

Labor Market Flexibility and Gender Heterogeneity in Labor Allocation

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Policy Research Workshop:
Women and Jobs in Latin America and the Caribbean

- ▶ Institutional rigidities in the labor market can constrain agents from freely choosing their optimal working hours (Carry, 2022; Lachowska et al., 2023).
- ▶ Labor regulations that restrict the availability of part-time work mainly affect women (Carry, 2022; Del Boca, 2002):
 - Women place more value on flexibility in work hours than men (Goldin, 2015; Goldin and Katz, 2011; Mas and Pallais, 2017; Maestas et al., 2018).
 - There is more variability in preferences for work schedules among women.
- ▶ Little evidence on whether policies aimed at enhancing flexibility can improve overall market efficiency and promote greater job opportunities.
- ▶ Gender-neutral policies can have different implications for female and male workers when gender differences in the propensity to enter a job are stark.

How does formal employment respond to labor market flexibility shocks?

- ▶ I examine the Brazilian Labor Reform (BLR) implemented in November 2017.
- ▶ Among the substantial changes introduced by the BLR, the reform had 3 key aspects:
 - ① Introduction of intermittent workers (or freelancers).
 - ② Legal adjustments relevant to part-time jobs (flexible hours and wages).
 - ③ Reduction of severance pay (40%→20% of the balance in the worker's social insurance fund).
- ▶ I compare firms with different work-hour constraints before the reform (measure of how sensitive firms are to a flexibility shock).

Contribution to the literature

- ▶ Gender heterogeneity in labor allocation and work hour preferences
e.g., Wasserman (2023); Carry (2022); Wiswall and Zafar (2017); Mas and Pallais (2017)
⇒ **rich administrative data to estimate gender-specific labor allocation and employment responses to an enhanced market flexibility**
- ▶ Labor supply and the role of hour constraints
e.g., Chetty et al. (2011); Lachowska et al. (2023); Labanca and Pozzoli (2022); Wasserman (2023)
⇒ **focus on how labor regulations and the associated costs are a source of hours constraints**
- ▶ Working time regulations and labor policies
e.g., Daruich et al. (2023); Hunt (1999); Chemin and Wasmer (2009)
⇒ **explore labor demand-supply adjustments in a developing country context, focusing on frictions such as informality**

① *Relação Anual de Informações Sociais (RAIS)*

- LEED covering the universe of the formal sector
- Period 2014-2019
- Private establishments with at least 5 workers in RAIS
- Working-age population aged between 18 and 64

② **The National Household Survey (PNAD-Contínua):**

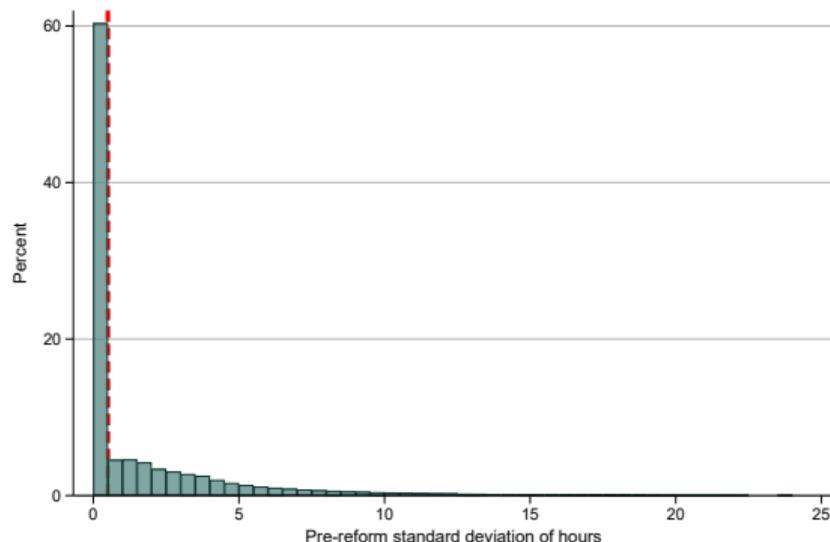
- Survey data contain information on individuals' labor market outcomes (e.g., work hours, wages and employment), including *formality status* (whether they hold a signed work booklet).
- **Individual-level panel:** labor status, demographics, and household characteristics across five consecutive quarters \Rightarrow transitions from informal to formal jobs.
- **State-level dataset:** For each state and quarter, I separately compute unemployment and informality rates.

Firm-level Exposure to the Reform: Constraints on Hours

- ▶ Constraints on hours: workers have limited discretion over hours and may be constrained to work undesired hours.
 - ⇒ Brazilian labor regulation and the associated costs are a source of hours constraints.
- ▶ I find that work hours vary across occupations and education levels, based on self-reported hours worked.
- ▶ Following [Labanca and Pozzoli \(2022\)](#), my measure of hours constraints is the pre-reform standard deviation of the mean hours worked across skill groups.
 - 1 Construct a measure of skill given by the intersection of the education (4) and 1-digit occupation (9) categories.
 - ▶ Skill Groups
 - 2 Calculate the mean hours worked for each skill group.
 - 3 Calculate the st. dev. of (2) across skill groups.

