

# *Sex-Ratio Imbalances and Their Economic Consequences: A Comparative Review*

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**Abstract.** This comparative review is about how sex ratio imbalances affect marriage, culture, and economy. Taking Australia’s historical experience as the main reference (quasi-natural experiment), and cross-country evidence in 2015-2025, we identify three linked channels: (1) labor market outcomes and gender roles; (2) marriage and household economic behavior – particularly housing demand, saving, and portfolio choice; and (3) persistence of culture and the protective role of institutions. A higher proportion of males raises the intensity of marriage competition, increases housing demand (including multi-home purchases) and the value of parental housing wealth, drives households to save more and, in some context, to hold riskier asset portfolios. It may also embed gender norms, entrench traditional female roles, and affect women’s labor participation with heterogeneous impacts on crime depending on welfare and governance capacity. Public goods – such as sanitation – enter marriage matching and can make a difference to marriage surplus. Compared to China, the long-run sedimentation of culture versus a rapid and financialized housing channel are illustrated through a comparison of Australia, China, India, Sweden, etc. A final conclusion of this review is that institutions and policy may alter the above three channels. Policy implications include (1) addressing the root cause of imbalances; (2) decoupling marriage from housing; (3) coordinating housing – finance policy; (4) more investment in childcare and anti-discrimination; (5) improving public goods; (6) strengthening social governance.

**Keywords:** Sex ratio imbalance, Marriage market, Portfolio choice, Labor market, Cultural persistence

## **1. Introduction**

### **1.1. Research background**

What is sex ratio imbalance? Simply put, it is a structural deviation toward “more men than women” or “more women than men”. It is not a curiosity of one country, but a phenomenon that happens repeatedly and has long-run impacts on marriage, culture and economy. For example, in the early colonial – penal colony historical experience of Australia, males greatly outnumbered females. This “male-heavy” structure did not just change local marriage and fertility patterns, but in the long run it also affected gender norms and division of labor in the labor market [1]. In some parts of East Asia in the last two decades, some countries/regions have also experienced significantly high sex ratios

(more males, e.g. China) and we can see observable economic consequences in housing, saving, household investment and even crime [2-5].

## 1.2. Research purpose

This paper takes [1] as the main thread, and integrates multi-country evidence in approximately the last decade (2015-2025) to compare what similar and different changes occur in marriage, culture and the economy under sex ratio imbalances. We focus on three socio-economic links: the labor market and gender roles; marriage and household-level economic behavior (housing, saving, portfolio choice); the persistence and feedback of culture and institutions.

## 1.3. Research method

This paper does not conduct new empirical estimations but instead synthesizes existing research from Australia, China, India, Sweden, and elsewhere into a cohesive 'relationship map'. It compares identification strategies, data, and findings to trace the causal chain and boundary condition from 'population sex structure → marriage market → household and social behavior → macro and institutional outcomes' [1,2,6].

## 2. The history and social manifestations of sex ratio imbalances

### 2.1. Australia's historical background

In the 19th century, Australia had a very imbalanced sex structure due to penal transportation and early migration history. In the short term, male-heavy areas made it easier for women to marry early and to participate less in external work; in the long term, more traditional gender roles and norms were gradually cultivated locally, forming a kind of "cultural sedimentation" that would influence the labor participation and household division of labor of later generations. It shows that the sex structure is not a short-term and temporary shock that emerges and fades away; it can be fixed by social norms [1].

### 2.2. Historical background in other countries

In China, since the 1980s, some areas have displayed a high sex ratio of births, and these areas also have relatively more males in the adult sex structure. This gave rise to "more men than women" in the marriage market and thus generated pressure and incentives that affected households' economic behaviors in terms of housing, saving, and portfolio choices [2,4,5,7-9]. On the other hand, some studies connect sex imbalance and crime. That is, in a more competitive environment, the risk preferences and behaviors of some men may change [3]. However, experience from Northern Europe tells us that we should not casually draw parallels: The longitudinal register data in Sweden reveal that areas with a higher male share are not necessarily more violent; there may even be a negative correlation [6]. Therefore, the institutional environment (social security, regulation and norms) can affect the transmission from sex structure to crime.

### 2.3. Social and cultural manifestations

Sex structure "shapes" social norms; the longitudinal evidence of Australia shows that male-heavy areas are more likely to divide gender divisions of labor and conservative norms; these tendencies

can be strengthened over time [1]. With regard to the marriage market in China, housing possesses cultural attributes of “face,” “sincerity,” and “stability,” and thus becomes an explicit signal for men to enhance their marriage competitiveness [2,10]. In India, whether a household has a toilet—though framed as public health—also signals household quality and enters marriage negotiations, indicating a marriage market highly responsive to residential conditions [11].

