Does Domestic Violence Law Shift Gender Attitudes and Female Labor Force Participation in Kyrgyzstan?

Chisato Tachibana

The University of Tokyo tachibana-chisato215@g.ecc.u-tokyo.ac.jp

October 11, 2025



Chisato Tachibana

Table of Contents

- Introduction / Background
- Data
- **Empirical**
- Results
- Conclusion/Discussion
- **Appendix**



Overview of This Study

- RO: Did the 2017 Domestic Violence (DV) Law promote norm and FLFP in Kyrgyzstan?
- Data: Life in Kyrgyzstan (LiK) Panel Survey, (2013-)2016–2019
- **Estimation Strategy:** Intensity Difference-in-Difference-in-Difference (DDD) model

$$Y_{iot} = \cdots + \beta_4(\mathsf{Post}_t \times \mathsf{DVrate}_o^c \times \mathsf{Female}_i) + \ldots$$

Main Findings:

The DV Law improved gender norms and women's bargaining power but limited FLFP



My Background

By the way...

- Affiliation: The University of Tokyo
- Field: Development Economics, Disability and Economics
- Research Interests: how hidden structures create inequality? Social mechanisms such as norms, stigma, bias, discrimination
- Using microdata and causal inference methods



Background

- In Kyrgyzstan, female education is high but FLFP is low.
 - Lower secondary completion: 94.4% for girls, 95.7% for boys.
 - LFP: 53.5% for women, 79% for men
- Education → Employment
- What is needed?



Role of Social Norms

- In economics, firm-side policy...but focused on how social **norms** affect women's participation in the labor market
- Traditional gender-role norms lower FLFP.
- Key studies:
 - Bertrand et al. (2015): Gender identity and relative income.
 - Alesina et al. (2013): Historical roots of gender division in plough agriculture.
 - Lundberg (2024): Laws as instruments to alter norms.



Role of Social Norms

Social norms are really key to understanding why women's labor participation hasn't been improving much.

Policy: 2 approaches to overcome the norm (Jayachandran 2021).

- 1: Work around the norm (WFH)
- 2: Change norms (Law)

So...



Laws to challenge gender biased norms

- A gender-related legal reform was introduced:
 - 2017: Adoption of the Domestic Violence (DV) Law.



Theoretical Background: Dual Effects of the DV Law

Key idea:

DV affects intra-household bargaining power (Heath, 2014; Anderberg et al., 2016).

Mechanism:

DV Law \Rightarrow Women's bargaining powe $\uparrow \Rightarrow$ Risk of violence $\downarrow \Rightarrow$ Opportunity cost of working \downarrow

⇒ Labor participation becomes economically rational

Implication:

DV Law may shape both norms and behaviors.



Research Question

Did the 2017 Domestic Violence Law in Kyrgyzstan

- \rightarrow Norm?
- → women's decision making?
- \rightarrow FLFP?
 - Does law function as a catalyst for normative change?
 - How does it affect women's autonomy and bargaining power?
 - Are changes reflected in labor participation?



Conceptual Summary Diagram

```
DV Law \Rightarrow (1) Normative Shift \uparrow \Rightarrow Gender attitudes \uparrow \Rightarrow FLFP \uparrow
DV Law \Rightarrow (2) Fallback & Bargaining Power \uparrow \Rightarrow Decision-making \uparrow
\Rightarrow FLFP \uparrow
```



00000000000

Contribution

- Extends literature on social norms and female labor supply:
- Provides the first empirical analysis of this DV Law
- Highlights the gap between attitudinal and behavioral change.
- Legal reform alone may not achieve full empowerment.



3.1 Data Source: Overview

- Data: Life in Kyrgyzstan (LiK) Study, Individuals aged 18+
- Waves used: 2013, 2016, 2019.
- **Balanced panel**: 6,874 individual-year observations (2016-2019).
- **Treatment**: 2017 Domestic Violence Law.



3.2 Key Variables: Overview

Outcome Categories

- Outcome 1: Gender Attitudes
- Outcome 2: Labor Force Participation (Past 7 days)
- Outcome 3: Decision-Making Power

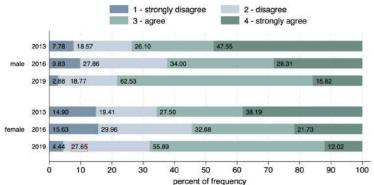
Oblast-level baseline DV prevalence (2016)



Changes in Gender Attitudes Over Time

On a scale from 1 to 4, how much do you agree with the following statements?