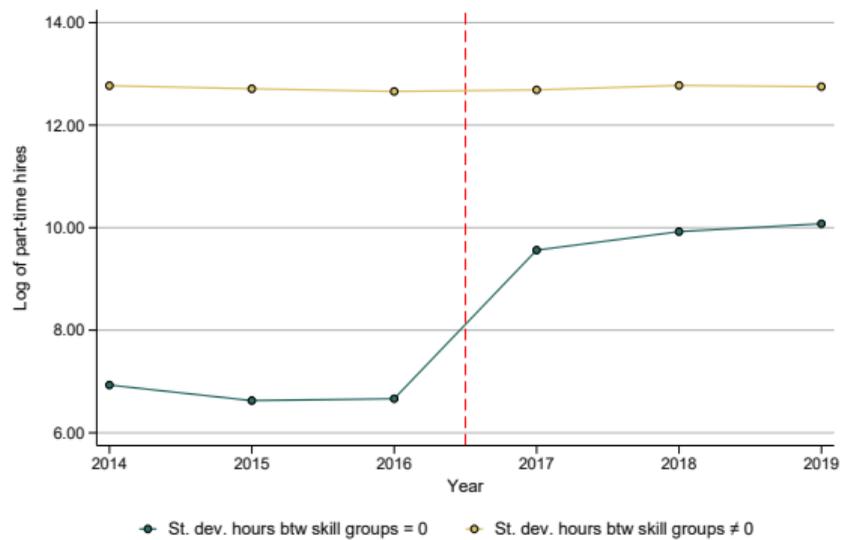
Firm-level Exposure to the Reform: Constraints on Hours

Distribution of Pre-Reform Standard Deviation of Hours across Skill Groups



- 60% of the firms have a standard deviation of hours across skill groups equal to zero.
- Employers either face strong restrictions in offering diverse work schedules or exhibit strong preferences for full-time workers.

Aggregate Number of Part-time Hires



DID specification:

$$y_{ft} = \alpha_f + \lambda_{j(f),t} + \sum_{\substack{k=2 \\ k=-4 \\ k \neq -1}} \beta_k \times \mathbb{1}\{\overline{\sigma}_f = 0\} \times \mathbb{1}\{t = 2017 + k\} + \varepsilon_{ft} \quad (1)$$

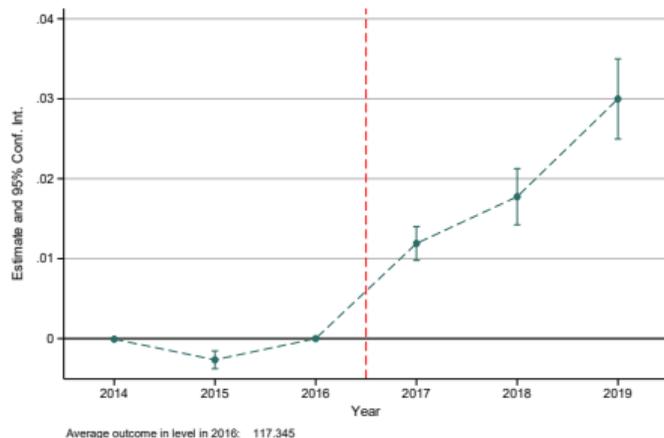
where

- y_{ft} is a *detrended* firm-level outcome—such as the share of part-time jobs observed in firm f and year t .
- $\mathbb{1}\{\overline{\sigma}_f = 0\}$ indicates whether the firm has a pre-reform standard deviation of hours across skill groups equal to zero.
- $\mathbb{1}\{t = 2017 + k\}$ is an event study indicator.
- α_f and $\lambda_{j(f),t}$ denote firm and state-by-year fixed effects.

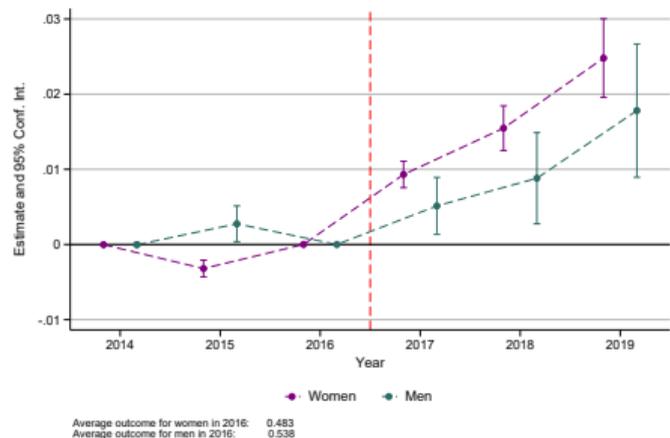
Identification: outcomes at firms with strict constraints on hours ($\overline{\sigma}_f = 0$) would have evolved similarly to those with loose constraints on hours.

