (2) EKC women were especially sought after compared to other foreign brides due to their cultural and ethnic similarities with Korean natives.[1] Providing an alternative visa option reduced the attractiveness of marriage visa for potential EKC brides. Simultaneously, by limiting married men's outside options, the reform may have increased the relative value attributed to wives within these households.

These immigration reforms provide a quasi-experimental framework for evaluating how shifts in local marriage market conditions influence intra-household decision-making and individual well-being.[2] In districts where demand for foreign brides was initially low, it is reasonable to assume that the reforms would have had little impact on the marriage market and on married men's outside options. Districts which experienced high influx of EKC women before the reform, are those providing the strongest network for post-reform migrants. In this spirit, we use the pre-reform arrival patterns of EKC brides.

In addition to exploiting policy reforms in South Korea, our study benefits from the unique richness of its data sources. First, we use the Korean Longitudinal Survey of Women and Families (KLoWF), which sampled 10,000 women aged 19–64 in 2007 and has tracked them over time.

[1] This is likely a result of assortative matching in the marriage market, consistent with the theoretical predictions in Becker (1974a,b). Moreover, several studies provide empirical evidence supporting similar patterns across different contents (Chiappori et al., 2012; Adda et al., 2020; Dziadula and Zavodny, 2023; Ahn and Lubotsky, 2024).

[2] The spatial unit of analysis in this study is the districts of South Korea, which serve as proxies for local marriage markets.

The survey provides detailed information on demographics, residence, time use, and employment, along with direct measures of intra-household bargaining power—for example, the degree to which married women rely on their own judgment versus their husbands' in labor supply decisions—and satisfaction with their marriage. Second, we complement KLoWF with the Korea Labor and Income Panel Study (KLIPS) and examine how changes in intra-household bargaining are associated with shifts in life satisfaction among the couples (husbands and wives) who stayed married before and after the immigration reforms. Third, we employ the universe of the divorce registry records to study the change in divorce rates and the underlying reasons for marital dissolution.

For our analysis, we implement a triple difference-in-differences (DDD) strategy to estimate the impact of immigration reforms while exploiting cross-sectional variation in pre-reform local marriage market conditions. First, recognizing that immigration processes—including visa application and preparation—typically require several years, we designate calendar years prior to 2009 as the pre-reform period and those after 2013 as the post-reform period. Second, we use regional variation in the male-to-female sex ratio in 2000 as a proxy for the demand for foreign brides, thereby controlling for common aggregate features. Third, we introduce an additional layer by distinguishing regions based on the pre-reform concentration of EKC brides to address potential heterogeneous trends across areas. For the causal interpretation of the coefficient on the triple interaction term, we assume that, in the absence of the immigration reforms, there would have been no differential trends in the outcomes across regions with varying pre-reform EKC bride concentrations, conditional on the male-to-female sex ratio. We further control for all individual-level time-invariant characteristics (both observed and observed) by introducing individual fixed effects.

Our analysis reveals that the immigration reforms brought about statistically significant improvements in married women's intra-household bargaining power, time allocation, and labor market participation. Drawing on data from the KLoWF, we observe that, following the reform, married women experience markedly greater autonomy in making job-related decisions. This empowerment is accompanied by a reduction in time devoted to household chores and increases in both labor market participation and overall employment. Importantly, these improvements appear to be unique to married women, suggesting that they arise from shifts in intra-household dynamics rather than from broader labor market trends, and are further reflected in higher levels of marital satisfaction. In parallel, we further investigate life satisfaction using the KLIPS and find that the reforms are associated with enhanced satisfaction with living conditions and family relations among wives—a pattern that also emerges among husbands.

Turning our attention to marital dissolution, our analysis of divorce records indicates that the immigration reforms are associated with an overall decline in the incidence of divorce. Conditional on divorce, we observe a compositional shift in the underlying causes. Specifically, regions that experienced increased female bargaining power experienced a rise in divorces attributed to physical and emotional abuse while divorces due to irreconcilable differences declined relative to other causes. Although our data do not allow us to definitively distinguish among potential mechanisms, we propose several explanations for this pattern. First, enhanced female empowerment may have

enabled women to initiate divorce more readily in cases of abuse. Second, increased bargaining power could encourage women to more candidly report the true reasons for divorce. Third, improved intra-household dynamics and marital quality might facilitate the resolution of previously intractable differences, thereby reducing the incidence of divorces based on irreconcilable differences. Fourth, we rule out an increase in the underlying physical and emotional abuse based on our earlier findings on household bargaining power and life satisfaction. Overall, these findings suggest that the enhanced intra-household power resulting from the immigration reforms not only improves economic and time-use outcomes but also fosters a more open environment for addressing marital issues, ultimately reshaping the dynamics of marital dissolution.

This paper contributes to the burgeoning literature in labor and family economics examining the economic consequences of immigration and intra-household bargaining. A well-established body of research has explored immigration's impacts on labor markets and location decisions, leveraging both theoretical frameworks and empirical strategies (Card, 2001; Borjas, 2003; Card, 2009; Ottaviano and Peri, 2012; Peri, 2012; Dustmann et al., 2016; Burstein et al., 2020; Han et al., 2021; Albert and Monras, 2022; Cortes, 2008).[3] More recently, attention has turned to marriage migration, driven by its rising prevalence and economic implications (Kawaguchi and Lee, 2017; Weiss et al., 2018; Adda et al., 2020; Ahn, 2020; Dziadula and Zavodny, 2023; Ahn and Lubotsky, 2024; Briselli, 2024). The literature on intra-household bargaining has often employed structural models to illuminate how socioeconomic factors—such as income, sex ratio, or legal reforms—shape spousal negotiation (Manser and Brown, 1980; McElroy and Horney, 1981; Chiappori, 1988, 1992; Chiappori et al., 2012; Knowles, 2013; Heath and Tan, 2020). However, empirical investigations have often been constrained by limited data on direct measures of bargaining power, particularly in developed-country contexts.[4]

Our study advances these strands of literature in three key ways. First, we complement prior work reliant on how legal changes affects household bargaining power and female autonomy (e.g., Gray, 1998; Heath and Tan, 2020), by exploiting the unintended consequences of South Korea's 2007–2010 immigration reforms as a quasi-experimental shock to local marriage markets, shifting married men's outside options and, in turn, intra-household bargaining dynamics. This approach provides a novel exogenous source of variation to estimate causal effects on negotiation outcomes like time allocation, labor supply, and marital stability. Second, we harness rich, longitudinal data from the Korean Longitudinal Survey of Women and Families (KLoWF), the Korea Labor and Income Panel Study (KLIPS), and comprehensive divorce registries. These sources enable us to (1) directly measure intra-household bargaining power at the individual level and track its evolution over time and (2) analyze shifts in divorce motivations, offering new insights into how bargaining influences marital dissolution. Together, these contributions underscore the interplay between immigration policy, marriage markets, and household decision-making, with broader implications for economic

[3]For example, Card (2001) uses local labor market variation, while Borjas (2003) emphasizes national skill-based effects.

[4]Notable exceptions include the India Human Development Survey (IHDS) and Demographic and Panel Surveys (DPS) in Africa, though comparable data for advanced economies remain scarce.

performance and well-being.

