

# **Employment and Wage Insurance within Firms: Worldwide Evidence**



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# Motivation

2

- The idea that **firms provide insurance to workers** goes back to Knight (1921): “the confident and venturesome assume the risk and insure the doubtful and timid by guaranteeing to the latter a specified income”
- Formalized by the **implicit contract** model of Baily (1974) and Azariadis (1975): **risk-neutral entrepreneurs provide insurance to risk-averse workers** by insulating their salaries from adverse shocks to production
- Entrepreneurs’ ability to provide insurance to workers depends crucially on their superior **access to financial markets**: they can diversify idiosyncratic risk to insure workers (Berk and Walden, 2013)
- **Our question: “how much insurance do firms give to their employees?”** To answer, we look at factors that can affect the **supply of insurance by firms** and the **demand for insurance by workers**

# Supply side – 1: commitment ability

3

- Implicit contracts must be self-enforcing: firm must be willing to stick to its pledge when hit by adverse shocks
  - **Supply-side** determinant: **firm's ability to commit**
  - **Family firms** more able to commit than **non-family** ones:
    - long-term ownership and control: “dynasty's name” is at stake
    - immunity to hostile takeovers: no raider can breach contract
- ⇒ Unless threatened by financial distress, family firms should
- offer **more stable employment and wages** to their employees
  - earn an “insurance premium” = **pay lower wages**, other things equal

# Supply side – 2: efficient renegotiation

4

- Family firms also feature more “paternalistic”, less confrontational labor relations:
    - long-term relationship  $\Rightarrow$  more trustworthy when reporting bad news to workers
  - So they **can persuade employees** to take wage cuts in the presence of adverse shocks and avoid inefficient firings
- $\Rightarrow$  Offer **more stable employment** but **less stable** wages:
- “During the recession I offered my employees a deal: no firings in exchange of high effort and a salary freeze”* (Egidio Maschio, owner of Maschio Gaspardo, world leader in agricultural machinery)

# Demand side: insurance by state or market

5

- Our demand shift variables are country-level variables: they are based on cross-country and time-series variation in
  - **social security institutions**
  - **labor market tightness**
- These should reduce workers' demand for insurance from their employers: **substitution** between (i) provision of insurance by society (government or market) and (ii) its provision by firms

# Previous literature

6

- Most previous evidence is based on French data. In France, listed family firms provide more employment insurance to their employees than non-family ones:
  - in heir-managed firms' employment is less sensitive to industry sales shocks; they pay lower average wages and earn larger profits (Sraer and Thesmar, 2007, Bassanini et al. 2011)
  - family-promoted CEOs are associated with lower job turnover and less wage renegotiation (Bach and Serrano-Velarde, 2010)
  - family firms are less likely to face strikes and to have unionized workers, have fewer layoffs, sanctions and disputes ending in court (Müller and Philippon, 2007; Waxin, 2009)

# Anecdotal evidence

7

- In the early 20<sup>th</sup> century at Endicott Johnson, shoe manufacturer in NY, new hires received a booklet stating “*You have now joined the Happy Family*”. To maintain the company’s welfare program during the Great Depression, the firm’s patriarch G. F. Johnson cut dividends, angering other stockholders (Mueller and Philippon, 2011)
- “*The family business in Warroad, Minnesota [...] didn’t lay off a single one of their four thousand employees during this recession, even when their competitors shut down dozens of plants, even when it meant the owners gave up some perks and pay*” (Obama, 2012)
- “*In 1976 I faced Gianni Agnelli with a drastic choice: here at FIAT we must lay off 25,000 employees, I told him. He thought about it for two days, then replied: it cannot be done. That reply contained the moral heritage of his grandfather*” (Carlo De Benedetti, former CEO of FIAT, 2013)

# Empirical methodology

8

- Investigate whether firm-level employment and wages respond to sales shocks **differently**
  - in **family** and **non-family** firms
  - in countries with **high** vs. **low** public employment security
- **DID** strategy: do **family** firms give **less insurance** where there is **more employment security**?
- Distinguish between **different types of shocks** to sales:
  - **industry-** and **firm-level**
  - **negative** and **positive**
  - **transitory** and **persistent**
- Distinguish firms **far from distress** from those **close to distress**



