Are women more exposed to firm shocks?

Ramin Baghai, Rui Silva, and Margarida Soares

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Introduction

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- "job security" 91%
- "level of pay" 86%

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- "job security" 91%
- "level of pay" 86%

Similar pattern in other surveys. For example, Clark (2001) highlights this same pattern in the British Household Panel Survey of 1991.

Introduction

In this paper we focus on the degree to which firms provide workers with pay and employment stability.

- Insuring risk-averse workers against adverse shocks is one of firms' key roles in the economy (e.g., Knight (1921), Baily (1974) and Azariadis (1975)).
- *On average*, firms provide insurance to workers (Guiso, Pistaferri and Schivardi (2005); Ellul, Pagano and Schivardi (2018)).

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Question: Do firms provide the same level of wage and employment insurance to men and women? (And why?)

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Existing evidence suggests that women might be more risk averse than men:

- Evidence from experimental literature (e.g., Croson and Gneezy (2009) and Eckel and Grossman (2008))
- Survey evidence (e.g., Dohmen, Falk, Huffman, Schupp, Sunde, Wagner (2011))

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However, other forces may be at play, e.g. family constraints, preferences, discrimination, or societal pressures, that lead to women experiencing more unstable earnings.

Related Literature

Insurance within the firm:

- Guiso, Pistaferri and Schivardi (2005) focus on idiosyncratic shocks to the firm. Find that firm absorbs temporary shocks fully, and permanent shocks only partially.
- Ellul, Pagano and Schivardi (2018) find that there is substitutability in the provision of insurance between the government and family firms.

Gender differences in labor market outcomes:

- Gender wage gap: Adda, Dustman and Stevens (2017), Barbachon, Rathelot and Roulet (2021), Bertrand, Goldin and Katz (2010), Blau and Kahn (2017), Kleven, Landais and Søgaard (2019).
- Gender gap in displacement: Crossley, Jones and Kuhn (1994), Egan, Matvos and Seru (2020).

Data sources

We match two data sources in Sweden:

- Workers data: Longitudinal Database on Education, Income and Occupation (LISA) from Statistics Sweden between 1990-2011.
  - Detailed employee-employer matched information for the whole Swedish population 16 years old or older.
  - We focus on working-age population (non-retirees, 24 to 64 years old).

- Firm-level data: Serrano database between 1998-2011 for firm level data.
  - Includes public and privately held firms.
  - Focus on firms with 5+ workers.

Main variables

- *Wage*: the natural logarithm of the gross income paid by the main employer.
- *Dismissed*: a dummy variable that takes the value of 1 if the individual is dismissed this year, and 0 otherwise. We then multiply by 100.
- *Female*: a dummy variable that takes the value 1 if the worker is female, and 0 otherwise.
- *Shock*: a firm-year level variable of idiosyncratic shocks affecting the firm.

Idiosyncratic Shock

Our goal is to identify changes to firm's performance. Following Guiso, Pistaferri and Schivardi (2005), we model firm's performance process as:

$$y_{jt} = \rho y_{j,t-1} + f_j + l_{jt} + \delta_t + \epsilon_{jt}$$

y_{jt} is growth of sales for firm j in period t.

f_j, l_{jt} and δ_t are firm, industry and year fixed effects, respectively.

ϵ_{jt}, the idiosyncratic *Shock*, is the unexpected component in firm's sales.

The regression is estimated in first differences and using the two-step GMM approach of Arellano and Bond (1991).

Main Specification

$$Outcome_{ijt} = \alpha + \beta Female_{it} \times Shock_{jt} + \gamma_1 Female_{it} + \gamma_2 Shock_{jt} + \theta X + f_j + I_{jt} + L_{jt} + u_{ijt}$$

Outcome is wage or dismissal.

The vector of controls X includes age, tenure, years in labor market, log of years of education, lagged log wage for dismissal regressions

f_j, I_{jt} and L_{jt} are firm, industry-by-year, and labor market-by-year fixed effects.