The Effect of the 2017 Reform on Firm-Level Outcomes

Log Number of Jobs



% of Jobs in terms of of 2014 Jobs



- The reform yielded a significant increase in the number of jobs: in 2019, annual jobs increased by 3.0%.
- The effect reached 2.5 percentage points for women and 1.8 percentage points for men.

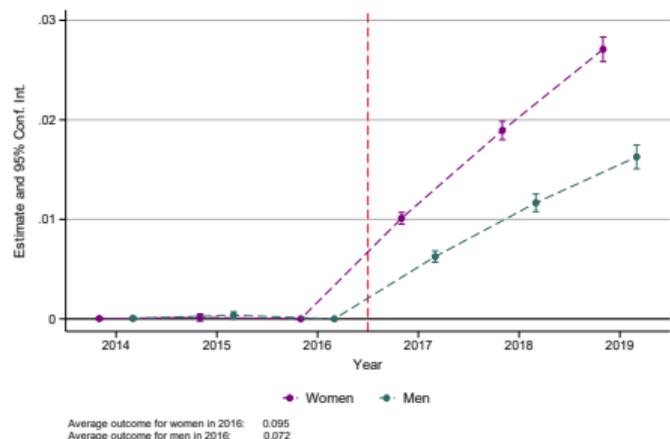
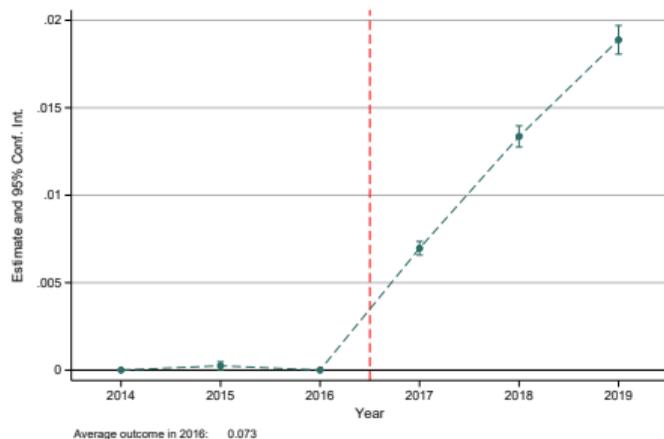
▶ Firm heterogeneity

▶ Part-time Jobs

▶ Full-time Jobs

The Effect of the 2017 Reform on Firm-Level Outcomes

Share of Part-Time Jobs ($h \leq 25$)



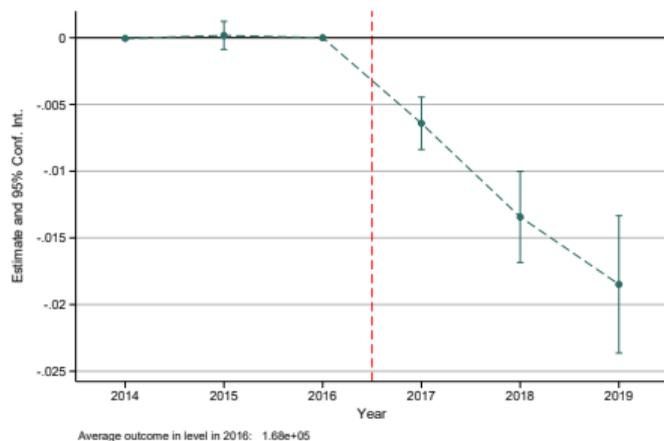
- In 2019, the share of part-time jobs increased by 1.9 percentage points.
- The effect of the reform reached 2.7pp for women, while the effect on men was 1.6pp.

▶ Firm heterogeneity

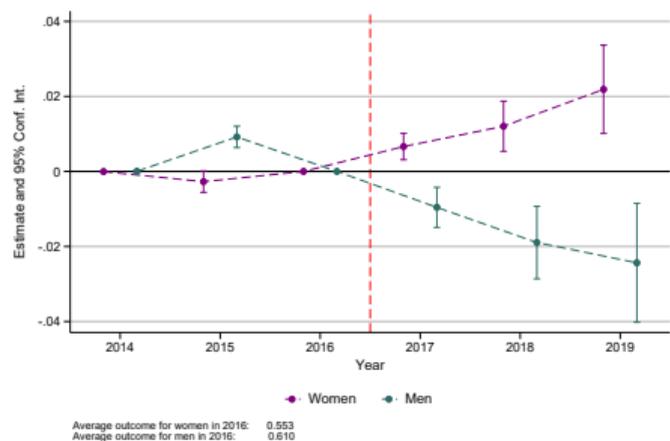
▶ New Part-time Jobs

The Effect of the 2017 Reform on Firm-Level Outcomes

Log of Total Hours Worked in the Firm



Total Hours Worked in the Firm in terms of 2014



- In 2019, women in firms subject to pre-reform strict hours constraints experienced an increase of 2.2 percentage points in their total hours worked, relative to those in firms with looser constraints

