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Descriptive Finding

Tracking the decline of first marriage in South Korea: Timing, quantum decline, and pandemic disruptions

Sam Hyun Yoo

Contents

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Tracking the decline of first marriage in South Korea: Timing, quantum decline, and pandemic disruptions

Sam Hyun Yoo[1]

Abstract

BACKGROUND
In South Korea, where most births occur within marriage, the country's record-low fertility has put renewed attention on the long-term decline in first marriage. Despite rising policy and academic interest, systematic demographic analyses that disentangle structural and timing components of nuptiality change remain limited, especially in East Asia.

OBJECTIVE
This study examines trends in the quantum and timing of first marriage in South Korea from 1993 to 2023 and assesses whether the decline reflects structural retreat, postponement, or both.

METHODS
Using legally registered marriage data from the national vital statistics system, we construct three period indicators: the total first marriage rate (TFMR), the period proportion ever married (PPEM), and a tempo-adjusted PPEM (PPEM*). We estimate the never-married population using age-specific proportions from the census, applied to mid-year resident registration data. All indicators are calculated separately for men and women.

RESULTS
Both TFMR and PPEM declined markedly over three decades. Among women, PPEM and PPEM* showed parallel trajectories, indicating a structural retreat from marriage. Among men, PPEM fluctuated more sharply, and its widening gap with PPEM* after 2015 reveals stronger tempo effects. The temporary convergence in 2020 reflects compositional change due to a sharp fall in international marriages during the pandemic.

CONCLUSIONS
The findings reveal a sustained decline in first marriage for both sexes, with men showing lower levels and greater sensitivity to timing shifts and external disruptions.

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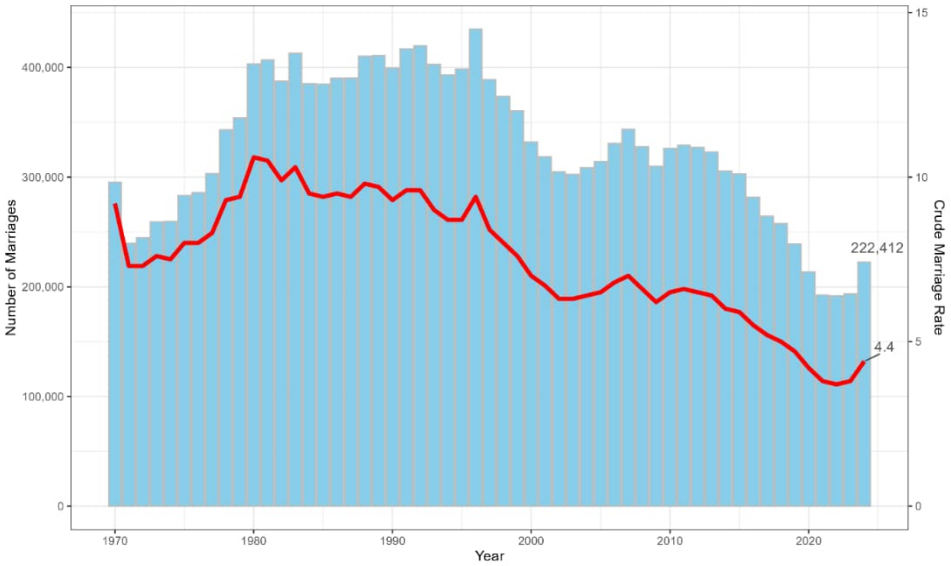
CONTRIBUTION

By extending tempo-adjusted analysis to first marriage, this study offers new insights into nuptiality decline in East Asia's ultra-low fertility context.

1. Introduction

Marriage remains a central institution for family formation in South Korea, where births outside marriage remain rare. As of 2023, only 4.7% of births occurred outside marriage, underscoring the close linkage between marriage and fertility (Statistics Korea 2024). In this context, understanding trends in first marriage is essential for interpreting South Korea's demographic trajectory, particularly amid persistent ultra-low fertility, with the total fertility rate (TFR) declining to 0.72 in 2023 (Statistics Korea 2025a).

Figure 1: Trends in total number of marriages and crude marriage rate (per 1,000), South Korea, 1993–2023



Source: Statistics Korea, Vital Statistics of Korea, 2025.