The gender gap in firm wage insurance

The gender gap in firm wage insurance

	(1)	(2)	(3)	(4)
Shock	0.028***	0.021***	0.019***	0.020***
	(0.002)	(0.002)	(0.002)	(0.002)
Female		-0.329***	-0.321***	-0.284***
		(0.004)	(0.003)	(0.003)
Female ×		0.019***	0.020***	0.015***
Shock		(0.004)	(0.003)	(0.003)
Experience			0.019***	0.013***
			(0.000)	(0.000)
Tenure			0.005***	0.004***
			(0.000)	(0.000)
ln(education)			0.440***	0.220***
			(0.013)	(0.009)
age			0.006***	0.004***
			(0.000)	(0.000)
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes
Occupation FE	No	No	No	Yes
Adj. R^2	0.248	0.305	0.349	0.400
Observations	13,107,977	13,107,977	13,069,539	12,058,890

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The gender gap in firm employment insurance

	(1)	(2)	(3)	(4)
Shock	-1.547***	-1.382***	-1.575***	-1.569***
	(0.126)	(0.126)	(0.134)	(0.149)
Female		0.759***	0.105***	0.096***
		(0.027)	(0.022)	(0.019)
Female ×		-0.495***	-0.472***	-0.462***
Shock		(0.082)	(0.085)	(0.089)
Experience			-0.061***	-0.052***
			(0.004)	(0.003)
Tenure			-0.210***	-0.207***
			(0.005)	(0.005)
ln(education)			0.189***	0.420***
			(0.037)	(0.037)
age			0.008***	0.009***
			(0.001)	(0.001)
$\ln(\text{wage}_{t-1})$			-1.688***	-1.571***
			(0.029)	(0.029)
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes
Occupation FE	No	No	No	Yes
Adj. R^2	0.049	0.049	0.060	0.063
Observations	16,602,859	16,602,859	16,294,730	14,959,565

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Robustness

	Panel A: Wage insurance gap - Stayers				
	(1)	(2)	(3)	(4)	(5)
Female × Shock	**0.019*** (0.004)**	**0.010*** (0.003)**	**0.012*** (0.003)**	**0.014*** (0.003)**	**0.016*** (0.004)**
Adj. R^2	0.345	0.395	0.400	0.438	0.421
Observations	13,191,440	11,971,225	12,188,817	12,097,443	11,368,748
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm FE	-	Yes	Yes	-	-
Labor mkt × Year FE	Yes	Yes	Yes	Yes	Yes
Firm × Year FE	Yes	-	-	-	-
Occupation × Year	-	-	Yes	-	-
Firm × Occupation	-	-	-	Yes	-
Firm × Occupation × Year	-	-	-	-	Yes
Hierarchy × Year	-	Yes	-	-	-

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Occupation × Year	-	-	Yes	-	-
Firm × Occupation	-	-	-	Yes	-
Firm × Occupation × Year	-	-	-	-	**Yes**
Hierarchy × Year	-	Yes	-	-	-

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	Panel B: Employment insurance gap				
	(1)	(2)	(3)	(4)	(5)
Female × Shock	**-0.458*** **	**-0.500*** **	**-0.462*** **	**-0.370*** **	**-0.249*** **
	(0.058)	**(0.090)**	**(0.089)**	**(0.091)**	**(0.057)**
Adj. R^2	0.102	0.060	0.063	0.084	0.127
Observations	16,289,092	14,645,810	14,959,565	14,830,461	13,994,718
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm FE	-	Yes	Yes	-	-
Labor mkt × Year FE	Yes	Yes	Yes	Yes	Yes
Firm × Year FE	Yes	-	-	-	-
Occupation × Year	-	-	Yes	-	-
Firm × Occupation	-	-	-	Yes	-
Firm × Occupation × Year	-	-	-	-	Yes
Hierarchy × Year	-	Yes	-	-	-

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Firm × Year FE	Yes	-	-	-	-
Occupation × Year	-	-	Yes	-	-
Firm × Occupation	-	-	-	Yes	-
Firm × Occupation × Year	-	-	-	-	**Yes**
Hierarchy × Year	-	Yes	-	-	-

When is the difference in firm insurance larger?

To try to understand the mechanism that drives the results, we test whether some characteristics of firms and workers amplify or mitigate the gender gap in insurance.