2 Background and Data

2.1 Sex Ratio, International Marriages and Ethnic Korean Chinese Spouses

Sex ratio imbalances are a significant topic in economic studies, particularly due to their impact on the marriage market, where they can lead to a shortage of available partners for a substantial portion of the population. Although South Korea's overall sex ratio at birth has remained relatively balanced, considerable regional variation exists when examining the sex ratio at marriageable age. Panel A of Figure 1 plots the average sex ratio for individuals aged 20-39 over time, revealing areas where the male-to-female imbalance has persisted at high levels.[5] These imbalances, coupled with the formal re-establishment of diplomatic relations between China and South Korea in 1992, spurred large-scale marriage migration of Chinese women, particularly ethnic Korean Chinese (EKC) women (Kim, 2010). Ethnic Korean Chinese (EKC) individuals are Chinese citizens of Korean ethnicity. Among international marriages involving a Korean and a foreign spouse, the majority of Chinese marriage migrants are ethnically Korean. This preference stems from the unique position EKC migrants hold among all immigrant groups: they have largely preserved their Korean cultural traditions, including proficiency in the Korean language. This continuity is due to their geographic proximity to the Korean peninsula and Chinese government policies that support cultural autonomy for certain ethnic minorities (Lee et al., 2006).

Among international marriages, unions between Korean men and foreign women are the most common, and among foreign brides, EKC women are preferred. This suggests that the destinations of EKC marriage migrants are influenced by demand from native Korean men, which, in turn, is shaped by sex ratio imbalances. However, sex ratio imbalances are not the sole factor driving the demand for foreign brides. Kawaguchi and Lee (2017) document that Korean men with lower levels of education—who occupy the lower end of the marriage market—are the most likely to seek assistance from marriage agencies to find a foreign spouse due to difficulties in securing a partner locally. Consequently, the distribution of EKC brides is not limited to areas with high sex ratio imbalances but also includes regions with balanced sex ratios. In these latter areas, the prevalence of marriages with EKC women plays a key role: when such marriages become more common, they are more likely to be replicated. Thus, a higher incidence of marriages with EKC brides increases the likelihood of other Korean men making the same choice.

Panel B of Figure 1 illustrates the number of international marriages between Korean men and foreign brides from 1995 to 2020. The figure clearly shows that until the early 2000s, the majority of international marriages involved Chinese women, most of whom were ethnically Korean. However, beginning in the mid-2000s, the growth of marriages involving Chinese wives stagnated.[6] This shift

[5] Men tend to marry women who are younger than them, which associated with ever decreasing fertility rates, increases the sex-ratio in the marriage market. Moreover, internal migration in South Korea is more popular among women than men, which also contributes to increasing sex ratio for some areas (Briselli, 2024).

[6] Our dataset used in Panel B of Figure 1 does not allow us to differentiate between ethnic Korean Chinese

coincides with the introduction of South Korea's *Working Visit System*, a migration policy reform targeting ethnic Korean migrants.

2.2 Immigration Policy Reform: 2007 Working Visit System (VWS) and the Implications for the Location Decision of Migrants

In 2007, the South Korean government introduced the Working Visit System, an immigration reform specifically designed for ethnic Koreans holding foreign nationality, primarily from China and former Soviet Union countries. This policy aimed to facilitate employment opportunities for ethnic Koreans by granting them access to designated service sector jobs, such as restaurant work, cleaning, personal care, and domestic labor. In contrast, these sectors remained closed to immigrants without Korean ancestry, reinforcing a preference for ethnically Korean migrants. The Working Visit System was intended to promote temporary migration, offering three-year visas that could be renewed for an additional year and ten months. In 2010, the Office of Immigration further expanded the program by allowing Working Visit visa holders to change their status to Overseas Koreans[7], with some restrictions,[8] which were later relaxed in 2012.

The introduction of this policy significantly reduced the barriers and costs associated with obtaining a work visa for ethnic Korean migrants, making it a more viable alternative to the marriage visa, which had previously been a common migration route. Consequently, the reform not only altered migration patterns but also influenced the geographic distribution of incoming migrants. This paper examines the impact of this immigration policy by analyzing how it reshaped migration trends and identifying the areas most affected by the reform.

The implementation of the Working Visit System created a new migration pathway for ethnic Korean Chinese (EKC) women to South Korea. Before the policy's introduction, marriage migration was the primary route for EKC women seeking to relocate. However, with the new system, these women gained the ability to migrate independently. Previously, migration destinations were largely influenced by imbalanced sex ratios at marriageable age and the demand among Korean men for EKC brides. After the policy change, the settlement patterns of female migrants were no longer dictated by gender imbalances or Korean men's marriage preferences. Compared to the pre-reform period, EKC women who migrated to South Korea after the policy's introduction were less likely to settle in: 1) areas characterized by high sex ratio imbalances and, 2) areas where the pre-reform EKC population was too small to provide a strong migration network. This implies that, following the reform, the areas that experienced the greatest decline in EKC migrants were those with both: 1) highly skewed male-to-female sex ratio and, 2) a below-median presence of EKC migrants prior to the reform. Thus, regions exhibiting both characteristics – severe male-to-female imbalances and a weak pre-existing EKC presence – were the most affected by the reduced inflow

(EKC) wives and other Chinese wives. Another data on foreign residents indicate that approximately 70% of Chinese nationals on marriage visas were EKC women in 2006. It fell by nearly 50% by 2015.

[7] F-4 visa type, which allows for long-stay migration.

[8] i.e. it required that ethnic Korean migrants had worked continuously for the same employer for more than a year in one of the specific industries.

of EKC women after the reform and they are exactly those which will be the most affected by the post-reform scarcity of women.

2.3 Data

We leverage rich datasets from different sources, combining survey and administrative data. We use administrative data and annual population data to identify the areas mostly affected by the policy in terms of sex ratio and pre-policy presence of ethnic Korean Chinese women. A panel of survey data on women and the family allows us to follow women over time while observing key variables, including a more direct measure of household bargaining power. Then, through a domestic panel survey on labor-related issues and divorce-registry records we further test intra-household dynamics on a larger scale.

Population and Foreign Residents in South Korea

The data on the annual population by districts of South Korea come from the Korean Statistical Information Service. In this dataset, we observe the total number of residents living in each district during the sample period by gender and age. Its primary use is to construct the male-to-female sex ratio for the population between the ages of 20 and 39, especially during the pre-reform period, to understand the extent of gender imbalance indicative of a shortage of the female population. The sex ratios ranged from 0.92 to 1.66 men per woman between 2006 and 2016, with the average across districts equaling 1.14 men per woman. Compared to the sex ratio at the national level, which was close to the natural sex ratio, the higher value of the average sex ratio indicates that the number of districts with a high sex ratio and smaller population was large.

The Ministry of Interior publishes an annual report tabulating the number of foreign residents in each district. These tables are further disaggregated by gender, visa type (e.g., marriage-based and work-related), and country of origin. One of the advantages of this data source is that the reports separate ethnic Korean Chinese from Chinese. Based on the report, we construct a panel dataset of districts with the number of female foreign residents on a marriage-based visa by origin: Chinese with an ethnic Korean background, Southeast Asia, and all other countries. Similar to the data on population, we use this data set to shed light on the pre-reform settlement patterns of ethnic Korean Chinese women–the most preferred bridal candidates–on a marriage-based visa. Across districts between 2006 and 2015, the average number of ethnic Korean Chinese women on a marriage-based visa was 283.46, which is lower than the average number of female foreign residents from Southeast Asia (505.22) and those from all other countries (511.88). These average values, however, mask the substantial changes from the pre-reform period. For instance, the average values in 2006 were 287.05, 137.12, and 251.54 for ethnic Korean Chinese and those from Southeast Asia and all other countries.

