

Wittgenstein Centre Conference 2023
“Exploring Population Heterogeneities”
Flash Session 2, 7th December 2023

Exploring Educational Gradients in Fertility: The Influence of Gender Imbalance in Education

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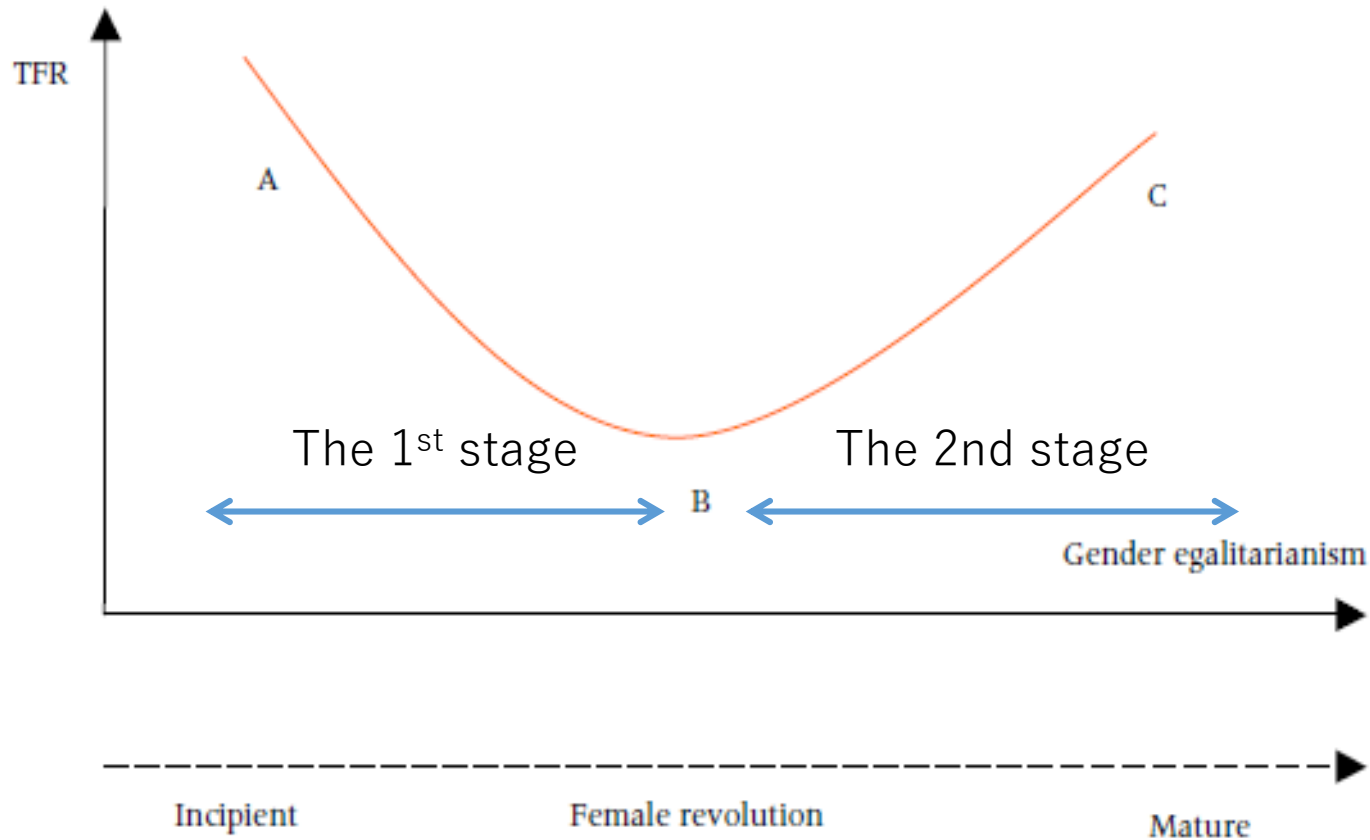


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This work is supported by JSPS KAKENHI Grant Number 18KK0374 (P.I. Setsuya Fukuda)