▶ Firm heterogeneity

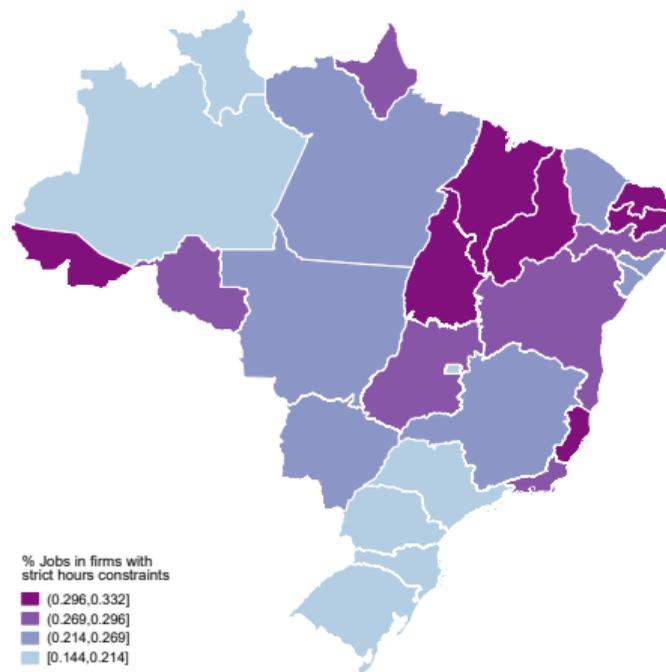
▶ Avg. Number of Employees

- ▶ Parallel trend assumption using **Rambachan and Roth (2023)**. ▶ Rambachan and Roth
- ▶ Firm sample considering firms employing at least 3 skill groups in the pre-reform period.
▶ Change in firm sample
- ▶ Mean reversion is unlikely to be driving the main results. ▶ Mean Reversion
- ▶ Change exposure definition:
 - Standard deviation of hours across all workers within a firm. ▶ St. Dev. Hours
 - Industry-state level formality rate (i.e., the fraction of formal workers). ▶ Formality Rate

- The overall effect of the reform remains uncertain.
- The reform's impact on firm-level employment could be explained by:
 - ① Reallocation of workers within the formal market.
 - ② Absorption of workers from the informal labor market.
 - ③ Hiring of unemployed workers.

State-level Exposure: % Jobs in Constrained Firms

Exposure to the 2017 Labor Reform across Brazilian States

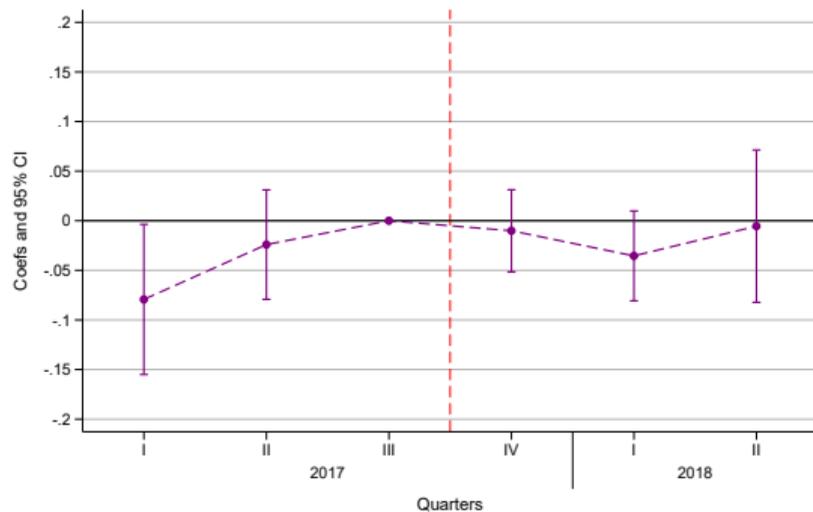


- The exposure measure reflects the fraction of jobs offered by firms with strict hours constraints for each state.

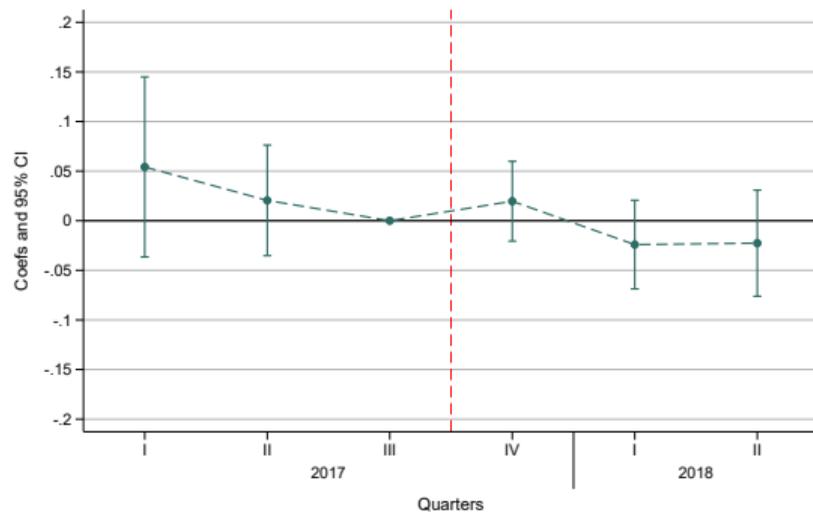
The Effect of the 2017 Reform: Individual-level panel