A husband's career should be more important to the wife than her own.

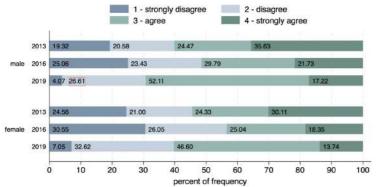




Changes in Gender Attitudes Over Time

On a scale from 1 to 4, how much do you agree with the following statements?

Woman should not work outside her home due to religious considerations.





Motivation for Empirical Design

- Goal: Estimate causal effect of Kyrgyzstan's 2017 DV Law on gender attitudes and FLFP.
- Challenge: Law implemented **nationwide** no explicit control group.
- Strategy: Use variation in baseline DV prevalence across oblasts (2016) as proxy for treatment intensity.
- Apply an intensiry Difference-in-Difference-in-Differences (DDD) framework with individual panel data.



18/52

Annual Trend of DV Incidence Rates Among Women

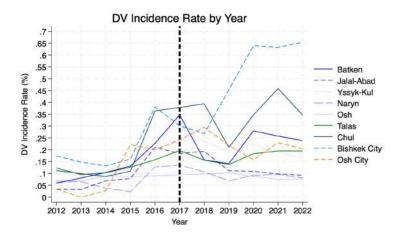


Figure: The annual trend of DV incidence rates among women by oblast.

Chisato Tachibana October 11, 2025

Measurement Considerations

- DV data come from administrative reports (National Statistical Committee).
- Reflect **reported cases**, not true prevalence.
- Urban oblasts (e.g., Bishkek) → easier reporting, higher recorded incidence.
- Rural oblasts \rightarrow stigma and access barriers \rightarrow likely underreporting.
- Interpretation: proxy for reporting intensity / institutional capacity.



Empirical Model

$$\begin{aligned} \textit{Y}_{\textit{iot}} = \alpha + \beta_{\textit{1}} \textit{Post}_{\textit{t}} + \beta_{\textit{2}} (\textit{Post}_{\textit{t}} \times \textit{DV}_{\textit{o}}^{\textit{c}}) + \beta_{\textit{3}} (\textit{Post}_{\textit{t}} \times \textit{Female}_{\textit{i}}) \\ + \beta_{\textit{4}} (\textit{Post}_{\textit{t}} \times \textit{DV}_{\textit{o}}^{\textit{c}} \times \textit{Female}_{\textit{i}}) + \textit{Post}_{\textit{t}} \textit{X}_{\textit{i},\textit{16}}^{\prime} \gamma + \gamma_{\textit{i}} + \epsilon_{\textit{iot}} \end{aligned}$$

- Y_{iot} : Outcome for individual i in oblast o at time t
- DV_0^c : Mean-centered DV rate (2016)
- *Post_t*: 1 if 2019 (after law), 0 if 2016
- Female: 1 for women, 0 for men
- $X_{i,16}$: Baseline covariates (age, marital status, children, consumption)

4 D > 4 A P > 4 B > 4

Interpretation of Coefficients

- β_1 : Post-reform effect for **men** in oblast with average DV rate.
- β_2 : How post-reform change varies for men across in higher-DV oblasts.
- β_3 : Additional post-reform effect for women (vs. men) in average-DV oblast.
- β_4 : **Key parameter (DDD)** extra post-reform change for women in higher-DV oblasts.

Female dummy allow estimation of gender-differentiated effects. Interpretation: Does the DV Law have a stronger impact where baseline DV was higher?



Concept of Intensity DDD

Compare differential changes:

- Time: Pre vs. Post (2016 vs. 2019)
- Region: Higher vs. Lower average DV rate
- Gender: Female vs. Male



Identification Strategy (recap)

- Although law applied nationwide, regions differ in:
 - Pre-law DV prevalence (reporting intensity)
 - Institutional capacity and exposure
- These regional differences are plausibly exogenous, reflecting administrative infrastructure rather than individual choices.
- DV rate (2016) used as treatment intensity, fixed before reform.



Assumptions and Validation

Key Assumptior

Parallel trends: Absent the reform, oblasts with different baseline DV prevalence would have evolved similarly in outcomes.