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- Household production
- Managerial practices

Mechanism - Home production

	Panel A: All kids			
	Wage insurance		Employment insurance	
	None	Has kids	None	Has kids
Female × Shock	**0.020*** (0.003)**	**0.024*** (0.004)**	**-0.171 (0.105)**	**-0.738*** (0.094)**
Adj. R^2	0.351	0.383	0.066	0.066
Observations	6,137,385	6,921,962	7,717,146	8,569,971
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes

Mechanism - Home production

	Panel A: All kids			
	Wage insurance		Employment insurance	
	None	Has kids	None	Has kids
Female × *Shock*	0.020***	0.024***	-0.171	-0.738***
	(0.003)	(0.004)	(0.105)	(0.094)
Adj. R^2	0.351	0.383	0.066	0.066
Observations	6,137,385	6,921,962	7,717,146	8,569,971
	Panel B: Small kids			
	Wage insurance		Employment insurance	
	No small kids	Has small kids	No small kids	Has small kids
Female × Shock	**0.023*** (0.003)**	**0.027*** (0.005)**	**-0.268*** (0.091)**	**-0.927*** (0.110)**
Adj. R^2	0.369	0.393	0.063	0.071
Observations	9,295,259	3,763,773	11,511,610	4,774,481
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes

Mechanism - Managerial practices

	Panel A: Firm size			
	Wage insurance		Employment insurance	
	Below median	Above median	Below median	Above median
Female × Shock	**0.028*** (0.003)**	**0.015*** (0.006)**	**-0.897*** (0.124)**	**-0.191** (0.085)**
Adj. R^2	0.357	0.335	0.073	0.030
Observations	6,068,000	7,138,296	7,762,530	8,716,144
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes

Mechanism - Managerial practices

	Panel A: Firm size			
	Wage insurance		Employment insurance	
	Below median	Above median	Below median	Above median
Female × *Shock*	0.028***	0.015***	-0.897***	-0.191**
	(0.003)	(0.006)	(0.124)	(0.085)
Adj. R^2	0.357	0.335	0.073	0.030
Observations	6,068,000	7,138,296	7,762,530	8,716,144
	Panel B: Share of female managers			
	Wage insurance		Employment insurance	
	None	Positive share	None	Positive share
Female × Shock	**0.019*** (0.004)**	**0.018*** (0.005)**	**-0.842*** (0.115)**	**-0.408*** (0.090)**
Adj. R^2	0.365	0.337	0.079	0.048
Observations	5,541,632	7,664,182	6,968,347	9,510,149
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes

What does not explain the gap in insurance?

- Insurance within the family
- Labor regulation

Insurance within the family

	Panel A: Share of household income for married adults			
	Wage insurance		Employment insurance	
	<50% of inc.	>50% of inc.	<50% of inc.	>50% of inc.
Female × *Shock*	-0.020***	0.030***	0.169	-0.549***
	(0.006)	(0.005)	(0.145)	(0.097)
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes
Adj. R^2	0.212	0.465	0.074	0.064
Observations	1,845,329	4,279,049	2,285,554	5,098,476
	Panel B: Marital status			
	Wage insurance		Employment insurance	
	Single	Married	Single	Married
Female × *Shock*	0.021***	0.018***	-0.400***	-0.583***
	(0.003)	(0.004)	(0.106)	(0.082)
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes
Adj. R^2	0.322	0.382	0.066	0.062
Observations	6,918,242	6,277,995	8,890,432	7,580,338

Labor regulation

	Panel A: Tenure		Panel B: LIFO firms	
	Low	High	No LIFO	LIFO
Female	0.632***	0.002	0.364***	0.334***
	(0.039)	(0.022)	(0.051)	(0.060)
Shock	-1.704***	-1.670***	-2.366***	-2.152***
	(0.203)	(0.097)	(0.166)	(0.182)
Female ×	-0.593***	-0.515***	-1.446***	-1.322***
Shock	(0.109)	(0.109)	(0.237)	(0.234)
Industry × Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Labor mkt × Year FE	Yes	Yes	Yes	Yes
Adj. R^2	0.070	0.050	0.112	0.103
Observations	5,912,200	10,558,850	1,042,503	757,720

Conclusion

- Wage and employment stability are important for workers.
- We find that women enjoy less wage and employment insurance than men.
- Larger differences for workers with children and in smaller firms with fewer female managers.

Thank you!

Summary Statistics

	Panel A: Firm level variables		
	Obs	Mean	Stand. Dev.
ln(wage bill)	448,941	8.404	1.062
ln(employment)	448,941	2.990	0.993
Interest Coverage	448,941	107.157	360.100
Profitability	448,941	0.125	0.168
Shock	448,941	0.214	0.268
	Panel B: Employee level variables		
	Obs	Mean	Stand. Dev.
Wage	28,121,661	7.592	0.896
Dismissed	25,971,563	5.410	22.622
Female	28,121,661	0.350	0.477
Experience	28,121,661	13.328	4.609
Tenure	28,121,661	5.798	4.790
ln(education)	27,976,738	2.436	0.227
Age	28,121,661	41.685	11.100