Probability of Being Employed, either formally or informally

Women



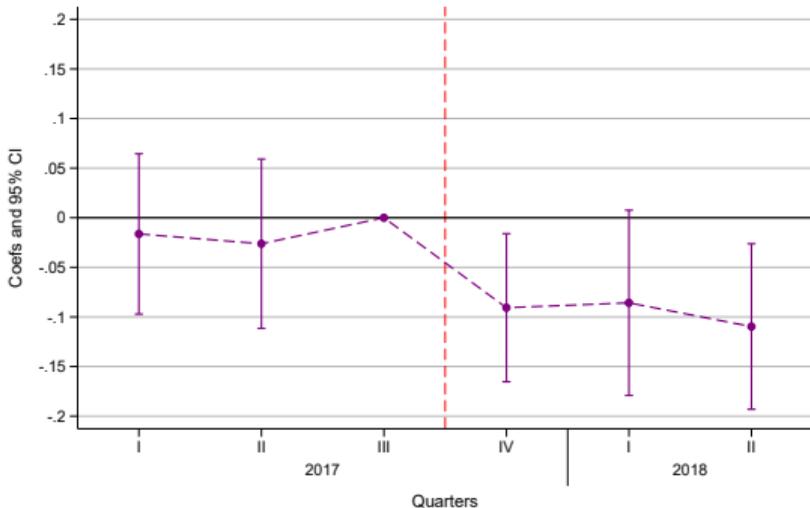
Men



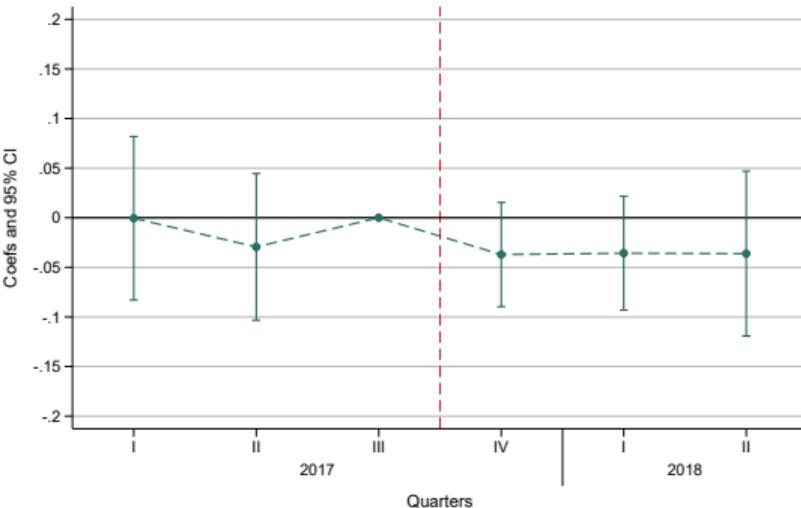
The Effect of the 2017 Reform: Individual-level panel