Over the past three decades, South Korea has undergone significant transformations in nuptiality: Crude marriage rates have declined, the mean age at first marriage has steadily risen, and an increasing proportion of adults remain unmarried well into their 30s and 40s. Yet, despite its demographic importance, first marriage has received far less analytical attention than fertility. Early demographic studies primarily relied on census data to estimate indicators, such as the singulate mean age at marriage (e.g., Cho and Ko 1983; Choi 1983; Hajnal 1953), while more recent research has focused on cohort differentials, assortative mating, and international marriage dynamics (Raymo et al. 2015; Raymo and Park 2020; Yoo 2016). Some studies have noted declining proportions of married women among reproductive-age groups and linked these patterns to fertility change (Lee 2018). However, few have systematically examined first marriage trends using period-based indicators capable of distinguishing between structural change and timing effects.

Several theoretical perspectives have been applied to interpret Korea's retreat from marriage. The Second Demographic Transition framework has been used to highlight shifting values surrounding individualism and family formation (Lesthaeghe 2010), while economic explanations emphasize structural barriers such as employment insecurity and rising housing costs (Oppenheimer 1997). Gender-based frameworks point to tensions between women's educational and occupational advancement and persistent patriarchal norms, particularly within East Asian societies (Esping-Andersen and Billari 2015; Goldscheider, Bernhardt, and Lappegård 2015). These factors appear especially pronounced in South Korea, where male nuptiality has declined rapidly and where delayed or forgone marriage has become increasingly common (Jones and Gu 2023; Lee et al. 2020; Raymo and Park 2020; Yoo 2016).

The COVID-19 pandemic temporarily disrupted ongoing demographic trends (Sobotka et al. 2024). As in many high-income countries, South Korea experienced a sharp but short-lived decline in marriages in 2020–2021, followed by a modest rebound in 2023 (Jung and Lee 2023). Although the long-term decline in marriage and fertility predates the pandemic, the temporary interruption of marriages underscores the importance of distinguishing between short-term timing disruptions and more enduring structural shifts in nuptiality.

Interpreting period-based marriage indicators requires accounting for tempo effects – distortions that arise when the timing of first marriage shifts across cohorts. When marriage is widely postponed across ages, the total first marriage rate (TFMR) – a period indicator based on the sum of age-specific first marriage rates – tends to underestimate the actual proportion who will eventually marry (Bongaarts and Feeney 1998). Conversely, an acceleration in marriage timing can inflate period indicators. Despite its theoretical importance and the availability of methods to adjust for tempo effects (Bongaarts and Feeney 1998; Kohler and Philipov 2001; Kohler and Ortega 2002;

Bongaarts and Sobotka 2012), tempo analysis has rarely been applied to nuptiality, particularly in East Asian contexts (but see Schoen and Canudas-Romo 2005; Winkler-Dworak and Engelhardt 2004). In South Korea, where the mean age at first marriage has risen continuously since the 1980s, such distortions are likely to be substantial. Nevertheless, even basic period indicators such as TFMR remain underutilized in studies of Korean marriage trends.

Moreover, conventional indicators like TFMR can be biased by the underlying structure of the never-married population. In South Korea, as in many societies, marriage is highly age-concentrated: Most people marry within a narrow age window, and the proportion never married declines steeply with age. Consequently, TFMR – which relies on age-specific first marriage rates using the total mid-year population – does not accurately capture the population truly "at risk" of marriage. It is well-known that a table-based measure like the period proportion ever married (PPEM), which uses transition probabilities derived from the never-married population, can address this limitation (Schoen and Canudas-Romo 2005; Winkler-Dworak and Engelhardt 2004).

While tempo adjustments can, in principle, be applied to both TFMR and PPEM, we focus on PPEM because it provides a more behaviorally precise representation of first marriage transitions. Previous applications of tempo-adjusted nuptiality measures have used different methodological frameworks. For instance, Winkler-Dworak and Engelhardt (2004) adopted the Kohler and Philipov (2001) approach, which was developed for fertility adjustment, while Schoen and Canudas-Romo (2005) relied on actual cohort data requiring long-term observation and detailed retrospective information. In contrast, this study applies the Bongaarts and Sobotka (2012) framework – originally designed for fertility analysis – to PPEM. This approach allows for a parsimonious and easily implementable tempo adjustment using standard period data, without the need for extended cohort follow-up. To our knowledge, this represents the first application of the Bongaarts–Sobotka tempo-adjustment framework to first marriage within a PPEM context.

