

The Gender Gap in Tax Evasion

Eduard Krkoska

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Motivation & Contribution

- Despite progress towards convergence, large gender gaps remains until this day
- Large literature explaining:
 - Narrowing of gender gaps over time (Blau and Kahn, 2017; Ngai and Petrongolo, 2017)
 - Sources of remaining gaps (Adams-Prassl et al., 2023; Goldin, 2014; Petrongolo & Ronchi, 2020; Kleven et al., 2019)
- Complementary literature on gender differences in preferences (Borghans et al., 2009; Niederle, 2017; Croson & Gneezy, 2009; Erat and Gneezy, 2009, Exley et al, 2022; Roussille, 2022)
- I contribute to both literatures by studying the unexplored gender-gap in tax evasion and its sources

Motivation: Romania

- Second lowest raw wage gap in the EU (European Commission)
- My data: raw gender wage gap of 4.5%, shrinks to zero just controlling for hours
- Thought to be persistence of explicit gender equality policies during communism (Andren & Andren, 2015; Vanc & White, 2011)
- Can also be rationalised by gap between true and reported wages

Tax Evasion in Romania

- Anecdotally, tax-evasion is common
 - Employer reporting \implies collusion to under-report income
- The story:
 - Employer reports (and tax is paid on) minimum wage
 - Remainder of the salary is paid cash-in-hand/under the table
- One Romanian newspaper asks “Why do one third of Romanian employees earn only the minimum wage? Is it tax evasion [...]?”
- Another claims this is “as difficult to stop as it is widespread”
- Conviction that “nearly all MW workers earn untaxed side payments” in East and S. East Europe (Elek, 2012)

- Monthly matched employee-employer tax returns from Jan 2018 to Jan 2020
 - Approx 5.5 Million employee observations per month
 - Approx 460 Thousand firm observations per month
- Provided by Romanian Ministry of Public Finance
- Employee data contains info on reported wages, hours (contracted and actually worked), gender, age, dependents and location
- Employer data contains detailed sector codes and firm income

Collusion: Descriptive Evidence

- Collusion \implies difficult to sustain in large firms

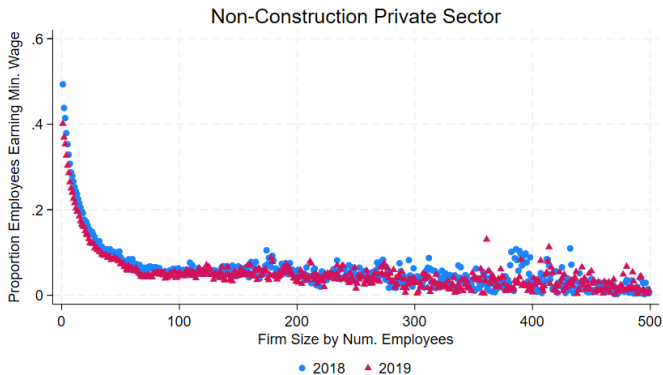


Figure: Minimum Wage Work by Firm Size

Identification: Tax Reform

- Major reforms in construction sector for employees of eligible firms
 - Unannounced “Govt. Emergency Ordinance” in Dec 2018
 - Eligible if construction \geq 80% firm revenue
- Major decreases in personal tax rates
 - But new minimum wage approx. 50% above regular minimum wage
- Policy offer attractive if true wages above new min. wage