The Korean Longitudinal Survey of Women and Families (KLoWF)

The KLoWF was launched in 2006 by the Korean Women's Development Institute. It comprises a panel of 9,997 women aged from 19 to 64 who live in 9,068 households across the nation. As for the panel survey, the first and second wave surveys were conducted every year, in 2007 and 2008, and the third to sixth wave surveys, every other year, in 2010, 2012, 2014 and 2016, respectively. This dataset allows for a longitudinal analysis of changes in women's lives, focusing on their economic activities and family life. The respondents, who are only women, took the survey over the six waves, for which they answered questions related to preferences, decision making, labor market status and use of time (among many others). The data provides the general demographic characteristics of respondents, including their geographic information at the district level, which allows us to match the survey data to the migration data and the other outcome variables data (such as divorce and life satisfaction).

For our analysis we exploit information provided on the decision making within the household: we are abler to track the evolution in decision making within the household, with respect to who is in charge of such decisions. We build our measures of women's intra-household bargaining power based on the level of independence that a married woman has, when it comes to making a decision related to getting a new job or changing her current job. The bargaining power measure can take a value from 0 to 3: a value equal to 0 meaning that the decision is taken entirely by her husband and/or her family, and a value equal to 3 meaning that the women makes the decision entirely by herself. This dataset also allows us to monitor the evolution of women's time allocation with respect to the time spent on household chores and the time spent in the labor market. In addition, we are able to detect any change that may accur in a woman's employment status. Hence, through this data we can analyze how bargaining power, time allocation and employment status evolved in response to the immigration reform.

Korean Labor and Income Panel Study (KLIPS)

We make use of the Korean Labor and Income Panel Study (KLIPS) data to further investigate the intra-household effects of the immigration reform. Notably, KLIPS provides information on additional economic outcomes not available in the KLoWF data. We focus on the samples of married women surveyed during the same years the KLoWF was conducted. We consider an important set of variables: women's subjective valuation of satisfaction with key aspects of day-to-day life (e.g., overall, household income, housing conditions, family relations, relationship with relatives, and social standing). The survey questionnaires on satisfaction asked, for instance, how satisfied a woman is with household income on a scale of 1 to 5. Because the satisfaction information was collected in each survey, we compare how these outcomes change along with the immigration reform.

Divorce-Registry Records

Divorce is another intra-household outcome that the reform may have influenced, as it may have brought about a change in intra-household bargaining power. We access divorce registry records spanning the universe of divorce in South Korea recorded between 2005 and 2015. The court's issuance of a divorce decree does not finalize the divorce process in South Korea. The final step, mandated by the law, is to file a divorce report with the government. Each report contains the following information: judgment date of divorce, date of marriage, number of children, type of divorce (whether both parties agreed on the divorce), reason for divorce (i.e., irreconcilable difference, psychological or physical abuse, economic hardship, family conflicts, spousal infidelity, health issues, and other), each party's age, district of residence, educational attainment level, occupation and country of origin. We leverage these divorce records to investigate the change in divorce rates and the composition changes in divorce. In particular, we look at how the composition of reasons for divorce (conditional on getting a divorce) change with the introduction the new migration policy.

3 Empirical Strategy: Triple Difference-in-differences Approach

To estimate the causal effects of immigration policy reforms on intra-household bargaining and related economic outcomes, we employ a triple difference-in-differences (DDD) framework, following the methodology outlined in Olden and Møen (2022). A simple pre-post comparison of outcomes would yield biased estimates due to confounding changes in other determinants of intra-household bargaining that coincide with the reforms. To address this endogeneity concern, we leverage spatial variation in pre-reform local marriage market conditions across districts. This approach allows us to isolate the reform's effects by accounting for both temporal and geographic differences in exposure to the reforms, thereby enhancing the credibility of our causal inferences.

Our identification strategy first exploits persistent historical differences in male-to-female sex ratios across districts, which serve as a proxy for the pre-reform demand for foreign brides in the spirit of Abramitzky et al. (2011), Grosjean and Khattar (2019), and Raymo and Park (2020). For example, in 2000, districts above the median sex ratio exhibited an average surplus of approximately 20% more males than females, while those below the median had a near-balanced ratio. We hypothesize that immigration reforms, by increasing the cost and difficulty of attracting foreign brides (e.g., EKC brides), disproportionately affect marriage markets in districts with high pre-reform sex ratios—denoted as high sex ratio districts (HSR). In these areas, the reforms likely weaken married men's outside options by reducing the supply of potential foreign spouses, whereas districts with low sex ratios—and thus lower initial demand for foreign brides—remain largely unaffected. While comparing pre- and post-reform outcomes between high and low sex ratio districts purges out aggregate time trends, this approach alone may still be confounded by heterogeneous district-level trends correlated with sex ratios.[9]

[9]See Figure A.1 in the appendix for a map of districts classified by high and low sex ratios based on the 2000

To further refine our empirical strategy and strengthen causal identification, we incorporate a second spatial dimension: the pre-reform concentration of EKC brides across districts. Conditional on the sex ratio (and thus the demand for foreign brides), the reforms' impact on local marriage markets varies with the pre-existing availability of EKC brides. In districts with a low concentration of EKC brides prior to the reforms—denoted as high exposure districts (HEX)—the policy-induced reduction in new EKC bride arrivals would amplify the relative scarcity of potential spouses and outside options for married men, thereby increasing the bargaining power of wives. In contrast, districts with a higher pre-reform presence of EKC brides serve as an immigrant network enclave after the reform, and experience a relatively more muted effect in terms of scarcity of women. This differential exposure, combined with the sex ratio variation, forms the basis of our DDD framework.[10] By interacting these two dimensions of spatial heterogeneity with the timing of the reforms, we isolate the causal effects of the policy on intra-household bargaining outcomes.

To operationalize this triple difference-in-differences (DDD) framework, we leverage individual-level panel data and estimate the following specification:

$$Y_{i,t} = \phi_i + \psi_r + \beta_1 \text{post}_t + \beta_2 \text{post}_t \times HSR_r + \beta_3 \text{post}_t \times HEX_r + \beta_4 DDD_{r,t} + \xi_{i,r,t}, \qquad (1)$$

where $Y_{i,r,t}$ represents the outcome of interest (e.g., intra-household bargaining power) for individual i in district r at time t. The term ϕ_i denotes individual fixed effects, accounting for time-invariant characteristics such as education or cohort effects that influence the outcome, while ψ_r captures district fixed effects, purging time-invariant regional factors like geographic or cultural differences.The indicator post_t equals one for post-reform years, defined as after 2013, with pre-reform years set prior to 2009 to account for the multi-year immigration process (e.g., visa applications).[11] The triple interaction, $DDD_{r,t} \equiv \text{post}_t \times HSR_r \times HEX_r$, isolates the reform's causal effect by leveraging the joint variation in high sex ratio districts (HSR) and high exposure districts (HEX), as defined earlier. The error term, $\xi i, r, t$, is clustered at the district level to address spatial correlation.

The causal interpretation of β_4, the coefficient on $DDD_{r,t}$, hinges on the identifying assumption that, absent the immigration reforms, trends in the outcomes of interest (i.e., intra-household bargaining, time allocation, labor supply, life satisfaction, and divorce) would not differ systematically across districts with varying pre-reform EKC bride concentrations (HEX), conditional on their male-to-female sex ratios (HSR). This parallel trends assumption, combined with the inclusion of individual fixed effects (ϕ_i), ensures that time-invariant heterogeneity—both observed (e.g., education) and unobserved (e.g., preferences)—does not confound our estimates.