This study provides a descriptive analysis of first marriage trends in South Korea from 1993 to 2023. Using vital registration data, census-based proportions of never-married individuals, and mid-year resident population estimates, we construct three indicators: TFMR, PPEM, and a tempo-adjusted PPEM (PPEM*). These indicators are estimated separately by sex to reveal differences in marriage timing and quantum between men and women. By comparing PPEM and PPEM*, we aim to disentangle the structural and tempo components of Korea's marriage decline and to situate these trends within the broader context of East Asia's ultra-low fertility regimes, where marriage remains a critical precondition for childbearing (Jones and Gu 2023; Raymo et al. 2015; Yoo and Sobotka 2018).

2. Data and methods

2.1 Data

This study analyzes first marriage trends in South Korea using multiple demographic data sources. The primary numerator is derived from microdata in Vital Statistics on Marriages, covering 1993–2023. These data, which are available via the Microdata Integrated Service (MDIS), include all legally registered marriages reported to local government offices, with information on both spouses' age and marriage order (first vs. remarriage) and the marriage registration date (Statistics Korea 2025b).

Following Statistics Korea's official convention, we use the date of marriage registration as the reference point. Although this may differ from the date of the wedding ceremony, legal marriage in Korea is established through registration, and all official marriage statistics are compiled on this basis. Informal unions – such as cohabitation or de facto marriages – are not systematically recorded, making registration data the only reliable source for analyzing nuptiality at the population level. We define a male first marriage as one in which the groom is marrying for the first time, regardless of the bride's marital history; likewise, a female first marriage is a case where the bride is marrying for the first time.

The denominator data are drawn from mid-year registered resident population figures, released annually by Statistics Korea and available from 1993 onward (Statistics Korea 2025c). However, since these population figures do not include marital status by age, we estimate the age- and sex-specific never-married population indirectly. Specifically, we extract the proportion of never-married individuals by age and sex from the Korean Population and Housing Census, conducted every five years between 1990 and 2020 (Statistics Korea 2025d). These proportions are adjusted from the census reference date (November 1) to align with the mid-year population (July 1) and are interpolated using spline methods to produce annual estimates. These interpolated proportions are then applied to the mid-year resident population to derive the age-specific never-married population for each year from 1993 to 2023. For years after 2020, we extend the spline interpolation method under the assumption of gradual demographic change, in line with official projections by Statistics Korea.

2.2 Measures and analytical framework

We construct four key indicators to assess first marriage patterns: TFMR, the mean age at first marriage (MAFM), PPEM, and PPEM*. TFMR estimates the period quantum

(level) of first marriage in a given year, assuming no mortality, but it may be affected by shifts in marriage timing:

$$TFMR = \sum_x \frac{F_x}{P_x},$$

where F_x is the number of first marriages at age x and P_x is the mid-year total population at age x.

MAFM captures the average age at which first marriage occurs, weighted by age-specific first marriage rates:

$$MAFM = \frac{\sum_x a_x \cdot \frac{F_x}{P_x}}{TFMR}, a_x = x + 0.5,$$

where a_x denotes the midpoint of each single-year age interval.

PPEM is a period measure for a synthetic cohort derived from a single-decrement life table. It calculates the cumulative proportion ever married under current first marriage probabilities (not rates):

$$PPEM = 1 - \prod_x (1 - m_x),$$

where m_x is the age-specific probability of first marriage conditional on remaining never married at age x. Unlike TFMR, PPEM uses the never-married population as the denominator, making it less sensitive to changes in population age structure and more reflective of individual-level marriage transitions.

To adjust for tempo distortions caused by changes in the timing of marriage, we adopt the method used by Bongaarts and Sobotka (2012), previously applied to analyze fertility timing and quantum in South Korea (Yoo and Sobotka 2018). The tempo-adjusted probability of first marriage is:

$$m_x^* = \frac{m_x}{1-r},$$

where r is the annual rate of change in the mean age at first marriage. The adjusted cumulative proportion ever married is then expressed as:

$$PPEM^* = 1 - \prod_x (1 - m_x^*).$$

This adjustment distinguishes temporary shifts in timing from structural changes in first marriage behavior. As marriage is increasingly postponed, unadjusted indicators like PPEM may underestimate the true quantum of marriage, whereas PPEM* provides a clearer picture of underlying trends.