# Firm-level international data

9

- Financial and accounting data from 41 countries in 1988-2012 from Worldscope and Osiris for non-US firms, Compustat for US firms
- Use firms with **employment data** for at least 5 years: this screen reduces the sample to 7,710 firms , i.e. 115,827 firm-year observations
- **Wage data** is only available for 3,290 firms
- **Ownership data** from same sources used by Ellul, Pagano and Panunzi (2010) identifying a family as the firm's ultimate blockholder
- Dependent variable in the employment insurance regressions: **log change of total employment**
- Two different dependent variables in the wage regressions :
  - **log change of real wage** to test for wage insurance
  - **log of average wage** to test whether insurance is priced by wages

# Country-level data

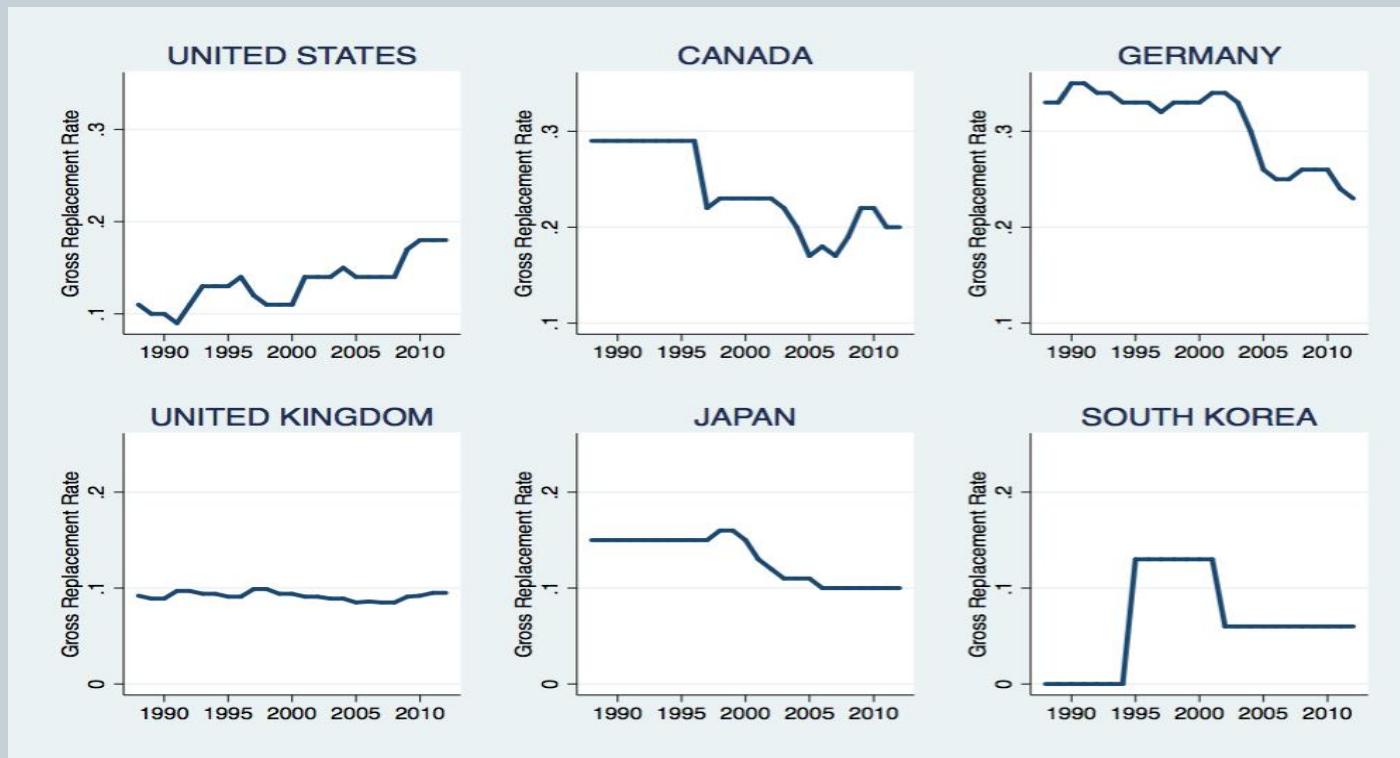