Pre-reform marriage market conditions in South Korea, characterized by spatial variation in sex ratios and EKC bride concentrations, suggest that immigration policy reforms likely increased the valuation of wives among married men by constraining their outside options. This mechanism

median. High-sex ratio districts are predominantly rural.

[10] See Figure A.2 in the appendix for a map of HEX districts and Figure A.3 for the joint spatial distribution of HSR and HEX. We define the HEX cutoff to ensure an equal proportion of districts across the four groups formed by HSR and HEX.

[11] We exclude the 2009–2013 transition period to avoid contamination from partial reform implementation.

hinges on the reforms raising the cost of attracting EKC brides on marriage visas, even if the actual inflow of these brides did not decline markedly. The observed arrival of EKC brides reflects an equilibrium response to both demand and supply; post-reform, alternative pathways (e.g., work visas) reduced the attractiveness of marriage-based migration for EKC women. To quantify this impact, we estimate a district-level specification analogous to Equation (1), replacing the outcome with the number of foreign brides by origin. Table 1 reports the estimation results. Columns 1 and 2 indicate a statistically significant reduction in EKC brides on marriage visas following the reform (at the 1% significance level). Notably, inflows from the second most common origin—Southeast Asia—in Column 3 and 4 and other regions in Column 5 and 6 remained unaffected.

For our primary analysis of intra-household bargaining and outcomes, we focus on married women (and their husbands) observed in the individual-level panel both before and after the immigration reforms, as specified in Equation 1. However, to examine the reforms' impact on marriage dissolution, we extend our DDD framework to two complementary analyses. First, we aggregate individual divorce records by district and year, leveraging cross-sectional variation rather than tracking individuals over time, and estimate:

$$ND_{r,t} = \psi_r + \beta_1 \text{post}_t + \beta_2 \text{post}_t \times HSR_r + \beta_3 \text{post}_t \times HEX_r + \beta_4 DDD_{r,t} + W'_{r,t}\Gamma + \eta_{r,t}, \quad (2)$$

where $ND_{r,t}$ denotes the number of divorces filed in district r in year t. District fixed effects (ψ_r) absorb time-invariant regional characteristics, while post$t$, HSR_r, and HEX_r retain their definitions from Equation (1). Since individual fixed effects are infeasible with aggregated data, we include Wr, t, a vector of district-year controls (e.g., average age, income, and education of spouses filing for divorce), to mitigate confounding from compositional changes. The error term, $\eta_{r,t}$, is clustered at the district level to account for spatial correlation. This specification tests whether the reforms, by altering outside options in HSR and HEX districts, systematically affect divorce rates.

Second, to explore shifts in the underlying drivers of divorce, we use divorce records and estimate the following record-level specification:

$$RD_{j,r,t} = \psi_r + \beta_1 \text{post}_t + \beta_2 \text{post}_t \times HSR_r + \beta_3 \text{post}_t \times HEX_r + \beta_4 DDD_{r,t} + W'_j\Gamma + \epsilon_{j,r,t}, \quad (3)$$

where $RD_{j,r,t}$ is an indicator equal to 1 if divorce case j, filed by a couple in district r at time t, cites a specific reason, and 0 otherwise. Again, the DDD structure mirrors Equation 2, with ψ_r controlling for district-specific factors and the triple interaction isolating the reform's causal effect. The vector W_j includes fixed effects for couple-level characteristics (e.g., age, marriage year, and occupation) to account for heterogeneity across divorce cases. The error term, $\epsilon_{j,r,t}$, is clustered by district. Divorce records list seven reasons—irreconcilable differences, physical/emotional abuse, economic hardship, family conflicts, spousal infidelity, health, and other—and we estimate Equation 3 separately for each, assessing whether the reforms differentially shift the motives for marital dissolution along with intra-household bargaining.

4 Results

4.1 Intra-Household Bargaining, Time Allocation and Labor Supply

The first set of results is obtained by computing regression analysis using the Korean Longitudinal Survey of Women and Families dataset. The particularity of this dataset is that it allows us to monitor the evolution of women's bargaining power, time allocation and employment status and see how these trends respond to the immigration reform. Table 2 reports the results. Columns (1) and (2) present the estimates obtained by using the two measures of bargaining power as dependent variables in the triple difference-in-difference estimation. In particular, column (1) refers to the level of autonomy that the household wife has when having to decide whether to get a new job and, column (2) refers to her level of autonomy when deciding whether to change a job. For both cases, a positive coefficient would point at a higher level of autonomy and a negative coefficient would point at lower autonomy. For both cases, the coefficient is positive and statistically significant, meaning that after the migration reform and the subsequent scarcity of women, married women gain higher autonomy in decision making related to the labor market, increasing their ability to bargain within the household.

Columns (3) and (4) report results for time allocation. Specifically, column (3) presents results on the time (minutes per week) spent on household chores and column (4) presents results on the time (minutes per week) spent in the labor market. The coefficients suggest that married women residing in our areas of interest spend less time on housework and more time at work, after the migration reform. Column (5) presents results on employment status and reveals that employment increases by 6 percent for married women in this area. Overall, the results from these three columns indicate not only that time spent on household chores is reduced, but also that work time and employment increase for married women. If these results were to originate from increased bargaining power within the household, then the same estimates should not replicate when substituting married women with single women in the sample and indeed, when we repeat the regression estimates including only single women in columns (6) to (8), the same results do not hold.

If we compare the estimates results for our areas of interest (i.e. high sex ratio and below-median pre-reform presence of ethnic Korean Chinese women) with the results obtained for areas, we can see that the areas with both high sec ratio and below-median presence of EKC women, are the only ones where married women experience higher decision autonomy, less time spent on household chores, more time in the labor marker and more employment. These results suggest that married women in these areas seem to improve their lives' conditions. These improvements seem to arise from an increase in household bargaining power, triggered by the scarcity of women that the migration policy brought about.

4.2 Subjective Satisfaction

The key feature of the KLIPS data we leverage is the survey asked for a subjective evaluation of how satisfied each household member is with important aspects of day-to-day living. We take the wife's evaluation (on a scale of 1 to 5) as a dependent variable and estimate the policy effects on different aspects of day-to-day living by employing the triple difference-in-difference strategy. Table 3 summarizes the results. Two categories show statistically significant changes. In Column (3), the estimated effect on the extent of satisfaction with living conditions is positive and statistically significantly different from zero at the 1 percent significance level. Together with our finding that there are no improvement in the subjective satisfaction with household income in Column (2) of Table 3, the increased level of satisfaction with living conditions may stem from intra-household allocation or distribution among family members. Furthermore, the estimates reported in Columns (4) and (5) indicate that wives became more satisfied with their family members but not with extended family members. While columns (1) to (5) present estimates obtained using KLIPS data, column (6) reports regression results on subject satisfaction with their marriage (marital happiness) using the KLoWF dataset, which was used for estimates on intra-household bargaining, time allocation and employment. Differently from the estimates reported in the first five columns, for column (6) wife's evaluation is set on a scale from 1 to 100. The coefficient of interest is positive, significant and comparable in magnitude with those presented in columns (3) and (4) if rescaled, indicating an increase in wife's marital happiness following the migration reform. Results from Table 3 align with those found in the previous table: following the scarcity of women brought about by the migration reform, the increase in women's value, which is reflected with higher bargaining power, translates into higher subjective evaluation of satisfaction with living conditions for married women, with respect to their family and marriage.