### **3. The economic impacts of sex ratio imbalance**

#### **3.1. Labor market impacts**

First, sex structure affects labor participation and wages. Australia’s experience suggests that, in the short run, a male-heavy environment forced women to marry earlier, hence depressing their labor market participation, and in the long run this entrenched into more traditional gender role norms [1]. Second, in modern economic transitions, changes in industrial structure are accompanied by gender inequality. For instance, IMF’s research finds that during China’s “rebalancing” (i.e. more services, less investment and more consumption), women’s labor market participation and income gaps did not automatically improve; instead, they exhibit a “U-shaped relationship” and stage-specific fluctuations and thus require more targeted assistance [12]. Taken together, these two lines of evidence suggest that sex ratio – cultural norms – industrial structure can constitute coupled system and market will not necessarily provide gender equality [1,12].

#### **3.2. Marriage and household economic behavior**

##### **3.2.1. Housing as a marriage signal and status good**

In a “more men than women” marriage market, housing is magnified as a important signal: owning a house, its size and location can all influence a man’s matching chances [2,10]. This increases housing demand and prices and makes families with adult sons more willing to buy more houses to raise more competitive sons in marriage [7]. Further, research finds that parents’ housing wealth can also “matchmake for their children” and significantly raise their children (especially sons) probability of marriage [8]. The latest evidence based on nationwide financial data finds that sex imbalance significantly raises housing demand and transmits marriage market pressure into real estate market [9]. All these findings together present a clear “marriage – housing” channel [2,7-10].

##### **3.2.2. Saving and portfolio adjustments**

When housing is linked to marriage, households will begin to save earlier and more vigorously for down payments, home renovations, and the “bride price—housing” expenditure bundle; at the aggregate level this results in a higher household saving rate [2]. However, recent studies also warn against directly interpreting the magnitude of the correlation: if we adjust for “delayed marriage age,” the explained variance of marriage squeeze in explaining China’s high saving rate is weakened; the actual effect may be smaller than previously estimated [5]. On the other hand, high sex ratios may also affect households’ risk tolerance for investment in other directions. For instance, they may enter stocks and other risky assets more aggressively to accumulate visible wealth faster and enhance bargaining power for marriage [4]. That is, high sex ratios may affect not only “whether to save,” but also “where the money goes” in households’ investment portfolio [2,4,5].

### **3.2.3. Non-monetary residential conditions and marriage**

In India, having a toilet makes whether a household is married into another household become significant. Public health policy (e.g., “Total Sanitation Campaign”) can influence marriage matching and surplus by improving household residential conditions. This illustrates the connection between “public goods—household attributes—marriage” [11].

### **3.3. Cultural and institutional continuity**

Sex imbalances survive through institutionalized marriage norms. “House-for-marriage” makes housing a mandatory signal. Housing demand and prices are lifted [2,9]. High prices delay marriage and strengthen assortative matching, entrenching intergenerational inequality. Male-biased conditions are also associated with greater risk-taking and impatience [3]. At the aggregate level, migration and deprivation make identification ambiguous [6]. The appropriate policy response should accommodate local migration patterns, labor demand, and social protection. In total, the above connections constitute a self-reinforcing cultural–institutional channel.

## **4. Comparative analysis across countries and regions**

### **4.1. Australia vs. China**

#### **4.1.1. Commonalities**

The chain “sex structure → marriage market → household and social behavior” can be seen in both places. More men than women caused earlier marriage and more traditional gender divisions of labor in Australia’s history [1]; more men than women, in modern China, ties housing and marriage even more closely, stimulates multi-home demand, and induces adjustments in household saving/investment [2,4,5,7-9].

#### **4.1.2. Differences**

Firstly, duration of the historical shock: Australia displays a long-haul historical shock with “cultural sedimentation” while China exhibits a recent rapid structural change. Secondly, transmission channel: Australia displays more long-term entrenchment of norms and roles [1]; China displays more price mechanisms and financialization [2,4,7]. Thirdly, institutional background: When confronted with rapid urbanization and financial deepening, China turns its housing into a “multi-attribute asset,” that is, a consumption good, an investment, and a marriage signal; Australian takes path dependence via social norms into account on women’s labor and household decisions [1-2].