- Checked using **pre-trend** (**placebo**) **test** with 2013–2016 data.
- No significant DDD interactions \rightarrow supports parallel trends.
- Go to Appendix



- Small number of clusters: 9 oblasts.
- Use Wild Cluster Bootstrap p
 - 10,000 bootstrap replications.
 - Webb weights (robust for < 10 clusters).
- Provides more reliable p-values for small-cluster settings.



Summary Statistics (Outcomes & Treatment)

| | Mean | Std. dev. | Min | Max |
|--------------------------------|--------|-----------|--------|-------|
| Outcomes | | | | |
| Work (past 7 days) | 0.506 | 0.500 | 0 | 1 |
| No WWOH | 2.564 | 0.962 | 1 | 4 |
| Husband career importance | 2.756 | 0.860 | 1 | 4 |
| Risk attitude (std., 2016=0) | -0.219 | 1.124 | -1.890 | 2.099 |
| Female decision-making index | 0.574 | 0.365 | 0 | 1 |
| Treatment and demographics | | | | |
| DV rate (2016) | 0.206 | 0.099 | .0895 | 0.381 |
| DV rate mean-centered (2016) | 0.000 | 0.099 | -0.116 | 0.175 |
| Female | 0.562 | 0.496 | 0 | 1 |
| Post year(=2019) | 0.500 | 0.500 | 0 | 1 |
| Average sample size per oblast | 764 | 539.7 | 266 | 1,675 |



Chisato Tachibana

- DDD model captures heterogeneity in exposure intensity to the DV Law.
- Key variable: **Post × DV rate × Female**.
- Allows us to identify:
 - How effects differ by gender.
 - How those effects vary by pre-reform DV prevalence.
- Robust inference using wild cluster bootstrap.



Gender Attitudes toward FLFP

Sample restricted to respondents who strongly agreed with the statements in 2016.

| | (1) No.WWOH_reli | (2) Huscareer | (3) No.WWOH_reli | (4) Huscareer |
|------------------------------|------------------|---------------|------------------|---------------|
| Post (2019 = 1) | -1.052*** | -1.044*** | -1.017 | -0.124 |
| | (0.003) | (0.000) | (0.574) | (0.912) |
| Post × DV rate | -1.716 | -0.760 | -1.689** | -0.684 |
| | (0.120) | (0.348) | (0.048) | (0.513) |
| Post × Female | -0.256*** | -0.164*** | -0.273*** | -0.169*** |
| | (0.004) | (0.003) | (0.003) | (0.004) |
| Post × DV rate × Female | -1.175* | -1.602* | -0.964* | -1.566* |
| | (0.095) | (0.060) | (0.074) | (0.081) |
| Baseline covariates included | No | No | Yes | Yes |
| N | 1346 | 1686 | 1306 | 1616 |
| Clusters | 9 | 9 | 9 | 9 |
| Reps (Bootstrap) | 10000 | 10000 | 10000 | 10000 |
| | | | | |

Norm ↑ for women overall + high DV prevalence regions



29/52

Gender Attitudes toward FLFP

- **Post × Female:** Women became less likely than men to endorse traditional gender norms after the reform.
- **Post × DV rate × Female:** Larger decline among women in oblasts with higher pre-reform DV prevalence, relative to men in the same oblasts and to low-DV regions.
- **Post:** Negative and significant in baseline model, but becomes insignificant once controlling for demographics.

Women who initially held conservative gender views showed the largest normative improvements. They became less likely to agree that "Women should not work outside the home (No WWOH reli)" and "A husband's career should be prioritized (Huscareer)"

Overall, the DV Law fostered broad-based improvement in gender attitudes, especially among women in high-DV oblasts.

Chisato Tachibana October 11, 2025

FLFP

| (1) Work | (2) Work |
|----------|--|
| 0.024 | 0.305 |
| (0.703) | (0.637) |
| -0.911 | -0.961 |
| (0.304) | (0.344) |
| 0.036* | 0.039** |
| (0.070) | (0.040) |
| 0.511 | 0.572 |
| (0.160) | (0.160) |
| No | Yes |
| 6,874 | 6,734 |
| 9 | 9 |
| 10,000 | 10,000 |
| | 0.024 (0.703) -0.911 (0.304) 0.036* (0.070) 0.511 (0.160) No 6,874 9 |

no significant effect



Female Labor Force Participation (FLFP)

FLFP increased modestly after the 2017 DV Law relative to men. However, this rise cannot be directly attributed to the DV Law's heterogeneous effects, since DDD terms are insignificant, implying that macroeconomic or family-support factors likely drove the overall improvement.