The gender equity theory in fertility

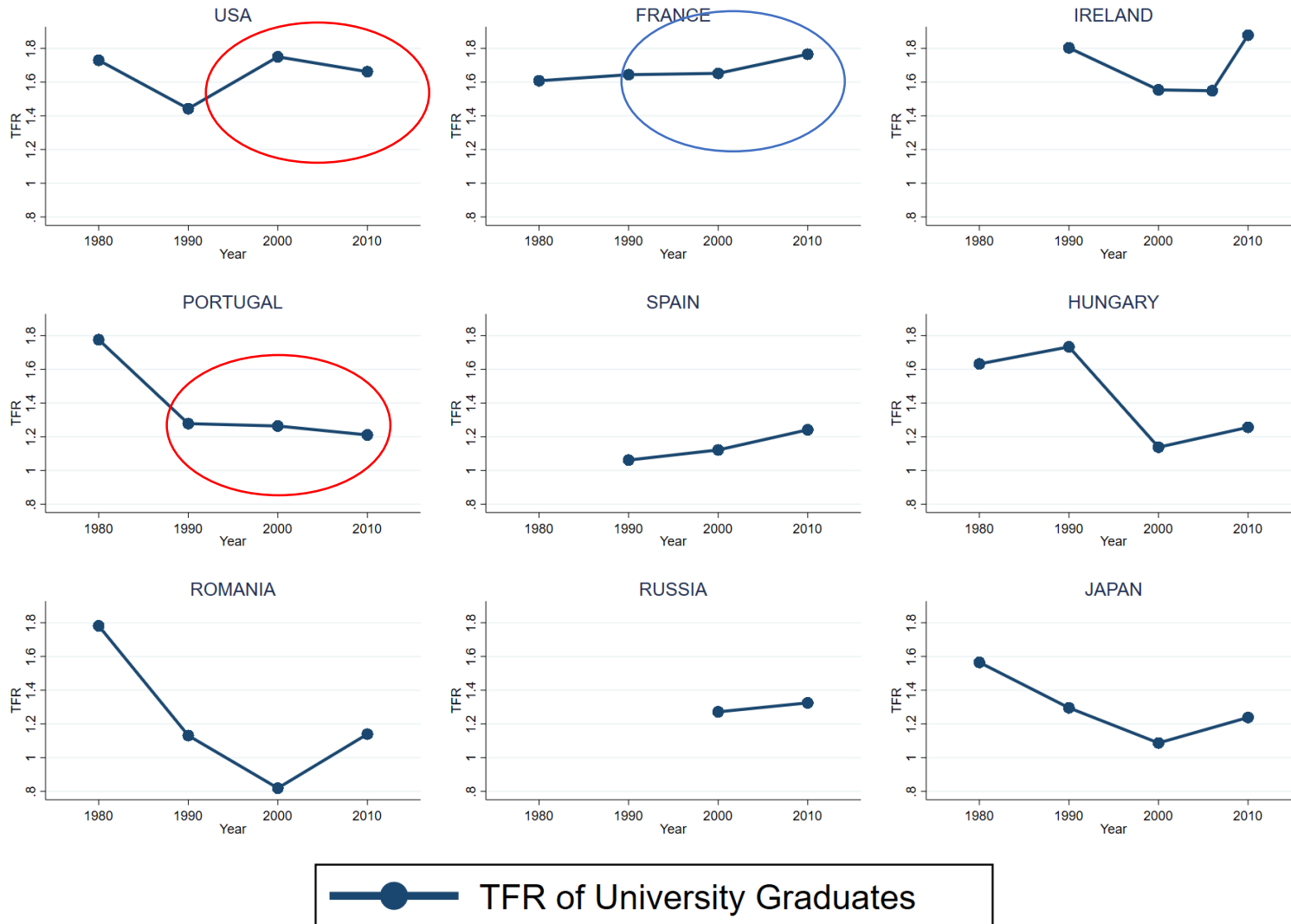
FIGURE 1 Schematic fertility trend over the “female revolution”



In the 2nd stage of the gender revolution,

- **Time series:** Fertility increase is led by highly educated women (Esping-Andersen and Billari 2015)
- **Cross-country:** Fertility levels of highly educated women should be higher in countries with better gender equity (McDonald 2013)

However, the trends of the conventional TFR don't clearly correspond with the theory



Data:
Authors' calculation based on the Own-child method using Japanese census data and IPUMS International Harmonized data for each year.

RQ: Is the rise in TFR of highly educated women masked by gender imbalance in higher education?