Changing Tax Schedule

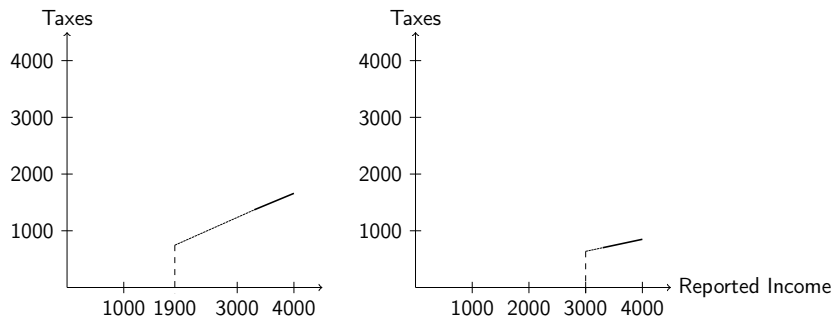


Figure: Tax and Other Contributions vs Reported Gross Salary

Take-up

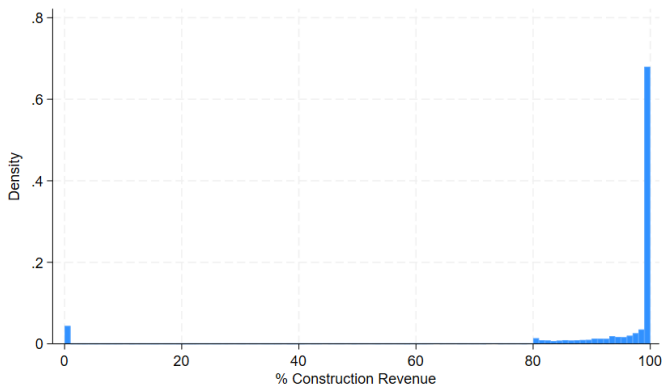


Figure: Percent Construction Revenue Reported

Collusion: Construction Sector

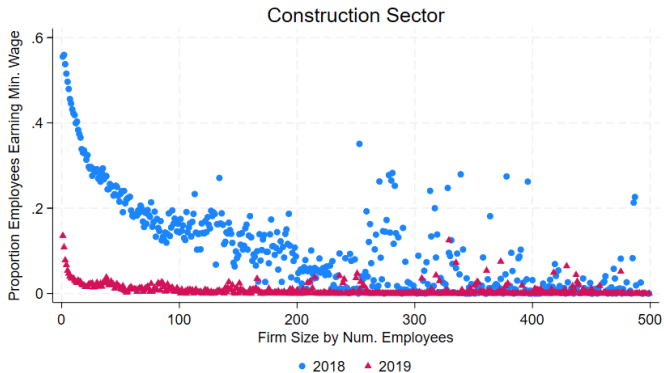


Figure: Minimum Wage Work by Firm Size

No Excess Separations

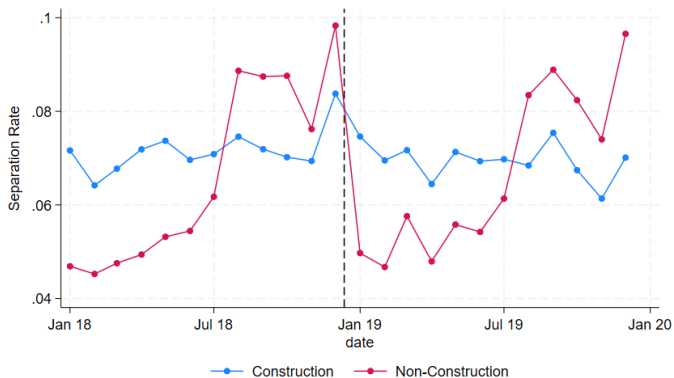


Figure: Job Separation Rates

Employment Effects

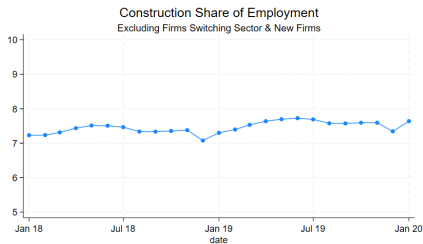
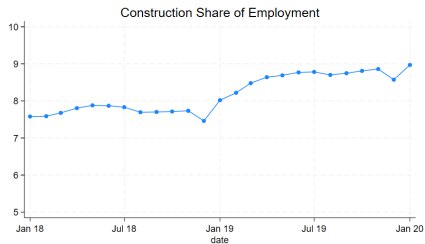
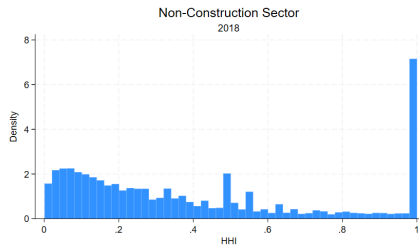
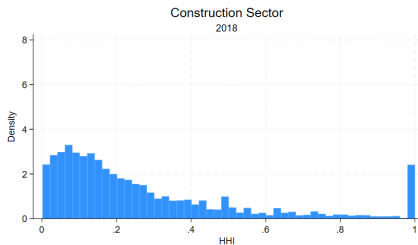


Figure: Construction Employment

Is the Market Monopsonistic?