Decision Making

Measured as share of household decisions involving a female member (proxy for bargaining power)

| | (1) Fem dm index | (2) Fem dm index (with controls) |
|-------------------------------|------------------|----------------------------------|
| Post (2019 = 1) | -0.019 | 1.088** |
| | (0.876) | (0.022) |
| Post × DV rate | 0.228 | 0.298 |
| | (0.183) | (0.159) |
| Post × Female | 0.043** | 0.039* |
| | (0.029) | (0.056) |
| Post × DV rate × Female (DDD) | 0.168 | 0.192** |
| | (0.161) | (0.027) |
| Baseline covariates included | No | Yes |
| Obs | 6,874 | 6,734 |
| Clusters | 9 | 9 |
| Reps (Bootstrap) | 10,000 | 10,000 |

significant DDD \rightarrow women in high-DV oblasts show gains \square

October 11, 2025 Chisato Tachibana 32/52

Results Summary

- **Gender attitudes:** Women—especially in high-DV oblasts—became less supportive of restrictive gender atitude after the DV Law.
- **FLFP:** Female labor participation rose relative to men, but no heterogeneous effect by DV prevalence.
- **Decision-making:** Women gained greater household bargaining power, strongest in high-DV oblasts.

The DV Law fostered **normative and empowerment effects**, but only limited behavioral (FLFP) changes.



Discussion: Why Norm Change Alone Is Not Enough

Puzzle:

Law \Rightarrow Norms \uparrow , Bargaining \uparrow , but FLFP \times

Key Insight:

Sustainable FLFP = Norm Change × Structural Change

Reasons:

- Norms improved, but structural barriers remain
- Low-wage jobs, childcare burden, and limited options may block the causal link from attitude to behavior
- Norms may create structures, and structures may reproduce norms →feedback loop

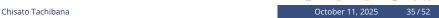
Conclusion:

Even with progressive attitudes, women still face restricted choices



Conclusion

- Institutional Support Needed: Legal rights must be accompanied by practical supports, accessible childcare or fair employment, and protection against discrimination, to change labor allocation and household power dynamics.
- Identification Scope: Estimates capture regional (not national) impacts, based on variation in pre-reform DV prevalence. Reported effects should be interpreted conservatively as upper bounds, admitting potential upward bias due to concurrent policies and social developments.
- Data Limitations: Relationship diversity (cohabitation, divorce, dating) not observed → potential unobserved heterogeneity.
 Married individuals more directly exposed; singles face lower DV risk.
- Structural Barriers: Women remain concentrated in low-wage, female-dominated sectors. Informal work and employer bias persist despite reforms.



(日) (周) (日) (日)

Further research

- Still unclear what was reallocated after women's bargaining power increased (e.g., housework, consumption, leisure).
 If data on women's consumption or housework hours were available, can test the bargaining model more structurally.
- Examine the dual-norm mechanism

My paper and replication code are available on GitHub.



Tnank you so much!



References I



The 'life in kyrgyzstan' study.

https://lifeinkyrgyzstan.org/. Accessed: 2024-12-02.



Aizer, A. (2010).

The gender wage gap and domestic violence.

American Economic Journal: Applied Economics, 2(1):128–129.



Akerlof, G. A. and Kranton, R. E. (2000).

Economics and identity.

The Ouarterly Journal of Economics, 115(3):715–753.



Alesina, A., Giuliano, P., and Nunn, N. (2013).

On the origins of gender roles: Women and the plough *.

The Quarterly Journal of Economics, 128(2):469-530.



Alonso-Borrego, C. and Carrasco, R. (2017).

Employment and the risk of domestic violence: Does the breadwinner's gender matter? Applied Economics. 49(50):5074–5091.



Anderberg, D., Rainer, H., Wadsworth, J., and Wilson, T. (2016).

Unemployment and domestic violence: Theory and evidence.

The Economic Journal, 126(597):1947-1979.



Arabsheibani, G. R., Kudebayeva, A., and Mussurov, A. (2021).

A note on bride kidnapping and labour supply behaviour of kyrgyz women. *Economic Systems*, 45(4):100885.

References II



Bazzi, S., Brodeur, A., Fiszbein, M., and Haddad, J. (2023).

Frontier history and gender norms in the united states.

Working Paper 31079, National Bureau of Economic Research.



Beaman, L., Duflo, E., Pande, R., and Topalova, P. (2009).