We apply these four indicators to examine trends from 1993 to 2023 for both women and men. By comparing PPEM and PPEM*, we assess whether the observed declines reflect timing shifts or long-term structural retreat from marriage. We also assess changes before, during, and after the COVID-19 pandemic to identify short-term disruptions. This multi-indicator framework allows for a nuanced understanding of gender-specific patterns in first marriage behavior, situated within the broader context of South Korea's sustained ultra-low fertility and changing family formation patterns.

3. Results

3.1 Trends in TFMR

Table 1 displays four indicators of first marriages between 1993 and 2023 for both women and men. TFMR declined substantially from 1993 to 2023 for both sexes (Figure 2). Among women, the rate fell from 0.829 to 0.489 (a 41% decrease); among men, it fell from 0.803 to 0.455 (a 43% decrease). The decline was gradual during the 1990s, accelerated in the 2000s, and steepened further after 2010. A temporary uptick in 1996 likely reflects the brief repeal of the legal ban on same-surname, same-origin marriages.

This overall downward trend in TFMR aligns with broader changes in family formation, including delayed marriage and rising lifetime singlehood. A modest rebound occurred in 2022–2023: TFMR increased slightly, from 0.483 to 0.489 for women and from 0.451 to 0.455 for men. These increases likely reflect the partial resumption of marriages postponed during the COVID-19 pandemic. However, the magnitude of the rebound remains limited, and the long-term downward trajectory continues.

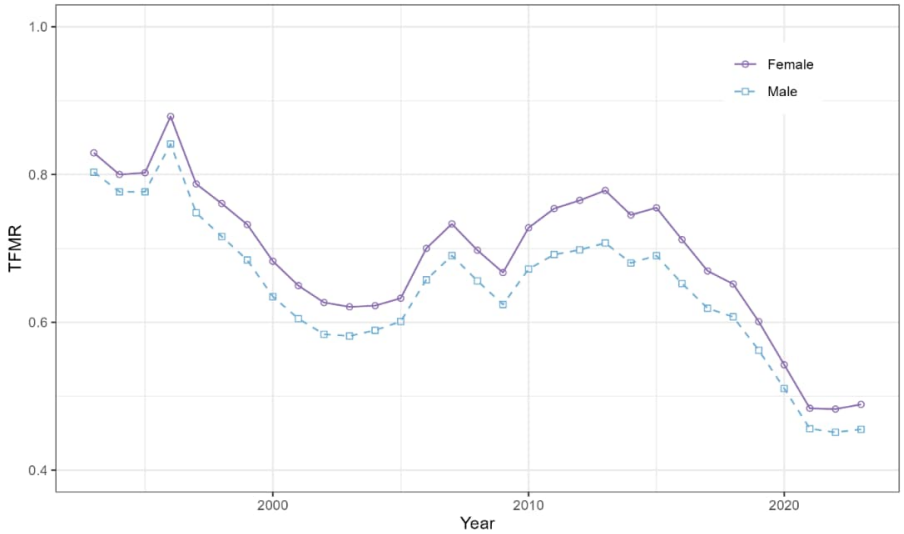
Throughout the period, female TFMR consistently exceeded male TFMR. The gender gap widened in the early to mid-2010s – likely driven by a rise in international marriages, particularly among Korean men – but narrowed again in more recent years. The sharp decline in male TFMR in 2020–2021 may reflect the pandemic's disproportionate impact on international marriages, followed by partial recovery thereafter.