- Empirically, it is relatively competitive



- To address wage markdowns/bargaining \implies one (wo-)man bands

Reported Wage Distributions

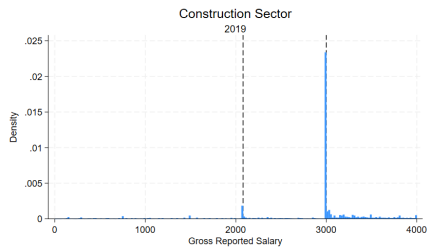
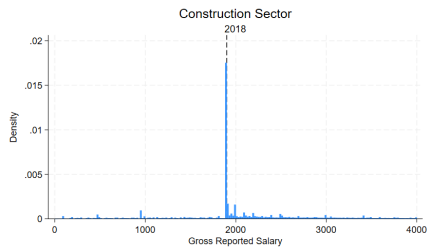


Figure: Gross Wages Histogram

Source of the gender gap?

- Occupational Segregation
 - E.g. men on the construction site and women doing accounting
- Bargaining power of male and female employees with their employers may be different
- Sorting into different firms

- Balance panel (exclude switchers)
- Look at jumps from NMW

Event-Study Diff-in-Diff

$$y_{i,t} = \sum_{\forall s \neq -1} \beta_s \mathbb{1}\{treated_{s=t}\} + \alpha_i + \alpha_t + \epsilon_{i,t}$$

Diff-in-Diff Results

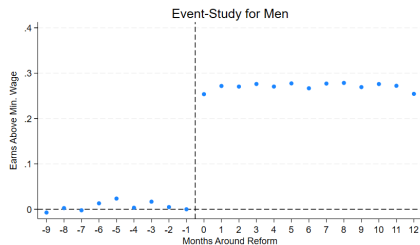
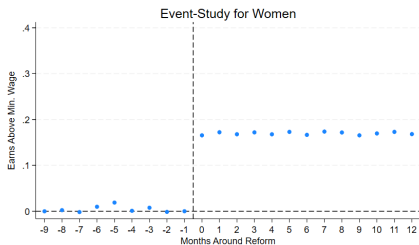


Figure: DiD Results

Notes: Controls for firm size, hours worked and contract type. Standard errors clustered at the individual level.

Diff-in-Diff Results: One (wo-)man Bands

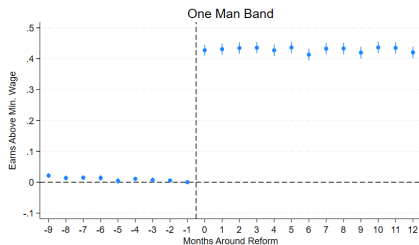
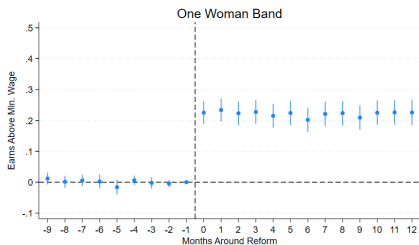


Figure: DiD Results: One-person firms

Notes: Controls for hours worked and contract type. Standard errors clustered at the individual level.

Differential Occupation Selection: Manual-Workers

- High variation/seasonality in hours worked \implies likely manual work

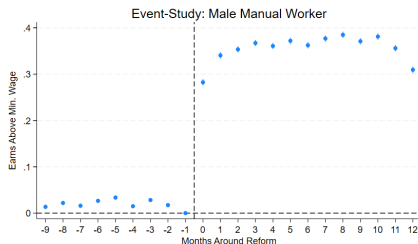
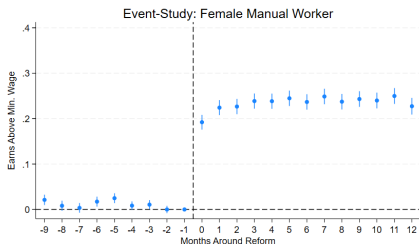


Figure: DiD Results: Manual Workers

Notes: Controls for firm size, hours worked and contract type. Standard errors clustered at the individual level.