Probability of Working Informally in the Private Sector

Women



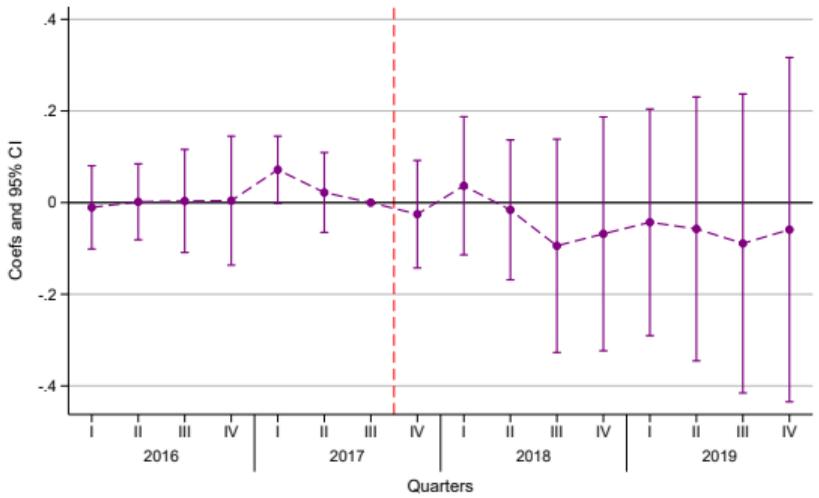
Men



The Effect of the 2017 Reform on State-Level Outcomes

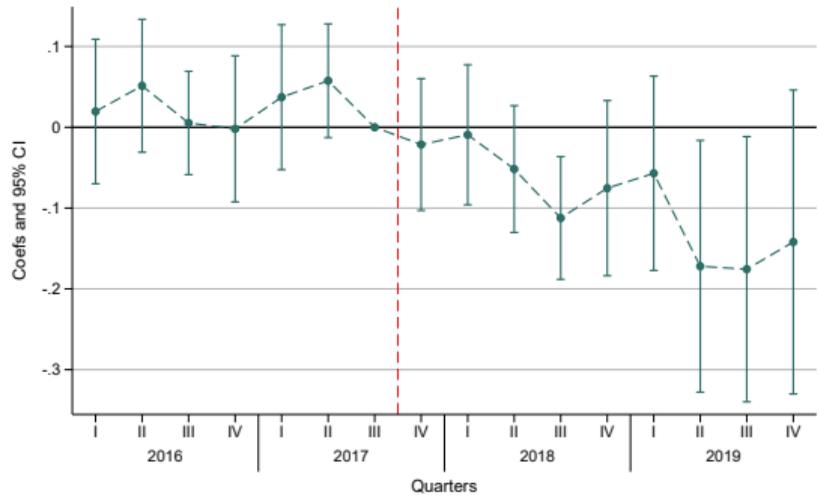
Unemployment

Women



Average outcome in 2017Q3: 0.139

Men

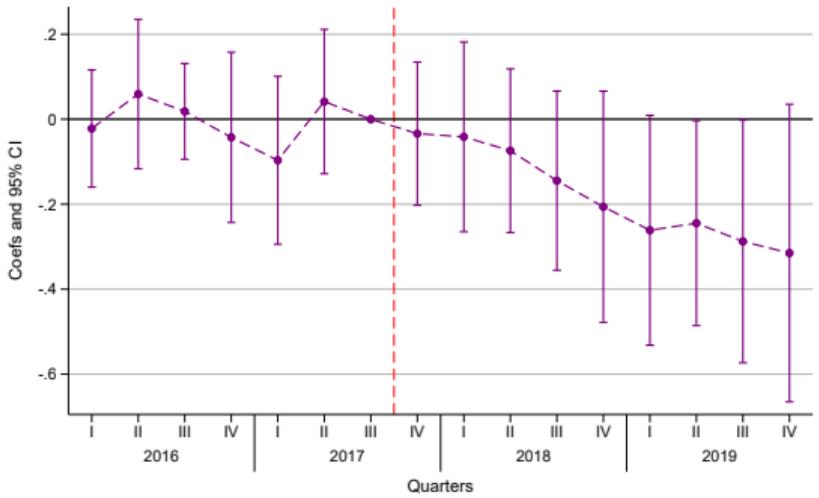


Average outcome in 2017Q3: 0.104

The Effect of the 2017 Reform on State-Level Outcomes

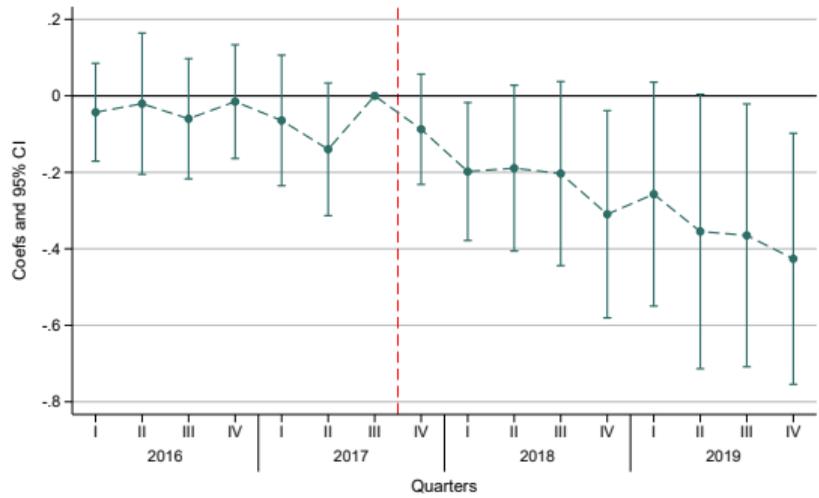
Informality

Women



Average outcome in 2017Q3: 0.437

Men



Average outcome in 2017Q3: 0.358

Main takeaways

- After the reform, firms are more likely to change their worker composition in response to eased constraints on working hours:
 - Substitution of full-time workers with part-time workers.
- While both men and women benefited from the reform in terms of jobs and composition effects, the positive impact on female employment was more prominent.
- The reform facilitated the transition of informal workers into formal employment.
 - Reduction in informality is predominantly driven by women transitioning from informal to formal employment within the private sector in the short term.
 - This trend is followed by both women and men in the state-level economy in the medium term.

Thanks!