### **4.2. Western countries vs. Asian countries**

Western evidence (Sweden) indicates that a higher proportion of males does not inevitably lead to more violent crime, and may even exhibit a negative relationship, suggesting buffering to strong welfare and the rule of law [6]. Asian evidence (China, India) focuses more on the chain “marriage competition—housing/wealth signals—household finance.” Public goods (like toilets) can also become marriage attributes [2,4,7-11]. These differences suggest that the same sex-structure shock can develop into different “economic plants” in different institutional and cultural conditions [2,6].

### 4.2.1. Commonalities

Sex imbalance almost always translates into visible economic consequences in the marriage market; housing, wealth, and “visible commitment” serve as signals in matching [2,8,10].

### 4.2.2. Differences

The institutional environment determines the sign and magnitude of spillovers; in countries with strong welfare and rule of law, the “male competition → violence” channel can be dampened [6]; in countries where housing is highly financialized and marriage culture attaches importance to “house-as-commitment,” the housing and saving/portfolio channel is “magnified” [2,4,5,7,9].

## 5. Potential issues arising from sex ratio imbalances

Housing and its financialization Introducing a “ticket to marriage” increases the leverage ratio and savings of families, drives up house prices, and exacerbates intergenerational pressure—in a Matthew effect, benefits for home-owning families are more entrenched and catch-up is more difficult for others [2,7,9].

Accumulation of asset risks In order to speed up capital accumulation, households are more ready to bear investment risk, and they move toward more aggressive portfolios, thereby increasing their vulnerability to financial volatility [4].

Reproduction of gender inequality In some settings, the division of labor and norms are “locked in,” and this hinders women’s expectations in education, employment, and income [1,12].

Heterogeneous effects on social order and safety In some countries/regions, sex imbalance is linked to increases in certain types of crime, but the conclusion must be understood in the context of the institutions and welfare system of the country/region concerned [3,6].

## 6. Future research directions and policy implications

### 6.1. Research directions

Cross-country comparable identification strategies More use of historical shocks, policy changes, and geographic instruments to compare “the elasticity of the same shock across different institutional soils” [1,11].

Linkage of marriage–housing–finance: Integrate micro models of “housing as a signal” into household asset pricing to reveal the strategic differences under different credit constraints and house price expectations [2,4,10].

Quantifying institutional buffering: Control for interactions of welfare, public security, and judicial efficiency in the sex ratio in crime and social order models to explain the “Swedish counterexample” [6].

Industrial structure and women’s employment: In the context of “rebalancing” and the digital economy, assess the total effects of female-oriented upskilling, flexible work, and new childcare services [12].

### 6.2. Policy implications

Source-side correction of sex imbalance: Keep promoting gender equality and anti-discrimination, improving birth registration and public communication, and lowering incentives for selective

behavior.

**De-materializing the marriage market:** Through transparency, social advocacy, and public rental housing supply in housing and bride price, weaken the rigid linkage of “housing = marriage threshold” [2,7,9].

**Financial–housing policy coordination:** Improve credit access for first-home buyers and suppress speculative multi-home demand to prevent irrational leveraging “for the sake of marriage” [7,9].

**Public goods improvement and marriage well-being:** India’s “Total Sanitation Campaign” demonstrates that improving public goods (in this case toilets) can improve marriage welfare; extend to including residential and public health conditions in “marriage-friendly community building” [11].

**Women’s employment and human capital:** through reskilling, childcare provision, anti-discrimination enforcement, and tax incentives, reduce the negative impacts of sex structure on women’s labor participation [1,12].

**Public security and governance:** Increase social work and youth support in potential risk areas to reduce conflict and deviance under sex imbalance, and learn from Sweden’s experience in institutional buffering [3,6].

## 7. Conclusion

Sex-ratio imbalance is not just a family issue. It is more like a current: it first creates ripples in the marriage market, then spreads into the wider economy through housing, saving, portfolio choices, and the division of labor. Australia shows how skewed sex ratios can harden into long-run culture and role norms; China and India show how housing and even public goods can become dominant marriage channels, reshaping household finance and macro markets. Sweden, in contrast, shows that strong welfare and rule-of-law settings can weaken the “more men → more violence” pathway. In short, the chain “sex structure → marriage → economic behavior → institutions” is common across contexts, but its strength and direction are constrained by institutional and cultural settings. Looking ahead, reducing sex imbalance, curbing the over-materialization of marriage, expanding public-goods provision, and supporting women’s employment are key to moving from passive reaction to proactive governance.

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