4.3 Divorce and its Composition Change

In the case of marriage dissolution, an improvement in wives' intra-household bargaining power may affect the incidence of divorce and also reshape the distribution of divorce in terms of its type. For instance, the incidence of a contested divorce that leads to a series of divorce proceedings and a divorce outcome determined by a judge may decrease as the intra-household bargaining becomes more equitable. Or, wives may feel more empowered to terminate their marriage for reasons that they would not have done so in a social environment where women are valued less and have lower intra-household bargaining power. We test for any composition change of divorce using the universe of divorce records.

The estimation results are summarized in Table 4. Columns (1) and (2) present the results on the number of divorces. The coefficients of interest are negative, statistically significant and with relevant magnitude. These results suggest that the increase in the level of intra-household bargaining power for women, on top of increasing their level of satisfaction with marital life and with living conditions, also resulted in fewer divorces. To further investigate the mechanism behind the reduction in marital dissolution, we look at the composition change of divorces, with estimates

results presented in columns (3) to (9). Importantly, column (3) shows a reduction in divorces originating from *irreconcilable difference*: a plausible way to explain this coefficient is that the higher bargaining power of women brought increased marital happiness, which may have prevented a fraction of divorces that would fall in this category. Column (4) presents results for divorces caused by physical or emotional abuse, showing a positive and statistically significant coefficient. This particular reason for divorce is more likely to originate from women than from men and could be a reflection of a less repressive environment which allows women to feel more empowered to file for divorce when victim of abuse or, it could reflect an increase in *truth telling* as women feel more comfortable to express the real reasons behind marital dissolution. We also analyze other other types of divorce reason, but only the decrease in *irreconcilable difference* and the increase in *abuse* seem to be explaining the lower incidence in divorce taking place after the migration reform.

5 Concluding Remarks

In this study, we show that South Korea's immigration reforms influenced intra-household dynamics and economic outcomes for married women. The reform redirected ethnic Korean Chinese women away from marriage, which circumvented the outside options for married-men, increasing the cost of divorce in terms of probability of finding a new partner. Leveraging a triple difference-in-differences framework with district-level variation, we find that with this shift married women obtain greater autonomy in labor supply decisions, reduced housework, increased employment, and improved life satisfaction. Moreover, we document a decline in divorce rates with a rise in abuse-related cases. These findings suggest that bargaining power, altered by marriage market constraints, drives a cascade of economic and social outcomes, illuminating the unintended consequences of immigration policy on household dynamics.

Our results reveal that immigration policies can reshape economic behavior by tightening marriage markets, amplifying women's roles within households and beyond. The increased bargaining power of married women not only reallocates time and labor—favoring market work over domestic tasks—but also enhances household well-being, suggesting a link between more balanced gender dynamics and economic productivity. Moreover, the shift in divorce patterns underscores how such policies may empower women to confront abuse, potentially reducing tolerance for inequitable relationships. These insights imply that policies affecting mate availability can have profound, unintended effects on economic participation and social stability, extending far beyond their initial labor or migration objectives.

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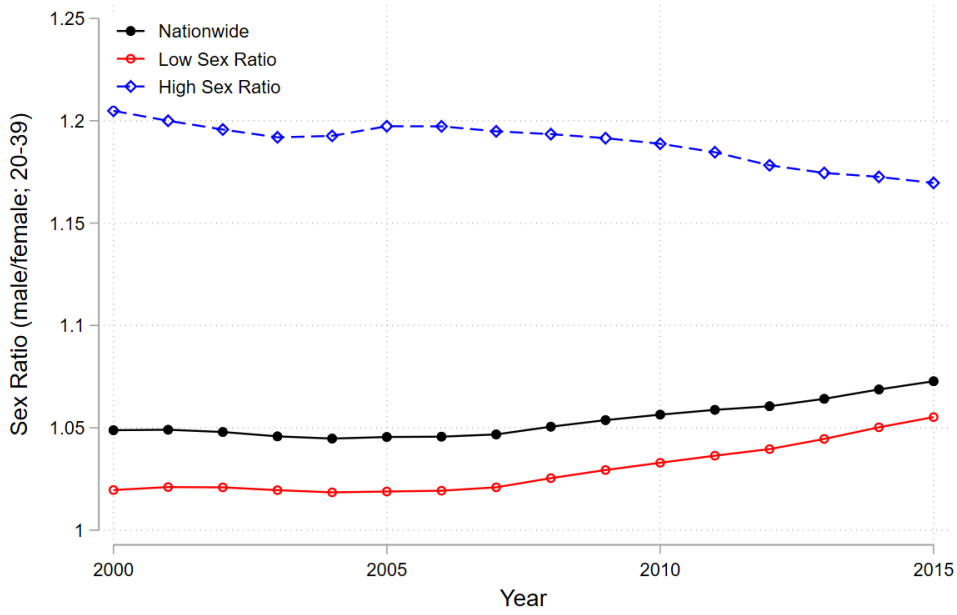
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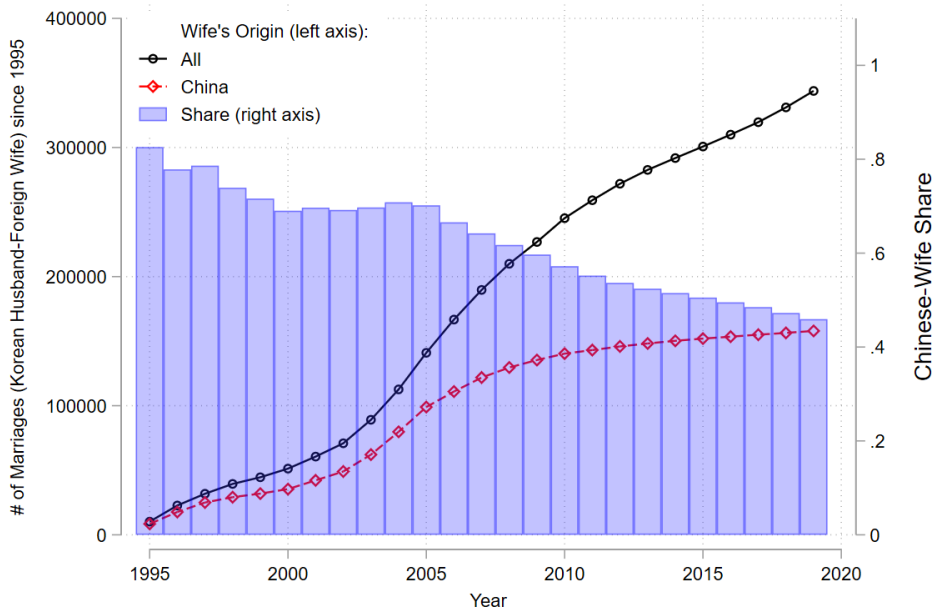
Figures and Tables

Figure 1: Sex Ratios and Marriage between Korean Husbands and Foreign Wives

(a) Sex Ratio



(b) International Marriage



Notes: Panel A displays the national sex ratio (black solid circle) and the average sex ratios among districts below the median (red hollow circle) and above the median (blue diamond) from 2000 to 2015. Panel B presents the total number of marriages between Korean husbands and foreign wives (black circle) and between Korean husbands and foreign wives from China (red diamond) from 1995 to 2019. The blue bars represent the annual share of Chinese wives.