10

- To measure country-level employment insurance provided by social security system (“unemployment security”), we rely on the **gross replacement rate**:
  - ratio of unemployment insurance benefits received by a worker in the first 2 years of unemployment to his/her last gross wage
  - measured yearly by identifying regulatory changes in various sources: ILO, OECD and national agencies, as in Aleksynska and Schindler (2011), suitably extended  $\Rightarrow$  time-varying!
- Alternative measure capturing only persistent changes in public insurance (“structural unemployment security”):
  - we use it only for robustness checks

# Social security systems

11

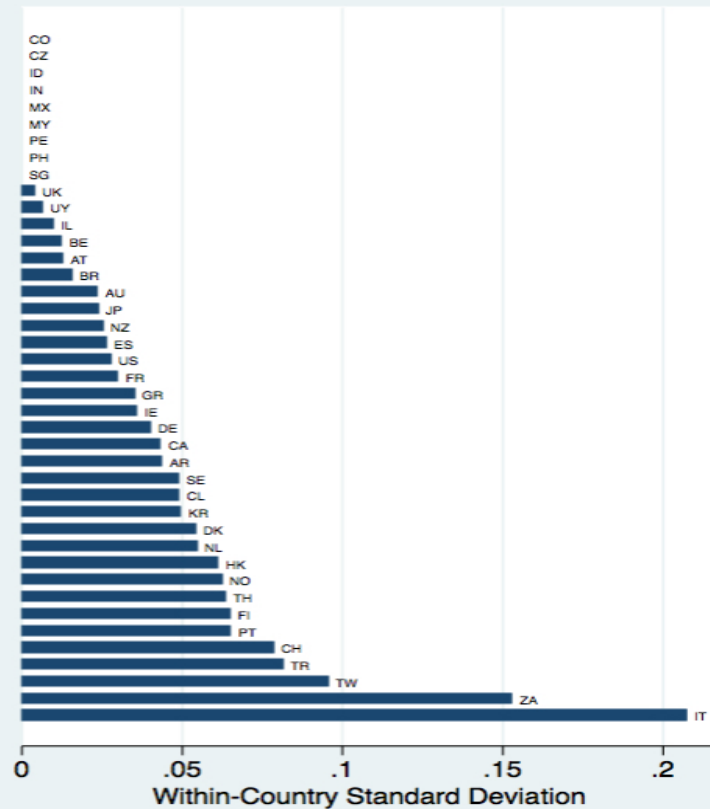
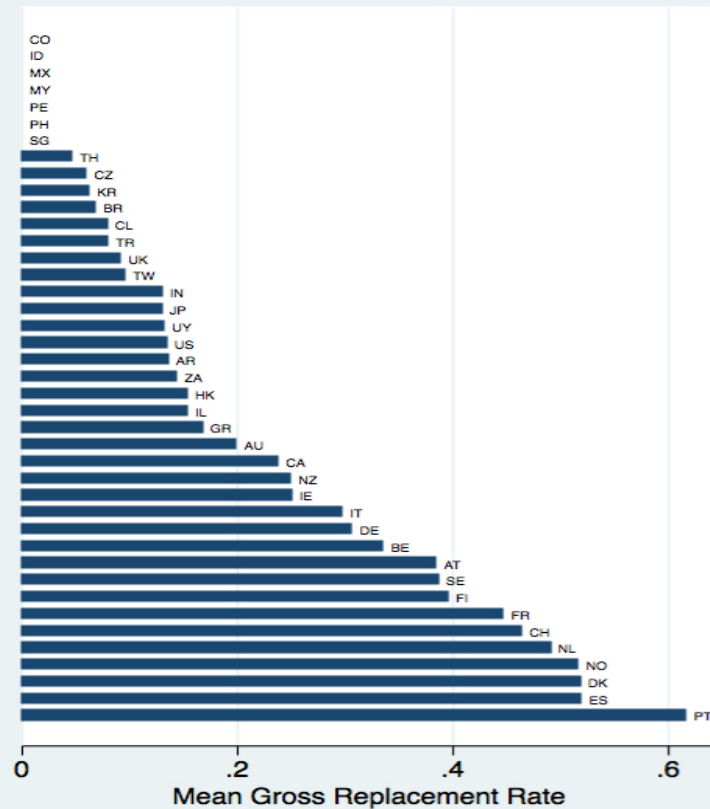
Gross replacement rates differ significantly across countries and over time