Table 1: MAFM and PPEM by sex, South Korea, 1993–2023

Year	Female				Male			
	MAFM	TFMR	PPEM	PPEM*	MAFM	TFMR	PPEM	PPEM*
1993	25.2	0.829	0.970	0.975	28.3	0.803	0.949	0.958
1994	25.3	0.800	0.962	0.975	28.4	0.777	0.937	0.963
1995	25.4	0.803	0.961	0.974	28.6	0.777	0.941	0.958
1996	25.5	0.879	0.967	0.982	28.6	0.841	0.947	0.961
1997	25.7	0.787	0.949	0.980	28.7	0.748	0.918	0.953
1998	25.9	0.761	0.942	0.979	28.9	0.716	0.904	0.947
1999	26.2	0.732	0.934	0.970	29.1	0.684	0.885	0.930
2000	26.4	0.683	0.910	0.956	29.3	0.635	0.851	0.906
2001	26.6	0.650	0.889	0.950	29.5	0.605	0.825	0.888
2002	26.9	0.627	0.864	0.931	29.7	0.584	0.794	0.886
2003	27.1	0.621	0.851	0.923	30.0	0.582	0.790	0.918
2004	27.3	0.623	0.843	0.908	30.4	0.589	0.791	0.916
2005	27.5	0.633	0.839	0.874	30.7	0.601	0.795	0.865
2006	27.6	0.700	0.852	0.900	30.8	0.658	0.807	0.846
2007	27.9	0.733	0.858	0.925	30.9	0.690	0.811	0.879
2008	28.0	0.698	0.835	0.918	31.2	0.656	0.789	0.872
2009	28.4	0.667	0.820	0.904	31.4	0.624	0.764	0.840
2010	28.5	0.728	0.837	0.894	31.6	0.672	0.782	0.821
2011	28.8	0.754	0.836	0.908	31.6	0.692	0.777	0.815
2012	29.0	0.765	0.834	0.901	31.8	0.698	0.773	0.813
2013	29.2	0.778	0.831	0.894	31.9	0.707	0.766	0.802
2014	29.4	0.745	0.814	0.880	32.0	0.680	0.747	0.804
2015	29.6	0.755	0.811	0.871	32.2	0.690	0.745	0.811
2016	29.7	0.712	0.787	0.851	32.4	0.653	0.721	0.792
2017	29.9	0.670	0.763	0.835	32.5	0.619	0.695	0.777
2018	30.1	0.652	0.752	0.832	32.8	0.607	0.685	0.791
2019	30.3	0.601	0.725	0.814	33.0	0.562	0.654	0.695
2020	30.6	0.542	0.686	0.801	33.0	0.510	0.605	0.625
2021	30.9	0.484	0.650	0.750	33.1	0.456	0.559	0.672
2022	31.1	0.483	0.654	0.720	33.5	0.451	0.558	0.699
2023	31.2	0.489	0.667	0.698	33.8	0.455	0.562	0.616

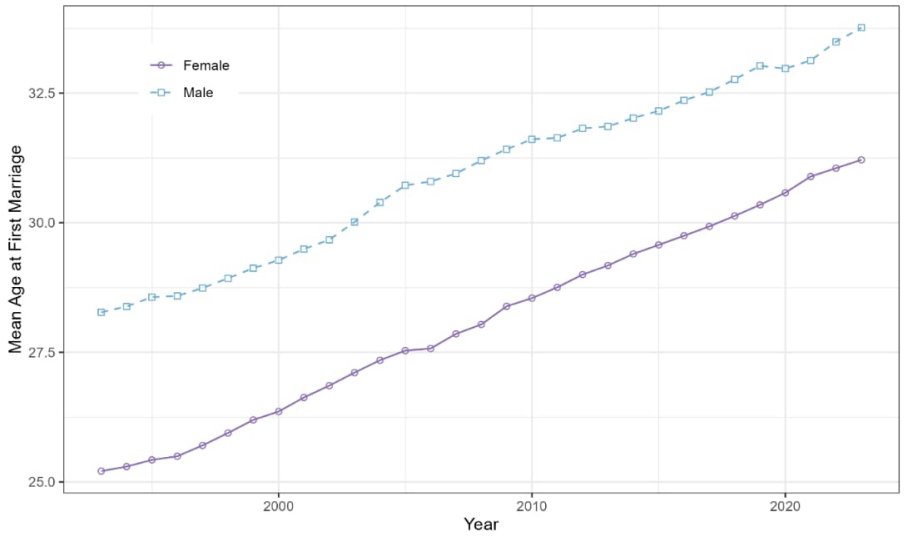
Source: Authors' calculations based on Vital Statistics on Marriages and population census data, as described in the "Data and methods" section.

Figure 2: TFMR by sex, South Korea, 1993–2023



Source: Authors' calculations based on Vital Statistics on Marriages and population census data.

Figure 3: MAFM by sex, South Korea, 1993–2023



Source: Authors' calculations based on Vital Statistics on Marriages and population census data.

3.2 Changes in MAFM

The MAFM increased steadily over three decades (Figure 3). For women, it rose from 25.2 in 1993 to 31.2 in 2023; for men, it rose from 28.3 to 33.8. Although men have consistently married later than women, the gender gap in MAFM narrowed from 3.1 years in 1993 to 2.6 years in 2023, reaching a low of 2.2 years in 2021.