Table 1: Foreign Brides on Marriage Visa

	(1)	(2)	(3)	(4)	(5)	(6)
	China (Ethinic Korean)		Southeast Asia		Other	
post	-59.76***	-94.68***	161.6***	215.1***	146.7***	199.6***
	(12.96)	(17.10)	(13.60)	(19.16)	(20.85)	(28.26)
post×HSR	48.05***	78.69***	-85.70***	-113.6***	-111.4***	-154.1***
	(13.10)	(17.31)	(16.20)	(22.81)	(21.93)	(29.70)
post×HEX	45.46***	75.20***	13.72	25.60	-36.11	-48.49
	(14.38)	(18.85)	(20.82)	(28.99)	(24.91)	(33.64)
DDD	-38.34***	-64.48***	-26.46	-46.03	25.01	33.63
	(14.62)	(19.22)	(23.45)	(32.61)	(26.14)	(35.32)
Constant	115.0***	111.2***	109.7***	88.19***	135.9***	120.7***
	(2.184)	(1.914)	(3.511)	(3.255)	(3.908)	(3.521)
Survey Sample Period	No	Yes	No	Yes	No	Yes
N	2290	1145	2290	1145	2290	1145

Notes: This table reports the results estimating a district-level version of Equation 1. The dependent variable is the number of foreign brides on a marriage visa from China who are EKC in Column 1–2, from Southeast Asia in Column 3–4, and from all other origin countries in Column 5–6. For each origin, the left column includes all the samples from 2006 to 2015, and the right column restricts the samples to the years that overlap with the KLoWF: i.e., 2007, 2008, 2014, and 2015. Across columns, district-fixed effects are included. The standard errors are clustered at the district level and heteroskedasticity-robust: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Bargaining Power, Time Allocation and Employment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Married Women					Single Women		
	Bargaining Power		Time and Employment					
	HHBP 1	HHPB 2	HW Time	W Time	EMPL	HW Time	W Time	EMPL
post	0.0517	-0.0398	-287.4***	477.5***	0.0136	31.18*	-25.22	-0.199***
	(0.0475)	(0.0547)	(20.61)	(82.82)	(0.0197)	(18.92)	(159.9)	(0.0717)
post×HSR	-0.126***	-0.138***	94.98***	-281.7***	-0.0588***	3.803	363.7	0.0360
	(0.0394)	(0.0441)	(20.78)	(80.07)	(0.0197)	(30.84)	(247.3)	(0.0961)
post×HEX	-0.125***	-0.0903***	102.7***	-130.1**	-0.00118	18.26	84.13	0.109**
	(0.0278)	(0.0327)	(16.10)	(65.28)	(0.0152)	(13.90)	(136.7)	(0.0531)
DDD	0.219***	0.217***	-51.55**	186.4**	0.0611**	30.06	-423.5	-0.0541
	(0.0515)	(0.0558)	(25.52)	(94.79)	(0.0259)	(37.01)	(335.9)	(0.127)
Constant	2.504***	2.473***	680.1***	2435.3***	0.488***	73.03***	2561.9***	0.622***
	(0.0198)	(0.0228)	(7.945)	(33.65)	(0.00753)	(8.179)	(66.49)	(0.0297)
N	18946	17509	24741	11168	24667	3543	1616	3556

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors clustered at the individual level in parentheses. The table presents regression results of a triple difference-in-difference estimation. Columns (1) to (5) present results for married women. The dependent variables for columns (1) and (2) measure bargaining power (from 0 to 3), to which a higher value corresponds a higher level of independence in decision making for the woman. Column (1) refers to bargaining power over the decision of getting a new job and column (2) over the decision of changing job. The dependent variables for columns (3) and (4) measure time allocation. Column (3) refers to time spent on housework and column (4) to time spent at work. For column (5) the dependent variable is a dummy which takes value 1 if the woman is employed and 0 otherwise. Columns (6) to (8) repeat estimates computed for columns (3) to (5) using a sample of single women. The variable *post* is a dummy variable which takes value 1 for the post-reform time period. The variables *post*×HSR and *post*×HEX correspond to the interaction between the post-reform period and 1) areas with a high sex ratio and 2) areas with a low concentration of ethnic Korean women, respectively. The variable DDD is the triple interaction of the three variables. All estimates are obtained using district-fixed effects, individual fixed effects, age fixed effects and for married women also fixed effects controlling for the age difference with the husband are included. For the sample of married women we use fixed effects for the age difference between wife and husband.

Table 3: Subjective Evaluation of Satisfaction

	(1)	(2)	(3)	(4)	(5)	(6)
	Overall	HH Income	Living Condition	Family Relation	Social	Marriage
post	0.0783	-0.129*	0.187**	0.0872	0.0331	7.902***
	(0.0601)	(0.0755)	(0.0743)	(0.0678)	(0.0623)	(0.949)
post×HSR	-0.0282	0.0631	-0.0970	-0.0927	0.000592	0.830
	(0.0847)	(0.0762)	(0.0758)	(0.0614)	(0.0696)	(0.890)
post×HEX	-0.0773**	-0.00846	-0.137***	-0.121***	-0.0159	-0.907
	(0.0319)	(0.0383)	(0.0382)	(0.0316)	(0.0317)	(0.622)
DDD	0.0976	-0.0293	0.355***	0.309***	0.00996	2.623**
	(0.102)	(0.106)	(0.103)	(0.0883)	(0.0963)	(1.139)
Constant	2.400***	1.984***	2.403***	2.682***	2.493***	62.81***
	(0.0317)	(0.0391)	(0.0388)	(0.0362)	(0.0327)	(0.377)
N	8398	8399	8398	8399	8398	24638

Notes: This table reports the results from estimating Equation 1 using two individual-level panel survey datasets: KLIPS (Columns 1–5) and KLoWF (Column 6). The dependent variable in KLIPS is a wife's satisfaction measure ranging from 1 (very unsatisfied) to 5 (very satisfied) across various dimensions: overall satisfaction in Column 1, household income in Column 2, living conditions in Column 3, family relationships in Column 4, and social life in Column 5. KLoWF uses a scale ranging from 0 to 100 to gauge wives' satisfaction with their marriage. Across all specifications, we include district and individual fixed effects, age fixed effects, and dummy variables for the age difference between husbands and wives. Standard errors are clustered at the individual level and robust to heteroskedasticity: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