# Social security systems

12

Gross replacement rates differ significantly across countries and over time



# Employment regression

13

- The specification of the employment growth regression is:

$$n_{it} = \beta_1 \varepsilon_{it} + \beta_2 \varepsilon_{it} F_{it} + \beta_3 \varepsilon_{it} S_{ct} + \beta_4 \varepsilon_{it} F_{it} S_{ct} + \beta_5 F_{it} + \beta_6 S_{ct} + \beta_7 F_{it} S_{ct} + \gamma' X_{it-1} + \mu_{cj} + \mu_t + u_{it},$$

- $n_{it}$  = growth rate in the employment of firm  $i$  in year  $t$
- $\varepsilon_{it}$  = “shock”: either the unexpected change in the sales of firm  $i$  or the change in the sales industry  $j$  (ex-firm  $i$ ) in year  $t$
- $F_{it}$  = family-firm dummy: 1 if a family blockholder has at least 25% of cash flow rights and is present in the firm’s management, 0 otherwise
- $S_{ct}$  = replacement rate (measure of the effectiveness of the public employment insurance system) in country  $c$  and year  $t$
- $X_{it}$  = vector of company-specific variables
- $\mu_{cj}$  = country-industry effect
- $\mu_t$  = year effect, in some specifications replaced by  $\mu_{ct}$  = country-year

# Employment insurance: industry-level shocks

14

	(1)	(2)	(3)
<b>Δ Industry Sales</b>	<b>0.185***</b> <b>(3.70)</b>	<b>0.140***</b> <b>(3.10)</b>	<b>0.165***</b> <b>(3.00)</b>
Family Firms	0.004 (1.28)	0.003 (1.06)	-
<b>Δ Industry Sales × Family Firms</b>	<b>-0.177***</b> <b>(-3.87)</b>	<b>-0.124***</b> <b>(-2.51)</b>	<b>-0.151***</b> <b>(-3.02)</b>
Δ Industry Sales × Unemployment Security	0.0324 (1.52)	0.037 (1.11)	0.044 (1.24)
<b>Δ Industry Sales × Family Firms × Unemployment Security</b>	<b>0.140***</b> <b>(3.22)</b>	<b>0.099**</b> <b>(2.48)</b>	<b>0.114***</b> <b>(2.38)</b>
Family Firms × Unemployment Security	0.009 (1.27)	-0.001 (-0.39)	-0.003 (-0.61)
Unemployment Security	0.017 (1.46)	-	-0.009 (-0.98)
Control Variables	Yes	Yes	Yes
Fixed Effects	Country-Industry	Country-Time	Firm
Year Dummies	Yes	Yes	Yes
R <sup>2</sup>	0.22	0.27	0.25
Number of observations	115,827	115,827	115,827

**Note:** interactions with market tightness not significant when included together with unempl. security

# Industry- vs. firm-level shocks

15

- Impact of industry-level shocks on employment depends on:
  1. how exposed the firm is to industry shocks
  2. how much of the shock is transmitted to firm-level employment
- Indeed, sales in family firms are less correlated to industry sales
- To focus on transmission, we **also** consider **idiosyncratic firm-level shocks**: residuals from a first-stage predictive equation for the growth rate of sales on its lagged value, firm-level control variables, industry effects and country-time effects.