The most rapid increase in MAFM occurred between the late 1990s and early 2010s. For women, the rise was steady throughout. For men, the trend plateaued in the mid-2000s and again during the pandemic (2020–2021), likely due to disruptions in wedding planning, partner search, and cross-border marriages. The stagnation in male MAFM in 2020 reflects a compositional shift in the marriage population that year: International marriages – typically involving older grooms – declined sharply due to pandemic-related travel restrictions. With a larger share of younger domestic grooms among newlyweds, the overall average age at first marriage temporarily leveled off. The resumed increase after 2022 suggests a return to the long-term upward trend, albeit at a slower pace.

3.3 Trends in PPEM and PPEM*

Figure 4 shows trends in PPEM and PPEM* for women and men between 1993 and 2023. PPEM exhibits a long-term decline for both sexes, though the pace and volatility differ by sex. For both women and men, the decline began gradually during the 1990s and early 2000s and accelerated after 2015. The most pronounced drop occurred around 2020, coinciding with the COVID-19 pandemic, followed by a modest rebound in 2022–2023. Despite this temporary recovery, the overall pattern indicates a persistent structural retreat from marriage.

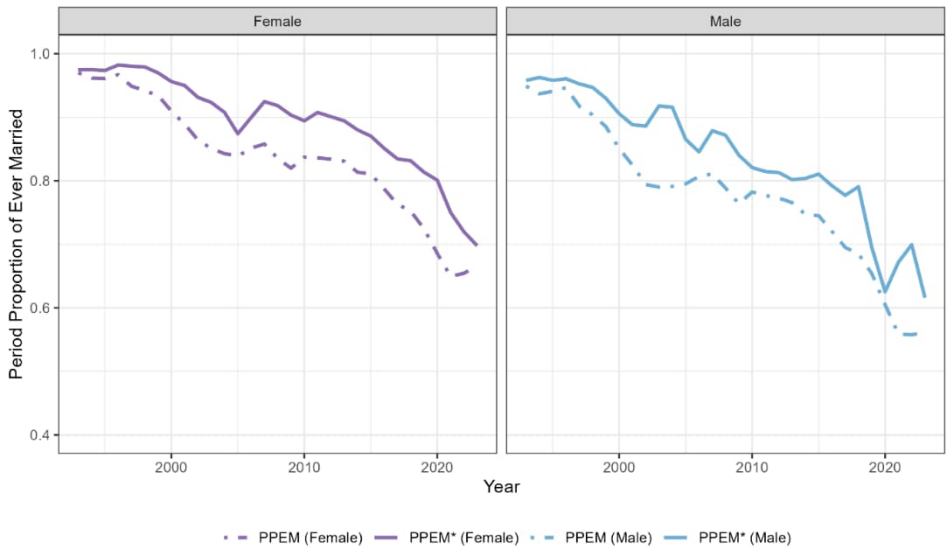
For women, PPEM started at 0.970 in 1993 and declined steadily through the 1990s and early 2000s, falling more sharply after 2000 and reaching 0.839 in 2005. A brief rebound in the late 2000s raised the value to 0.858 in 2007, but the overall downward trend continued throughout the 2010s. By 2015, PPEM had declined to 0.811, reaching a low of 0.650 in 2021 before recovering slightly to 0.667 in 2023. Overall, women's first marriage trends indicate a gradual and sustained decline, with only minor short-term fluctuations.

For men, the decline was steeper and more irregular. PPEM fell from 0.949 in 1993 to below 0.800 in the early 2000s and continued to decrease, reaching 0.721 in 2016. The pace of decline intensified after 2018, reaching 0.654 in 2019 and 0.559 in 2021 – the lowest point in the series – before rebounding slightly to 0.562 in 2023. Compared with those for women, men's PPEM values remained consistently lower and more volatile, reflecting stronger sensitivity to demographic, economic, and institutional disruptions.

Throughout the 1993–2023 period, women's PPEM values remained higher than men's, though the gender gap widened slightly after 2015, when men's rates began to fall more sharply. This divergence suggests that men's entry into first marriage has become increasingly responsive to external shocks such as labor market instability and fluctuations in international marriage patterns.

PPEM* follows a trajectory that's broadly similar to that of PPEM but remains consistently higher because it corrects for marriage postponement. For women, PPEM* declined from 0.975 in 1993 to 0.698 in 2023. The gap between PPEM and PPEM* remained narrow – typically between 0.020 and 0.060 – implying that timing effects exerted only a modest influence on women's marriage trends.