Powerful women: Does exposure reduce bias?

The Ouarterly Journal of Economics. 124(4):1497–1540.



Bertrand, M., Kamenica, E., and Pan, J. (2015).

Gender identity and relative income within households.

The Quarterly Journal of Economics, 130(2):571–614.



Bobonis, G. J., Castro, R., and Gonzalez-Brenes, M. (2013).

Public transfers and domestic violence: The roles of private information and spousal control.

American Economic Journal: Economic Policy, 5(1):179–205.



Buchmann, N., Field, E., Glennerster, R., Nazneen, S., and Wang, X. Y. (2023).

A signal to end child marriage: Theory and experimental evidence from bangladesh. *American Economic Review*, 113(10):2645–88.



Bursztyn, L., González, A. L., and Yanagizawa-Drott, D. (2020).

Misperceived social norms: Women working outside the home in saudi arabia.

American Economic Review, 110(10):2997–3029.



Cameron, A. C., Gelbach, J. B., and Miller, D. L. (2008).

Bootstrap-based improvements for inference with clustered errors.

Review of Economics and Statistics, 90(3):414-427.

References III



Cavapozzi, D., Francesconi, M., and Nicoletti, C. (2021).

The impact of gender role norms on mothers' labor supply.

Journal of Economic Behavior & Organization, 186:113-134.



Childress, S., Shrestha, N., Anekwe, K., et al. (2022).

Barriers to help-seeking for domestic violence in kyrgyzstan: Perspectives of criminal justice, social, health, and educational professionals.

Global Social Welfare, 9:179-192.



Fernández, R. and Fogli, A. (2009).

Culture: An empirical investigation of beliefs, work, and fertility.

American Economic Journal: Macroeconomics, 1(1):146–177.



García-Ramos, A. (2021).

Divorce laws and intimate partner violence: Evidence from mexico.

Journal of Development Economics, 150:102623.



Gedikli, F. G., Akyol, D. E., and Dayıoğlu, M. (2023).

Intimate partner violence and women's labour market outcomes: Evidence from turkey.

World Development, 163:106184.



Gruber, J. (1994).

The incidence of mandated maternity benefits. *American Economic Review*, 84(3):622–641.



Gu, Y., Liu, X., and Shen, Y. (2022).

The effects of anti-domestic violence laws on women's wellbeing and labor market outcomes: Evidence from china. *Journal of Comparative Economics*. 50(3):703–721.

References IV



Heath, R. (2014).

Women's access to labor market opportunities, control of household resources, and domestic violence: Evidence from bangladesh.

World Development, 57:32-46.



International Alert (2020).

Rapid assessment of the needs of women and girls in the context of covid-19 in kyrgyzstan. Accessed: 2024-12-01.



Jayachandran, S. (2021).

Social Norms as a Barrier to Women's Employment in Developing Countries.

IMF Economic Review, 69(3):576-595.



JICA and EY (2022).

Information development for promoting initiatives to eliminate gender-based violence. Report on Gender-Based Violence Elimination Information Development.



Kleinbach, R. and Salimjanova, L. (2007).

Kyz ala kachuu and adat: non-consensual bride kidnapping and tradition in kyrgyzstan. *Central Asian Survey*, 26(2):217–233.



La Ferrara, E., Chong, A., and Duryea, S. (2012).

Soap operas and fertility: Evidence from brazil.

American Economic Journal: Applied Economics, 4(4):1–31.



Lenze, H. and Klasen, S. (2017).

Does women's labor force participation reduce domestic violence? evidence from jordan.

Feminist Economics, 23(1):1–29.

References V



Lucas, A. M. (2010).

Malaria eradication and educational attainment: Evidence from paraguay and sri lanka.

American Economic Journal: Applied Economics, 2(2):46–71.



Lundberg, S. (2024).

The economics of gender norms.

Scottish Journal of Political Economy, n/a(n/a):e12407. e12407 SIPE-Oct-24-120.



Lundberg, S. and Pollak, R. A. (1993).

Separate spheres bargaining and the marriage market.

Journal of Political Economy, 101(6):988-1010.



Olden, A. and Møen, J. (2022).

The triple difference estimator.

The Econometrics Journal, 25(3):531-553.



Organization, W. H. et al. (2001).

Putting women first: Ethical and safety recommendations for research on domestic violence against women. Technical report, World Health Organization.