# Employment insurance: firm-level shocks

16

	(1)	(2)	(3)
<b>Idiosyncratic Shock</b>	<b>0.281***</b> <b>(3.70)</b>	<b>0.2580***</b> <b>(3.27)</b>	<b>0.301***</b> <b>(3.25)</b>
Family Firms	0.007* (1.71)	0.0051 (1.57)	-
<b>Idiosyncratic Shock × Family Firms</b>	<b>-0.271***</b> <b>(-3.51)</b>	<b>-0.213**</b> <b>(-2.39)</b>	<b>-0.261***</b> <b>(-2.94)</b>
Idiosyncratic Shock × Unemployment Security	0.083** (2.11)	0.061* (1.80)	0.070** (2.05)
<b>Idiosyncratic Shock × Family Firms × Unemployment Security</b>	<b>0.217***</b> <b>(3.51)</b>	<b>0.128***</b> <b>(1.74)</b>	<b>0.192***</b> <b>(2.52)</b>
Family Firms × Unemployment Security	0.016* (1.72)	-0.002 (-0.81)	
Unemployment Security	0.0202 (1.91)	-	-0.016* (1.80)
Control Variables	Yes	Yes	Yes
Fixed Effects	Country-Industry	Country-Time	Firm
Year Dummies	Yes	Yes	Yes
R <sup>2</sup>	0.16	0.24	0.26
Number of observations	115,827	115,827	115,827

**Note:** interactions with market tightness not significant when included together with unempl. security



# Employment insurance: matched sample

17