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36 categories based on:

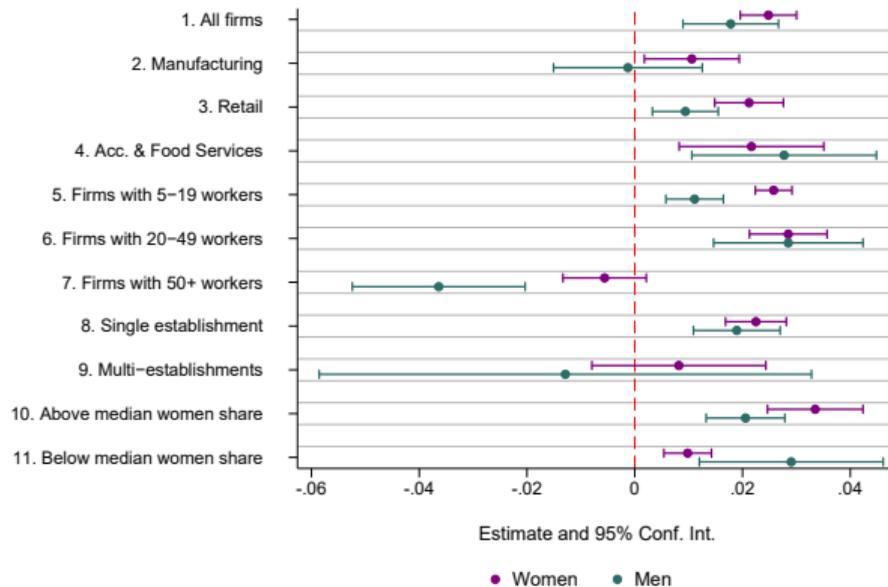
1 Education categories:

- Less than primary education
- Complete primary education
- Complete secondary education
- Post-secondary education

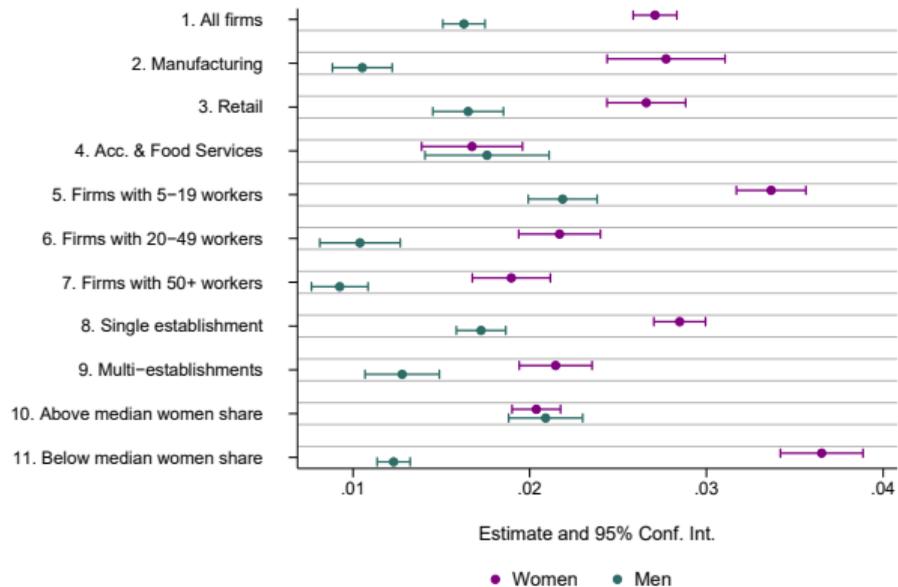
2 Occupation categories:

- Management occupation
- Professionals
- Technicians and associate professionals
- Clerical support workers
- Service and sales workers
- Skilled agricultural, forestry and fishery workers
- Craft related trade workers
- Plant and machine operators, and assemblers
- Elementary occupations

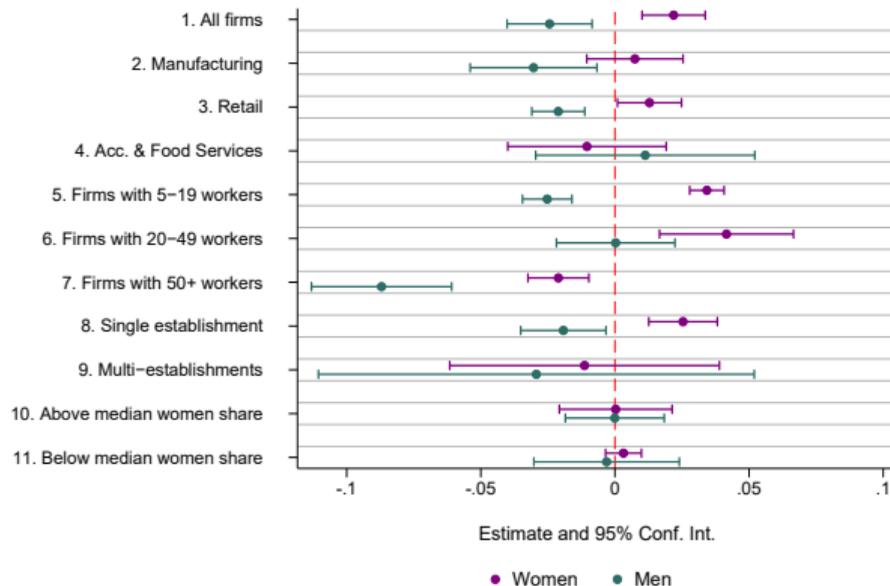
Annual Jobs



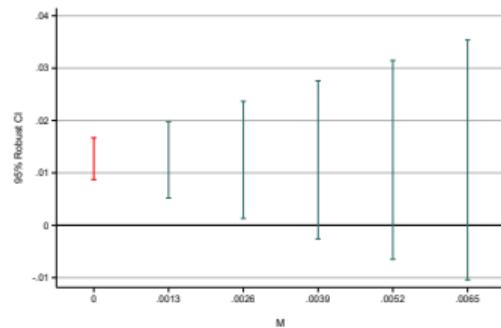
Share of Part-Time Jobs ($h \leq 25$)