Ortiz-Villavicencio, M. and Sant'Anna, P. H. C. (2025).

Better understanding triple differences estimators.

arXiv preprint arXiv:2505.09942.



Roodman, D., MacKinnon, J., Nielsen, M., and Webb, M. (2019).

Fast and wild: bootstrap inference in stata using boottest.

Stata Journal, 19(1):4–60.

References VI



Stevenson, B. and Wolfers, J. (2006).

Bargaining in the shadow of the law: Divorce laws and family distress*. *The Quarterly Journal of Economics*, 121(1):267–288.



UNHCR (2016).

Unhcr's comments on the european commission proposal for an asylum procedures regulation.

https://webarchive.archive.unhcr.org/20230520180636/https //www.refworld.org/docid/57f635694.html. Accessed: 2025-01-26.



Watch, H. R. (2006).

Reconciled to violence: State failure to stop domestic abuse and abduction of women in kyrgyzstan. Accessed: 2024-12-01.



World Bank (2023).

Gender data portal: Kyrgyz republic.

Accessed: October 14, 2024.

How I made Female Decision-Making Power

- Constructed as the share of household decisions (out of 17) involving at least one female.
- Excludes items where "parents" jointly decide (gender unidentifiable).
- Range: 0–1; interpreted as a proxy for bargaining power.
- Reflects empowerment through household participation.



Treatment Variable: DV Rate (2016)

• DV rate by oblast (2016):

$$DV \ rate_{o,2016} = \frac{\text{Reported female DV victims}}{\text{Female population in oblast}}$$

Mean-centered for interpretation:

$$DV \ rate_{o,2016}^c = DV \ rate_{o,2016} - \overline{DV \ rate_{2016}}$$

 Allows Post dummy to represent effects for an oblast with average DV prevalence.



Sample Construction and Restrictions

- Exclude individuals who changed oblast between 2016–2019.
- Ensures that each person remains in a single treatment unit (oblast).
- Only 29 individuals dropped and negligible sample loss.



Detail of Descriptive analysis

| | Mean | Std. dev. | Min | Max | |
|--|---|-----------|--------|--------|--|
| Outcomes | | | | | |
| Work (past 7 days) | 0.506 | 0.500 | 0 | 1 | |
| No WWOH | 2.564 | 0.962 | 1 | 4 | |
| Husband career importance | 2.756 | 0.860 | 1 | 4 | |
| Risk attitude (std., 2016=0) | -0.219 | 1.124 | -1.890 | 2.099 | |
| Female decision-making index | 0.574 | 0.365 | 0 | 1 | |
| Treatment and demographics | | | | | |
| DV rate (2016) | 0.206 | 0.099 | .0895 | 0.381 | |
| DV rate mean-centered (2016) | 0.000 | 0.099 | -0.116 | 0.175 | |
| Female | 0.562 | 0.496 | 0 | 1 | |
| Post $year(=2019)$ | 0.500 | 0.500 | 0 | 1 | |
| Average sample size per oblast | 764 | 539.7 | 266 | 1,675 | |
| Baseline covariates (2016) | | | | | |
| Number of children (<18) | 2.134 | 1.653 | 0 | 9 | |
| Age | 43.031 | 15.384 | 18 | 92 | |
| Log food consumption | 11.553 | 0.446 | 9.989 | 13.703 | |
| Log non-food consumption | 13.355 | 0.806 | 10.086 | 16.203 | |
| Married | 0.780 | 0.414 | 0 | 1 | |
| Restrictions(=1 if strongly agree in 2016) | | | | | |
| No WWOH (2016) | 0.196 | 0.397 | 0 | 1 | |
| Husband career importance (2016) | 0.245 | 0.430 | 0 | 1 | |
| Observations | 6,874 (6,778 for consumption variables) | | | | |



47/52

Chisato Tachibana October 11, 2025

DDD Results of Pre-Trend Placebo Test

| | (1) No.WWOH_reli | (2) Huscareer | (3) Risk std | (4) Fem DM | (5) Work index |
|-------------------------|------------------|---------------|--------------|------------|----------------|
| Post (=1) | -1.324** | -1.027*** | -0.006 | 0.008** | 0.081* |
| | (0.012) | (0.004) | (0.956) | (0.011) | (0.084) |
| Post × DV rate | 10.672 | 8.060 | -4.675 | 0.008 | -2.841 |
| | (0.318) | (0.625) | (0.701) | (0.917) | (0.214) |
| Post × Female | -0.123 | -0.228* | -0.019 | 0.015*** | -0.030 |
| | (0.334) | (0.050) | (0.832) | (0.000) | (0.169) |
| Post × DV rate × Female | -6.117 | -5.164 | 4.930 | 0.049 | 1.075 |
| | (0.111) | (0.245) | (0.182) | (0.570) | (0.237) |
| Obs | 2,176 | 2,786 | 7,168 | 7,636 | 7,168 |
| Clusters | 9 | 9 | 9 | 9 | 9 |
| Reps (Bootstrap) | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |

 \Rightarrow The parallel trends assumption holds.