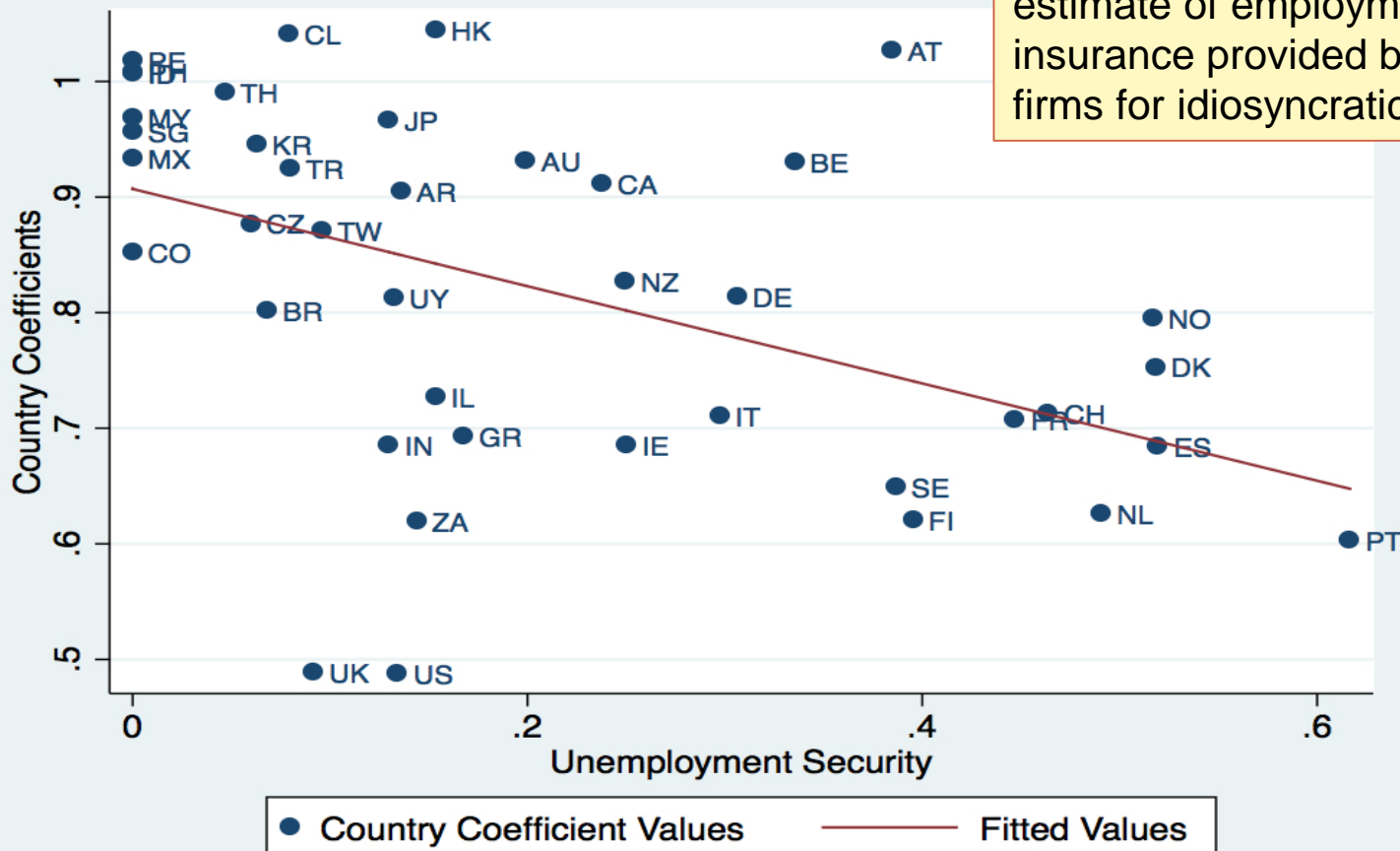
	(Industry)	(Idiosyncratic)	(Idiosyncratic)
<b>Shock</b>	<b>0.179***</b> <b>(2.91)</b>	<b>0.308***</b> <b>(3.21)</b>	<b>0.338***</b> <b>(3.89)</b>
Family Firms	0.004* (1.09)	0.007 (0.95)	-
<b>Idiosyncratic Shock × Family Firms</b>	<b>-0.161***</b> <b>(-2.95)</b>	<b>-0.275**</b> <b>(-3.26)</b>	<b>-0.308***</b> <b>(-3.01)</b>
Idiosyncratic Shock × Unemployment Security	0.041** (1.72)	0.040 (1.47)	0.032 (1.32)
<b>Idiosyncratic Shock × Family Firms × Unemployment Security</b>	<b>0.152***</b> <b>(3.24)</b>	<b>0.261***</b> <b>(3.19)</b>	<b>0.242***</b> <b>(2.81)</b>
Family Firms × Unemployment Security	0.011 (1.31)	0.018 (1.50)	0.005 (0.92)
Unemployment Security	0.019 (1.49)	0.032* (1.71)	-0.018 (1.01)
Control Variables	Yes	Yes	Yes
Fixed Effects	Country-Industry	Country-Time	Firm
Year Dummies	Yes	Yes	Yes
R <sup>2</sup>	0.32	0.20	0.29
Number of observations	86,511	86,511	86,511