Figure 4: PPEM and PPEM* by sex, South Korea, 1993–2023



Source: Authors' calculations based on Vital Statistics on Marriages and population census data.

For men, PPEM* decreased from 0.958 in 1993 to 0.616 in 2023, displaying greater year-to-year volatility than for women. The gap between PPEM and PPEM* widened substantially between 2005 and 2019, indicating stronger tempo effects associated with the rising mean age at first marriage. In 2020, however, the two measures converged sharply. This convergence reflects the temporary stagnation in the mean age at first marriage, largely driven by the sharp decline in international marriages during the pandemic. As international marriages – typically involving older grooms – fell abruptly,

the overall composition of first marriages shifted toward younger domestic grooms and the annual change in MAFM approached zero. Consequently, the tempo adjustment in PPEM* became minimal, producing an unusually narrow gap between PPEM and PPEM*. The 2020 decline in PPEM, therefore, primarily reflects compositional change rather than increased postponement. After 2021, PPEM continued to decline, whereas PPEM* rebounded to its pre-pandemic level, suggesting a return to longer-term behavioral trends.

Overall, the PPEM–PPEM* gap remained small and stable for women, indicating that their decline largely reflects structural change. Among men, the gap was larger and more variable, underscoring stronger tempo effects and greater exposure to external demographic and institutional shocks.

Compared with TFMR, which fluctuates more markedly from year to year, PPEM and PPEM* provide a more stable and interpretable perspective on underlying marriage dynamics. The transition from near-universal marriage in the early 1990s (around 95%) to the current situation – where roughly 30%–40% of adults may remain unmarried – marks a profound transformation in Korea's marriage patterns. Although the decline affects both sexes, it has been steeper and more tempo-sensitive among men

4. Discussion and conclusions

This study examines long-term trends in first marriage in South Korea using three complementary indicators – TFMR, PPEM, and PPEM* – to disentangle structural and timing-related components of nuptiality change. The findings reveal a substantial and sustained decline in first marriage over the past three decades, with distinct gender and temporal patterns.

For women, the decline in first marriage appears largely structural. The nearly parallel movement of PPEM and PPEM* throughout the study period indicates that delayed timing played only a minor role and that the reduction in marriage levels primarily reflects a broader behavioral retreat from marriage as a life course institution. Although a modest rebound occurred after the pandemic, the continued decrease in PPEM* suggests that this recovery represents postponed marriages being realized rather than a genuine reversal of long-term trends.

In contrast, men's marriage patterns show greater volatility and stronger sensitivity to timing effects and external shocks. The widening divergence between PPEM and PPEM* before the pandemic points to pronounced tempo effects, while their sharp convergence in 2020 reflects the temporary stagnation of marriage timing as international marriages – typically involving older grooms – fell abruptly. This episode illustrates how

compositional changes, rather than shifts in underlying behavior, can momentarily alter period indicators.

The long-term increase in the mean age at first marriage supports these interpretations. Although both sexes married later over time, the rise was less consistent among men, underscoring their greater exposure to macro-level and cross-border disruptions, such as economic uncertainty and international marriage fluctuations.

These findings highlight the importance of employing multiple indicators to assess nuptiality change. TFMR alone is vulnerable to tempo distortions and shifts in the age structure of the never-married population, which may obscure underlying behavioral trends. In contrast, PPEM and PPEM* offer a more behaviorally meaningful framework for distinguishing between structural retreat and timing shifts, providing a clearer understanding of how first marriage patterns evolve in both timing and quantum.

The Korean experience also aligns with broader demographic trajectories across East Asia. As emphasized by Raymo et al. (2015) and Jones and Gu (2023), East Asian societies share a strong institutional link between marriage and fertility, persistent gender inequality in family life, and limited acceptance of nonmarital unions. Within this context, the retreat from marriage reflects not only economic constraints but also deeper structural tensions between changing life course aspirations and slow-moving family systems.

Understanding these dynamics is essential for anticipating future fertility trends and developing effective policy responses. In South Korea, where nearly all births occur within marriage, sustained declines and delays in first marriage – especially among men – are likely to reinforce record-low fertility levels. Disentangling structural change from timing effects thus helps clarify which aspects of nuptiality are temporary and which represent lasting transformations. As other East Asian societies face similar challenges, Korea's experience provides valuable insight into the demographic and institutional constraints shaping family formation in rapidly modernizing contexts.

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