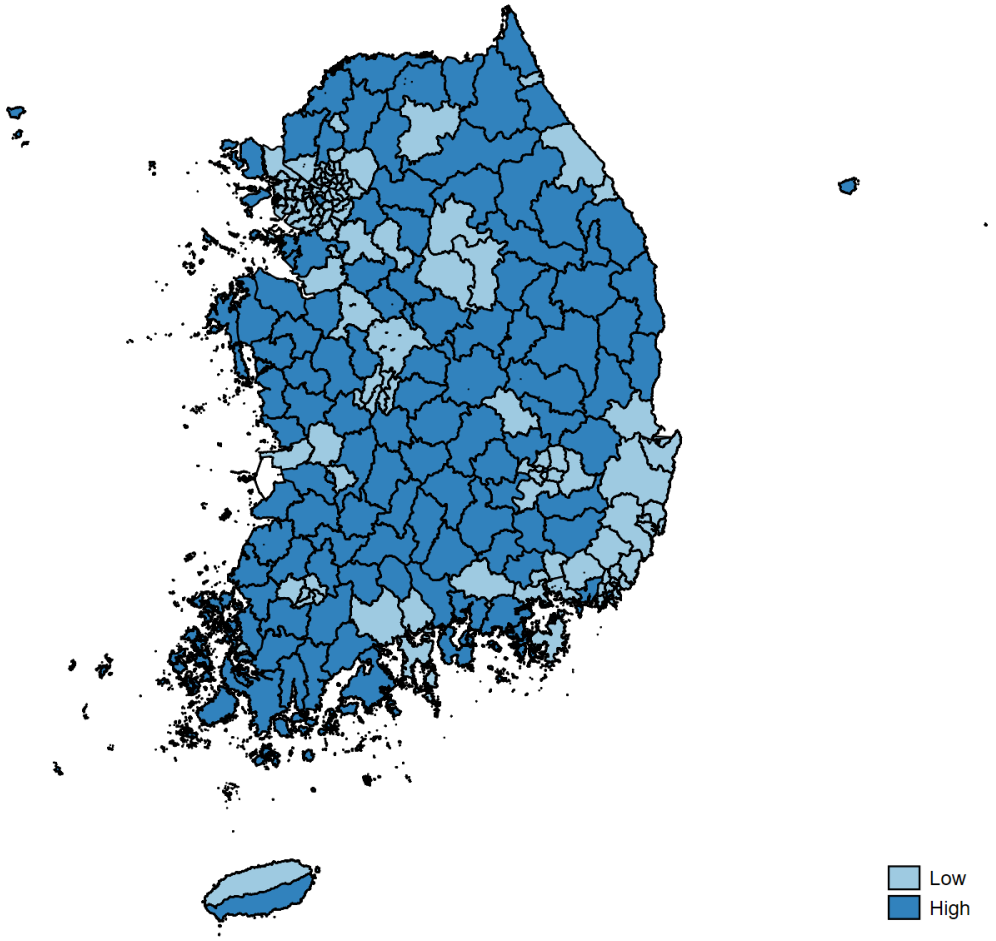
Table 4: Divorce and its Composition Change

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	# Divorce		Reasons for Divorce						
	Level	Log	Irreconcilable Difference	Abuse	Economic Hardship	Family Conflicts	Spousal Infidelity	Health	Other
post	-69.26***	-0.00599	-0.0503***	-0.00425***	-0.0175***	-0.0134***	0.00185	-0.000703*	0.0843***
	(17.48)	(0.0282)	(0.00763)	(0.00162)	(0.00378)	(0.00253)	(0.00251)	(0.000412)	(0.00779)
post×HSR	98.50***	0.0669**	0.0370***	-0.00243	0.0000533	-0.00692	-0.0102***	0.000650	-0.0181
	(18.03)	(0.0311)	(0.0131)	(0.00251)	(0.00670)	(0.00604)	(0.00371)	(0.000964)	(0.0113)
post×HEX	63.03**	0.132	0.0320***	-0.00655***	-0.0114**	0.00202	-0.00603*	0.000640	-0.0107
	(29.89)	(0.0844)	(0.0108)	(0.00209)	(0.00518)	(0.00518)	(0.00321)	(0.000635)	(0.00985)
DDD	-70.36**	-0.177**	-0.0323*	0.00857**	0.00838	0.00744	0.00248	-0.00279	0.00826
	(30.63)	(0.0897)	(0.0178)	(0.00425)	(0.00973)	(0.00936)	(0.00585)	(0.00177)	(0.0143)
Constant	384.5	5.443***	0.527***	0.0438***	0.152***	0.0834***	0.0760***	0.00627***	0.111***
	(236.9)	(0.911)	(0.00221)	(0.000499)	(0.00112)	(0.00106)	(0.000712)	(0.000157)	(0.00212)
N	1374	1374	394196	394196	394196	394196	394196	394196	394196

Notes: This table reports the results estimating Equation 2 in Column 1–2 and Equation 3 in Column 3–9 based on the divorce-registry records. The dependent variable is the number of divorces in levels (Column 1) and in log unit (Column 2). Column 1–2 include district fixed effects and district-level control variables including average age at the time of marriage for husbands and wives, age at the time of divorce, and number of children that they have together. The dependent variable for Column 3–9 is an indicator that takes the value of 1 if the reason for divorce is irreconcilable differences in Column 3, physical and/or emotional abuse in Column 4, economic hardship in Column 5, family conflicts in Column 6, spousal infidelity in Column 7, health issues in Column 8, and all other reasons in Column 9. Across Column 3–9, district fixed effects, education fixed effects, occupation fixed effects and fixed effects for age at marriage and the number of children. The standard errors are clustered at the district level and heteroskedasticity-robust: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