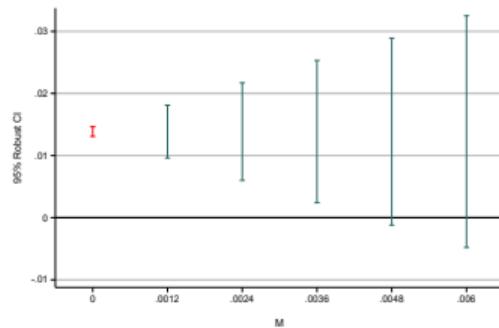
Total Hours Worked in the Firm in terms of 2014



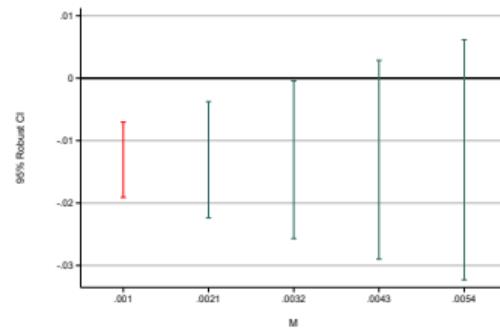
Log of Jobs



Share of Part-Time Jobs ($h \leq 25$)

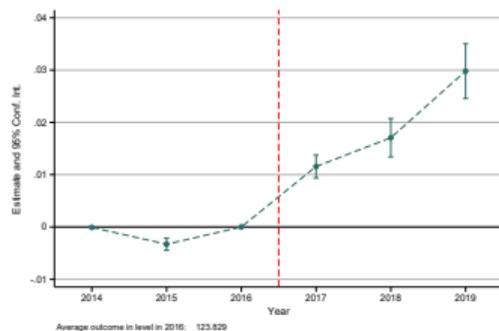


Log Total Hours Worked

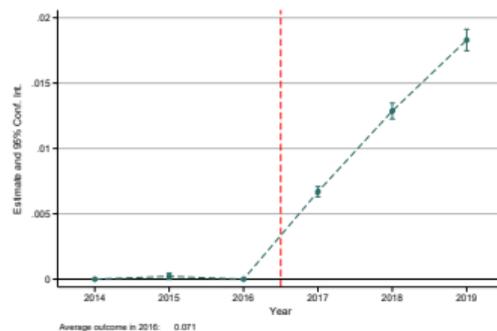


Firms with at least 3 skill groups

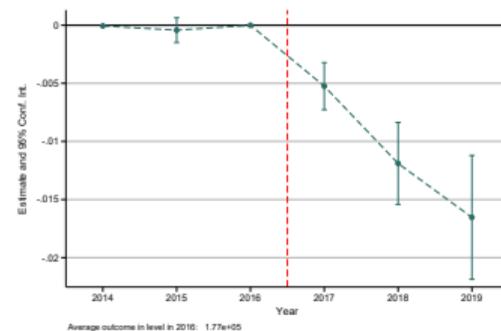
Log of Jobs



Share of Part-Time Jobs ($h \leq 25$)

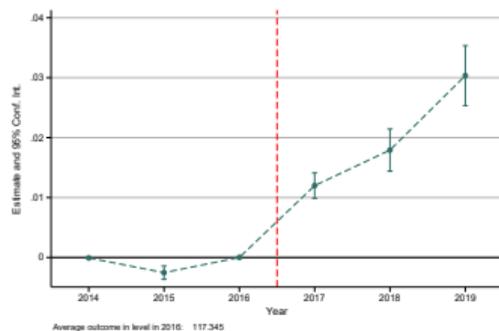


Log Total Hours Worked

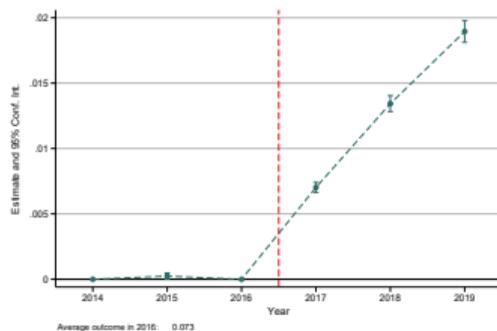


Exposure Definition I: Standard deviation of hours across all workers

Log of Jobs



Share of Part-Time Jobs ($h \leq 25$)



Log Total Hours Worked