48/52

Chisato Tachibana October 11, 2025

FLFP with controls

| | (1) No_WWOH_reli | (2) Huscareer | (3) No_WWOH_reli | (4) Huscareer |
|---------------------------------------|------------------|---------------|------------------|---------------|
| Post $(2019 = 1)$ | -1.052*** | -1.044*** | -1.017 | -0.124 |
| | (0.003) | (0.000) | (0.574) | (0.912) |
| $Post \times DV$ rate | -1.716 | -0.760 | -1.689** | -0.684 |
| | (0.120) | (0.348) | (0.048) | (0.513) |
| Post × Female | -0.256*** | -0.164*** | -0.273*** | -0.169*** |
| | (0.004) | (0.003) | (0.003) | (0.004) |
| Post \times DV rate \times Female | -1.175* | -1.602* | -0.964* | -1.566* |
| | (0.095) | (0.060) | (0.074) | (0.081) |
| Num children (baseline) × Post | - American Salar | 1500110100051 | -0.032*** | -0.007 |
| | | | (0.008) | (0.586) |
| Age (baseline) × Post | | | 0.016** | 0.007 |
| | | | (0.018) | (0.354) |
| Age^2 (baseline) × Post | | | -0.000 | -0.000 |
| | | | (0.133) | (0.394) |
| Log food cons. (baseline) × Post | | | 0.017 | 0.022 |
| | | | (0.912) | (0.825) |
| Log non-food cons. (baseline) × Post | | | -0.041 | 0.043 |
| 13 17 | | | (0.562) | (0.306) |
| Married (baseline) × Post | | | 0.020 | -0.041 |
| | | | (0.709) | (0.638) |
| N | 1346 | 1686 | 1306 | 1616 |
| clusters | 9 | 9 | 9 | 9 |
| reps | 10000 | 10000 | 10000 | 10000 |



The Collective Household Model and Implications for FLFP

Utility Maximization under the Collective Model:

$$\max_{c_f,c_m,l_f,l_m} \lambda U_f(c_f,l_f) + (1-\lambda)U_m(c_m,l_m)$$

- λ: bargaining weight of the wife.
- DV Law $\Rightarrow \lambda \uparrow$ (improved fallback position).
- ⇒ Wife's decision power ↑

Standard Theoretical Prediction:

- $\lambda \uparrow \Rightarrow$ Wife's consumption \uparrow , leisure $\uparrow \Rightarrow$ Labor supply \downarrow
- Because it is assumed that the wife prefers more leisure.

4□ > 4ⓓ > 4ಠ > 4ಠ > € 900

Cont'd

In this Context (Kyrgyzstan):

- Case1: "Freedom to work"
 - fallback position ↑
 - housework hours \(\psi \) due to reallocation
 - bargaining power $\lambda \uparrow \uparrow \Rightarrow \mathsf{FLFP} \uparrow$
- Case 2: "Freedom not to work" / strong social constraints
 - DV Law ⇒ bargaining power↑ but norms still restrictive
 - Women can now choose not to work
 - it never show the FLFP
 - $\lambda \uparrow \Rightarrow \mathsf{FLFP} \to \mathsf{or} \downarrow$
- → The direction of FLFP depends on women's underlying preferences and social norms. As Udry (1996) shows, in many developing contexts, the collective model may not hold due to limited cooperation within households.

Chisato Tachibana October 11, 2025

Why analyzed separately?

- why don't you check **DV Law** \rightarrow **Gender Norms** \rightarrow **FLFP** ?
- Limitation of reduced form
- Making the theory model

From an econometric perspective, it is appropriate to first estimate the **total effect** of the law:

- ① DV Law → FLFP (total effect)
- Then examine partial channels:

DV Law \rightarrow Norms

DV Law → FLFP