- The mating squeeze theory (e.g. Van Bavel 2012)
 - A relative increase in female tertiary education to male tertiary education causes the mating squeeze for H-E women.
 - An implication of the mating squeeze to fertility is “**birth squeeze**” among highly educated women
= involuntary loss of births due to the mating squeeze
- ➔ Increasing birth squeeze may obscure the “true” relationship between country’s gender context and **fertility potential** of highly educated women

Method: two-sex total fertility rate

- The two-sex TFR (TFR2), by Schoen (1985)

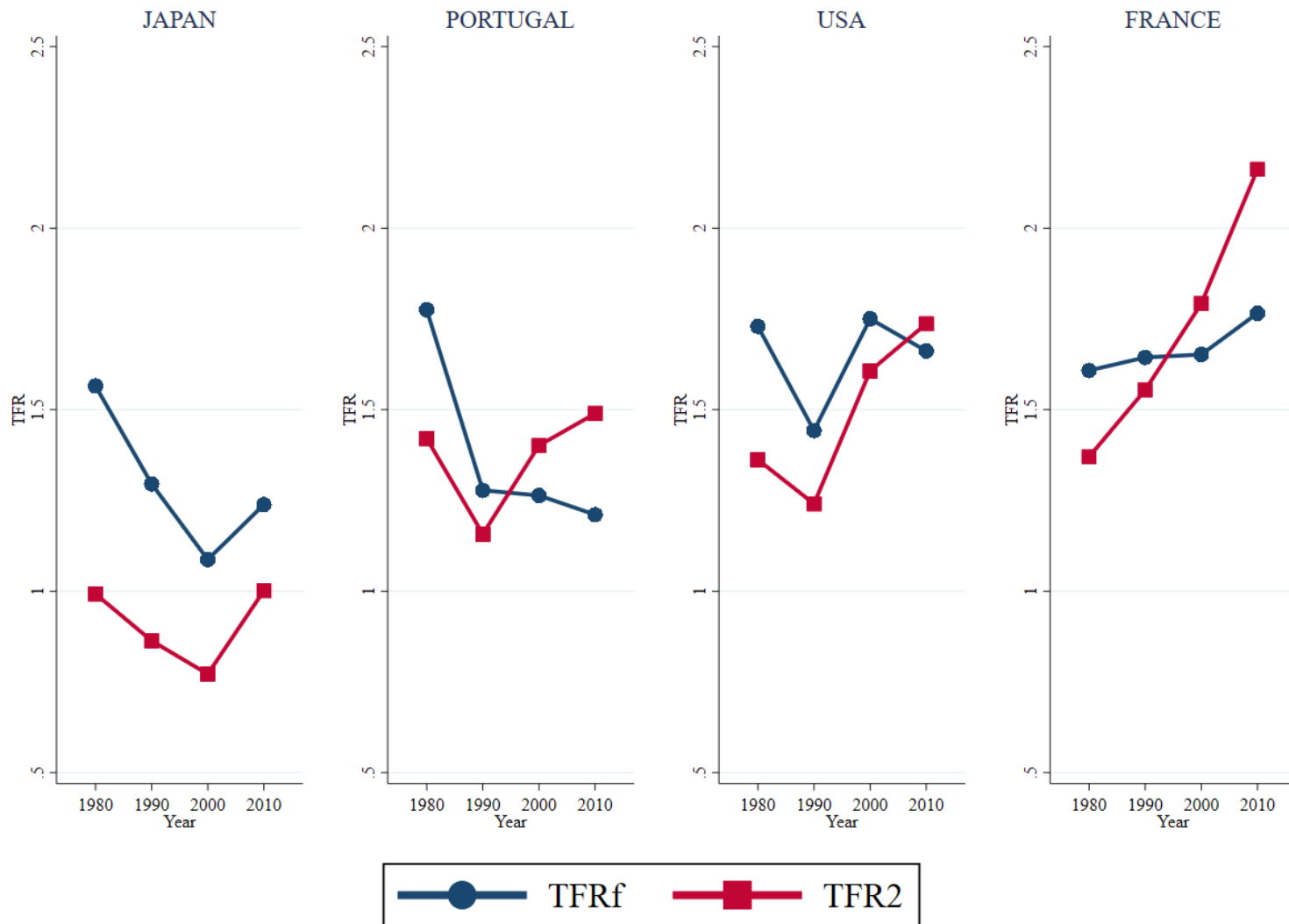
- Based on the average of male and female fertility rates for each age- and education pair

1. TFR2 is a composition-free TFR from **BOTH** male and female age- and education population structures at a given time.
2. TFR2 can be considered as **a hypothetical TFR which shows an expected level of TFR when gender imbalance in each age- and educational-pair is not observed.**

Data

- IPUMS international harmonized data (micro census data)
France 1982, 1990, 1999, 2011
Portugal 1981, 1991, 2001, 2011
The USA 1980, 1990, 2000, 2010
- Japanese census 1980, 1990, 2000, 2010
- The own-child method is used to compute period fertility rates (single year period)