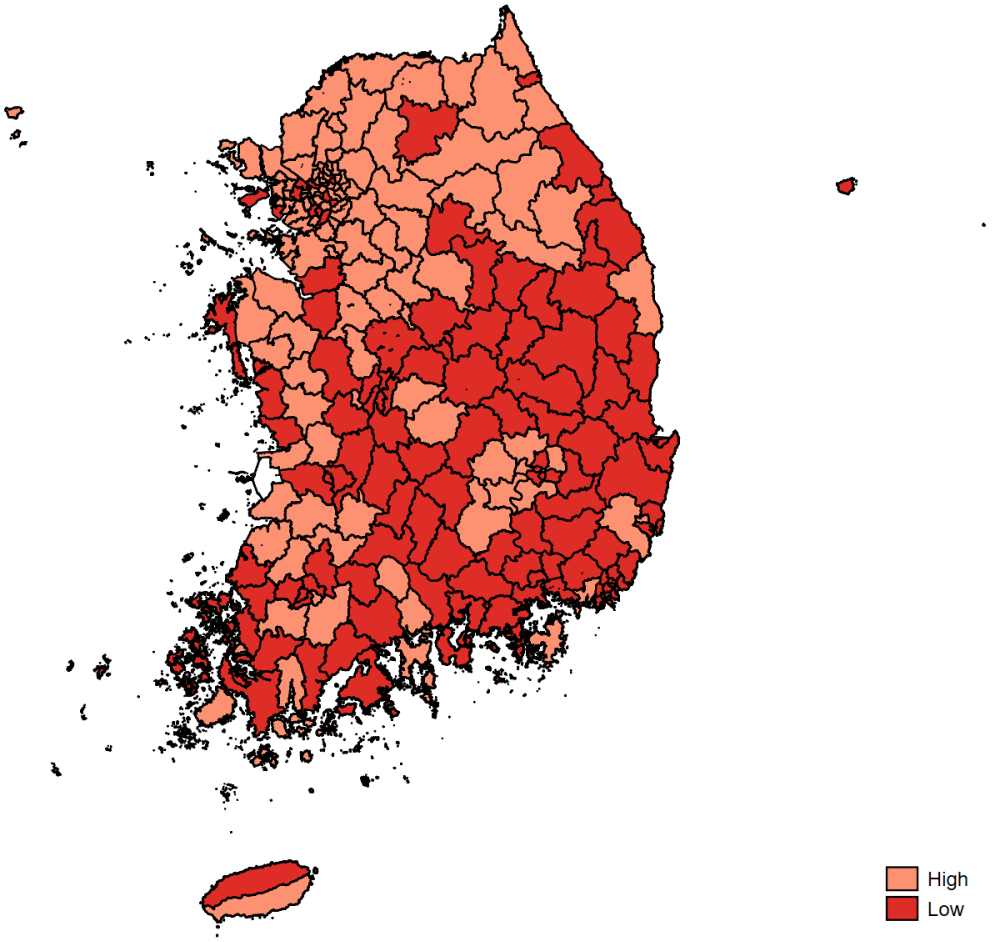
Appendix: Additional Figures and Tables

Figure A.1: Low vs. High Sex Ratio in 2000



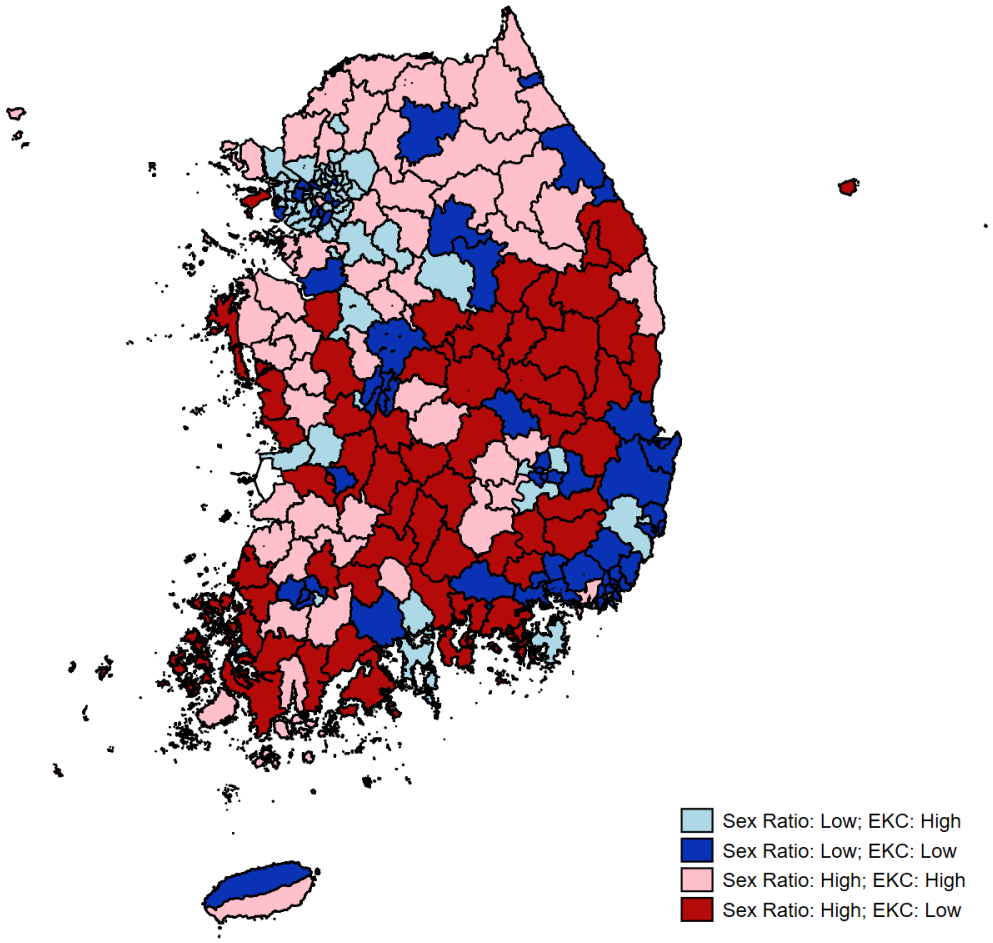
Notes: This figure shows the spatial distribution of the districts of South Korea with high sex ratio (dark blue) and low sex ratio (light blue) in 2000.

Figure A.2: Low vs. High Concentration of EKC Brides in 2006



Notes: This figure shows the spatial distribution of the districts of South Korea with low concentration of EKC brides (dark red) and high concentration (light red) in 2007.

Figure A.3: Districts by Sex Ratio and EKC Bride Concentration



Notes: This figure combines the information plotted in Figure A.1 and Figure A.1.

Table A.1: Bargainig Power and Time Allocation, Husband - Appendix

		Time Spent on Housework by Husband		
	(1) HHBP	(2) All	(3) Wife Empl	(4) Wife Unempl
post	-0.184***	-28.89***	-24.30**	-19.08
	(0.0654)	(6.870)	(10.17)	(11.87)
post×HSR	0.213***	11.59*	14.70*	-9.698
	(0.0535)	(6.532)	(8.931)	(13.32)
post×HEX	0.146***	13.55***	5.435	12.93*
	(0.0359)	(5.022)	(8.610)	(7.541)
DDD	-0.102	6.052	3.448	40.24**
	(0.0685)	(7.904)	(10.88)	(16.95)
Constant	0.823***	94.12***	89.73***	93.83***
	(0.0273)	(2.744)	(4.136)	(4.141)
Districts FE	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes
N	21679	24647	11244	11800

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors clustered at the individual level in parentheses. The table presents regression results of a triple difference-in-difference estimation. Columns (1) to (5) present results for married women. The dependent variables for column (1) measure bargaining power (from 0 to 3) of the wife over the husband's decision of getting a new job, to which a higher value corresponds a higher level of independence in decision making for the wife. The dependent variable for columns (2) to (4) is the time (minutes) that the husband spends on housework over a week. Column (2) shows estimates obtained by including all married women, column (3) presents estimates obtained by including only women who are employed and for column (4) we only include women who are not employed. The variables *post*×*Hse* and *post*×*Hex* correspond to the interaction between the post-reform period and 1) areas with a high sex ratio and 2) areas with a low concentration of ethnic Korean women, respectively. The variable *DDD* is the triple interaction of the three variables. All estimates are obtained using district-fixed effects, individual fixed effects and age fixed effects. For the sample of married women we use fixed effects for the age difference between wife and husband.

Table A.2: Subjective Evaluation of Satisfaction (Husbands)

	(1)	(2)	(3)	(4)	(5)
	Overall	HH Income	Living Condition	Family	Social
post	-0.00261	-0.117	0.187**	-0.0503	0.0318
	(0.0687)	(0.0761)	(0.0743)	(0.0632)	(0.0633)
post×HSR	0.0696	0.000669	-0.0970	0.0515	0.0734
	(0.0825)	(0.0763)	(0.0758)	(0.0612)	(0.0730)
post×HEX	-0.0829***	-0.0507	-0.137***	-0.0818***	-0.00901
	(0.0321)	(0.0359)	(0.0382)	(0.0302)	(0.0318)
DDD	0.0805	0.0522	0.355***	0.165*	0.0775
	(0.105)	(0.105)	(0.103)	(0.0929)	(0.101)
Constant	2.455***	1.997***	2.403***	2.769***	2.518***
	(0.0358)	(0.0402)	(0.0388)	(0.0334)	(0.0332)
N	8376	8373	8398	8372	8372

Notes: This table reports the results from estimating Equation 1 using KLIPS (Columns 1–5). The dependent variable in KLIPS is a husband's satisfaction measure ranging from 1 (very unsatisfied) to 5 (very satisfied) across various dimensions: overall satisfaction in Column 1, household income in Column 2, living conditions in Column 3, family relationships in Column 4, and social life in Column 5. Across all specifications, we include district and individual fixed effects, age fixed effects, and dummy variables for the age difference between husbands and wives. Standard errors are clustered at the individual level and robust to heteroskedasticity: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.