Discussion of:
“Who Suffered from Superstition in the Marriage Market: The Case of Hinoeuma in Japan”
by Hideo Akabayashi

Justin Wolfers
The Wharton School, University of Pennsylvania
CEPR, IZA & NBER
AEA Meetings, January 7, 2007
Amazing Fact

- Births in Japan profoundly affected by superstition

**Annual Births in Japan: 1900-2000**

- Hinoeuma years: Women born in these years believed to be bad wives
Effects of Fire-Horse Years on Births

Figure 2: Population Size by Sex and Birth Cohort for Three Fire Horse Episodes

Panel A: 1840-1850 Birth Cohorts in 1886 Census

Panel B: 1900-1910 Birth Cohorts in 1955 Census


Notes: These graphs show male and female population size by birth cohort for three different fire horse episodes. The dotted line shows the male population, and the solid line shows the female population. The fire horse years studied are 1846, 1906, and 1966. The Census years are 1886, 1955, and 1970. Hence, the ages of the birth cohorts are different for the different points along each graph. For these three censuses, the three fire horse cohorts were 44, 39, and 4, years old respectively. Year is measured from January to December. Data sources: Japan Ministry of Home Affairs (1886); Japan Statistics Bureau (1955, 1975).


Justin Wolfers, “Comments on Akabayashi”
Methods Used to Reduce Fertility


Justin Wolfers, “Comments on Akabayashi”
What Can We Learn from this “Experiment”?

- Does the Hinoeuma superstition lead people to make costly decisions?
  - An easier paper: Is there prejudice against potential Hinoeuma daughters by potential parents? (YES!)
    » Are these decisions costly?
  - This paper: Is there prejudice against Hinoeuma women by potential spouses?
    » And who is hurt by this prejudice in equilibrium?

- “Exogenous” variation in cohort size
  - This paper: Are there increasing returns in the marriage market matching function?
Japanese Births, by Mother’s Age


Justin Wolfers, “Comments on Akabayashi”
Are Hinoeuma Women Unwanted Spouses?
Justin Wolfers, "Comments on Akabayashi"

Marriage Rate by Age, 2000 Census

1966 birth cohort: “Hinoeuma women”

1966 birth cohort: men

Akabyashi’s research question: Do lower marriage rates for the 1966 birth cohort reflect:
  • Prejudice?
  • IRS matching function?

[Shimer]
Distinguishing Prejudice from IRS Matching

**This paper’s recipe**

1. Estimate the marriage market matching function
2. Predict matching rates from this equation
   - These predictions incorporate “usual” IRS
3. Observe negative residuals for 1966 birth cohort
   ⇒ Infer prejudice

**But**

- Mis-specification may be mis-labelled prejudice
Estimating the Matching Function

- Panel Estimation:
  Husband’s Age * Wife’s age * Time * Prefecture

\[ \log(\Delta C_{ijkt}) = \alpha_{ij} + \beta_1 \cdot \log M_{ikt-5} + \beta_2 \cdot \log W_{ikt-5} + \lambda_{k(t-i)(t-j)} + \epsilon_{ijkt} \]

- \#Marriages = 5-year change in #married involving
  - Husband from cohort I
  - Wife from cohort J
  - in prefecture k

- \#Eligible men
  From that cohort = 5-year lag of single men
  - of cohort I
  - in prefecture kd

- \#Eligible women
  From that cohort = 5-year lag of single men
  - of cohort J
  - in prefecture k

- Fixed effects
  Husband age (t-I)
  * Wife age (t-J)
  * Prefecture fixed effects

- IV Strategy: Instrument for eligible men and eligible women by size of birth cohort

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Estimating the Matching Function

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+\beta_3 * Competing men +\beta_4 * Competing women (\beta_3, \beta_4 < 0)

Econometric Problems

What is missing?

- Competing cohorts! \( \Rightarrow \hat{\beta}_2 = \beta_2 + \rho \beta_4 < \beta_2 \) if \( \rho > 0 \)
- Consider the effects of the Hinouema cohort:
  » True effects: Large \( \beta_2 \) => Small cohort predicts low marriage rates
  » Equation-based forecast: Smaller \( \beta_2 \) => Predict moderate marriage rates
- Interpretation:
  » Akayabashi: Negative residuals for Hinouema cohort reflects prejudice
  » My interpretation: Negative residuals reflect mis-specification
- A test: Different predictions for Hinouema-cohort men!

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Econometric Problems

- What is missing?
  - Competing cohorts! \( \Rightarrow \hat{\beta}_2 = \beta_2 + \rho \beta_4 < \beta_2 \) if \( \rho > 0 \)

- Leans heavily on extrapolation beyond sample
  - Most of the sample involves large cohorts
  - Yet the crucial prediction is for the small Hinoeuma cohort

- IV strategy
  - Size of birth cohorts affects more than just #singles

- Stationarity

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