Female TFR^f vs TFR2 for university graduates



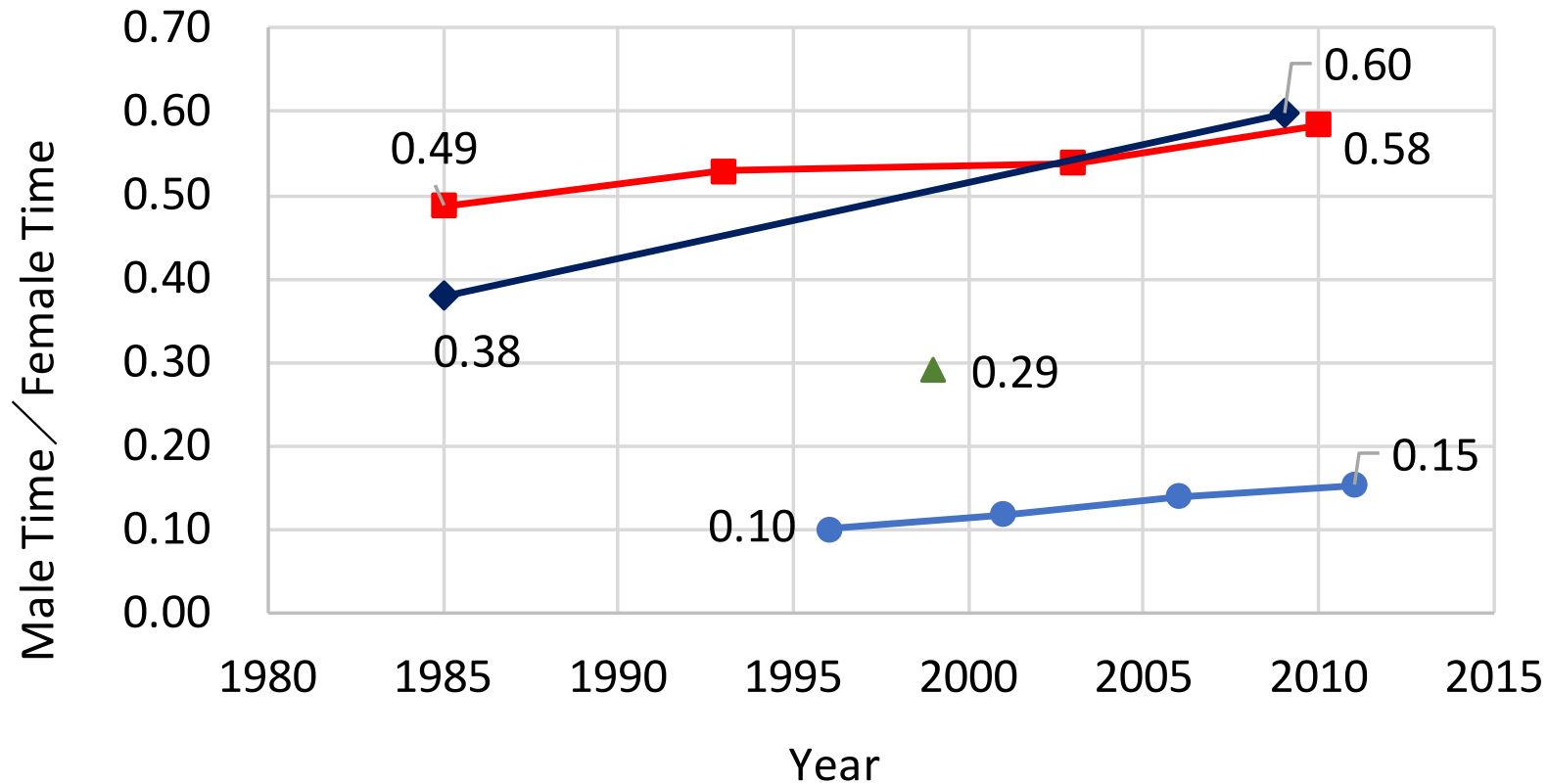
Except for France, TFR2 in all countries show the U-shaped patterns to varying degrees and timings.

TFR2 shows clearer tendencies of fertility recuperation than the conventional TFR in all four countries!