Differential Occupation Selection: Office-Workers

- Low variation/seasonality in hours worked \implies likely office-based work

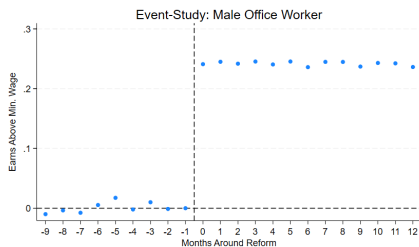
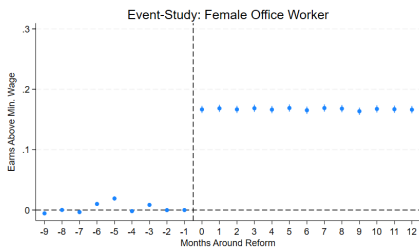


Figure: DiD Results: Office Workers

Notes: Controls for firm size, hours worked and contract type. Standard errors clustered at the individual level.

Differential Occupation Selection: Case Study of Building Project Management

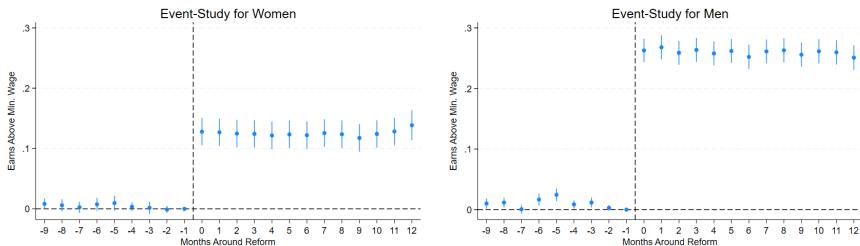


Figure: DiD Results: Project Management

Notes: Controls for firm size, hours worked and contract type. Standard errors clustered at the individual level.

Firm Selection & Composition

- Gender heterogeneity is explained by differential firm sorting
 - Gap disappears in female-dominated firms

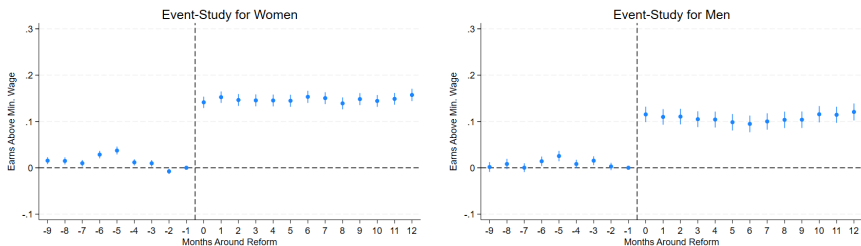


Figure: DiD Results: Female-Dominated Firms

Notes: Controls for firm size, hours worked and contract type. Standard errors clustered at the individual level.

Big Picture & Conclusions

- It seems that there is a gender gap in tax evasion
- As reported wages approach marginal product, wage gap shrinks
 - From 8% in favour of women to being out-earned by 7%
- Occupational segregation and differences in bargaining power seem to have little impact
- Selection into different kinds of firms seems to matter the most

Appendix 1

	(1)			(2)		
	Construction Sector			Non-Construction Sector		
	Median	Mean	S.D.	Median	Mean	S.D.
Age	42.00	42.45	11.21	42.00	42.15	11.98
Hours Worked	160.00	145.36	49.12	160.00	147.80	46.39
Number of Dependents	0.00	0.27	0.66	0.00	0.34	1.01
Firm Size	27.00	118.25	248.33	97.00	1252.53	3316.14
Female Share of Firm	0.23	0.31	0.24	0.70	0.66	0.23
Full-Time Contract	1.00	0.92	0.28	1.00	0.90	0.30
Bucharest	0.00	0.17	0.38	0.00	0.15	0.36
Observations	1576734			64263673		

Panel (a): Women

	(1)			(2)		
	Construction Sector			Non-Construction Sector		
	Median	Mean	S.D.	Median	Mean	S.D.
Age	43.00	42.88	11.74	43.00	42.84	12.79
Hours Worked	160.00	145.62	47.52	160.00	151.74	40.91
Number of Dependents	0.00	0.29	0.72	0.00	0.33	0.79
Firm Size	30.00	114.80	241.06	103.00	1416.81	3691.08
Female Share of Firm	0.09	0.11	0.11	0.30	0.34	0.24
Full-Time Contract	1.00	0.97	0.18	1.00	0.92	0.27
Bucharest	0.00	0.09	0.29	0.00	0.13	0.34
Observations	9809794			63315734		

Panel (b): Men