➔ The degrees of the recuperation & the levels of TFR2 more or less compatible with the levels of the gender equity

Men's time use on unpaid work over women

Age: 15-64



● Japan ▲ Portugal ■ USA ◆ France

Data

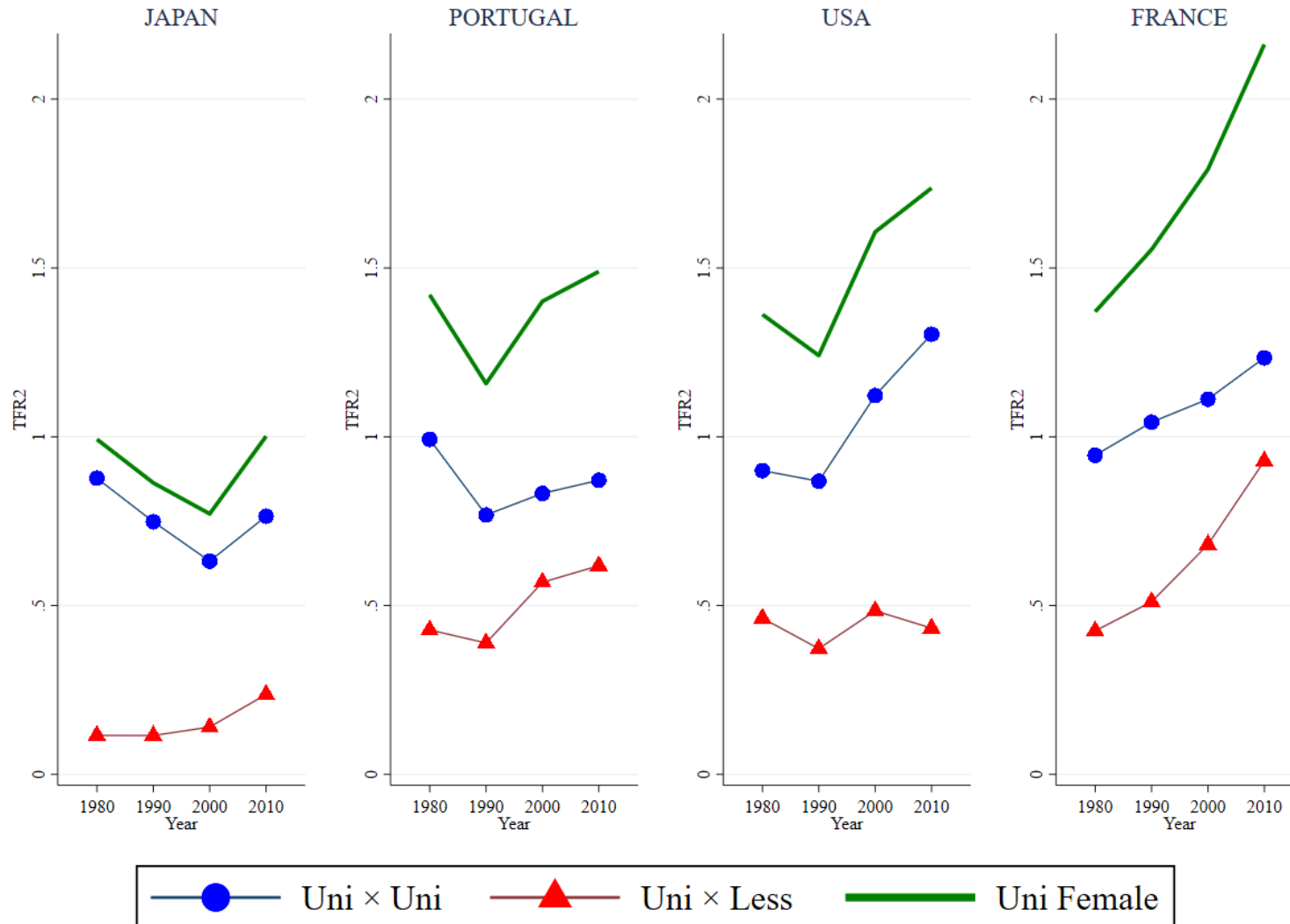
Japan : Statistics Bureau (each year)

Portugal : OECD (2021)

USA/France : IPUMS Time Use

(<https://timeuse.ipums.org/>)

TFR2 for female univ. graduates by education pair



- In France, Portugal and Japan, both homogamous and hypogamous couples contribute to fertility increase.
- In the US, fertility recovery is led by **ONLY** homogamous couples.

➔ The two-sex TFR is a suitable measure for testing the gender revolution hypothesis.

Next Steps

- Including more countries and time points from IPUMS data
- Examining age- and education-gradients
- Examining the relationship between TFR2 and macro-level variables measuring gender equality, labor market conditions, etc. (by using fixed-effects models?)
- Database

Thank you!

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