**Note:** interactions with market tightness not significant when included together with unempl. security

# Employment insurance provided by family firms and social security

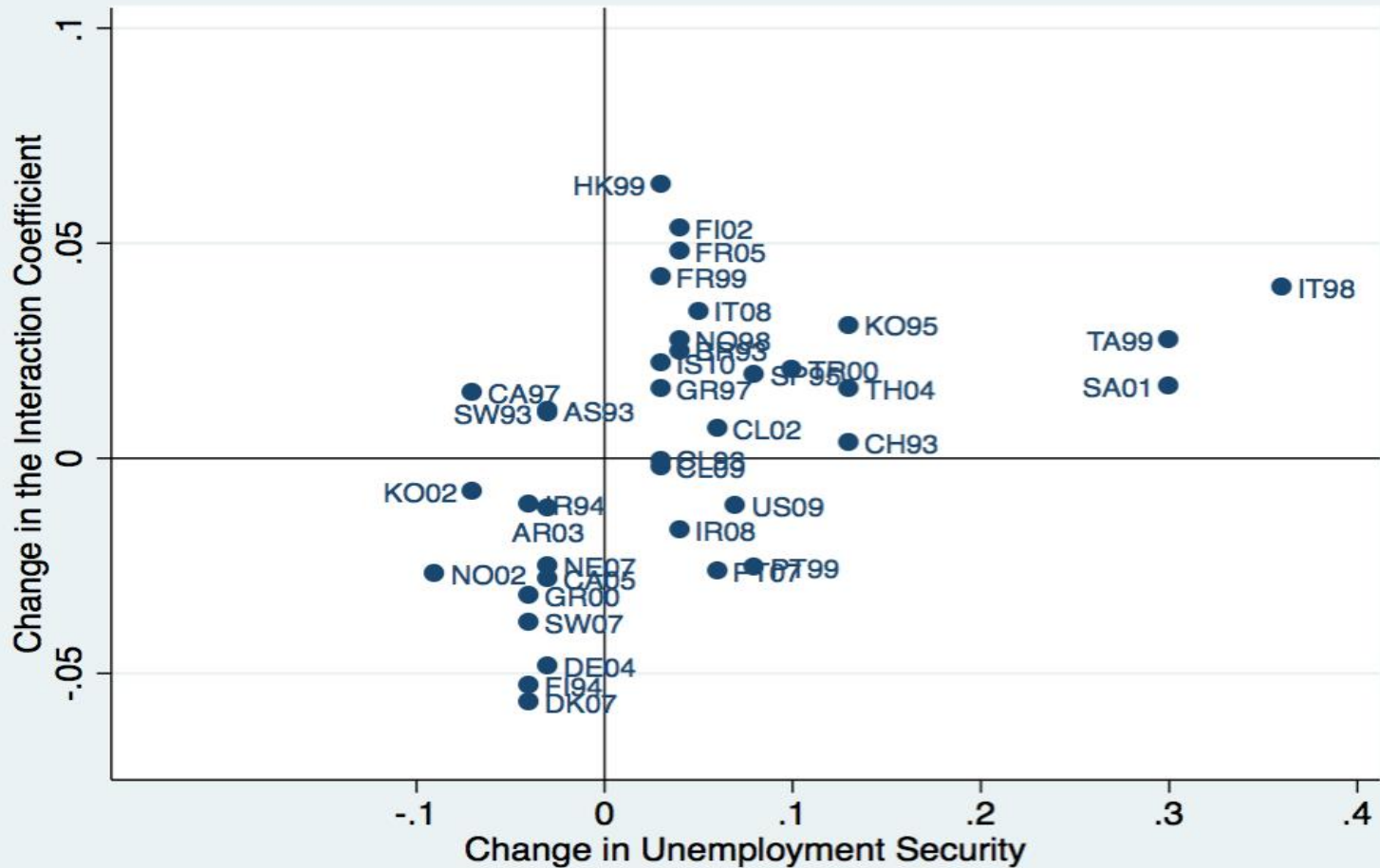
18

Vertical axis: country-level estimate of employment insurance provided by family firms for idiosyncratic shocks



# Change in employment insurance following a major change in social security

19



# Breakdowns of shocks and firms

- Breakdown of shocks **by sign**: firms should insure employees mainly against **negative shocks** to sales
- Breakdown of shocks **by persistence**: firms should insure workers more against **transitory shocks** than persistent ones (Gamber, 1988)
- Breakdown of firms **by access to funding**: **non-distressed firms** should be able to offer more insurance to workers than distressed ones
- Moreover, the **difference between family and non-family firms** in insurance provision should emerge mainly for
  - negative shocks
  - transitory shocks
  - non-distressed firms

# Positive vs. negative, temporary vs. persistent shocks

21

	Negative shock, idiosyncratic	Positive shock, idiosyncratic	Transitory shock, firm level	Persistent shock, firm level
<b>Shock</b>	<b>0.310***</b> <b>(2.99)</b>	<b>0.165**</b> <b>(2.10)</b>	<b>0.186***</b> <b>(3.11)</b>	<b>0.267***</b> <b>(3.07)</b>
Family Firms	0.003 (0.82)	0.002 (0.67)	0.004 (0.97)	0.005 (1.05)
<b>Shock × Family Firms</b>	<b>-0.298***</b> <b>(-2.73)</b>	<b>-0.061</b> <b>(-1.59)</b>	<b>-0.205***</b> <b>(-2.96)</b>	<b>-0.098</b> <b>(-1.57)</b>
Shock × Unemployment Security	0.015 (1.37)	0.010 (0.80)	0.041 (1.12)	0.032 (1.27)
<b>Shock × Family Firms × Unemployment Security</b>	<b>0.1361***</b> <b>(2.84)</b>	<b>0.080*</b> <b>(1.87)</b>	<b>0.122**</b> <b>(2.50)</b>	<b>0.026</b> <b>(1.03)</b>
Family Firms × Unemployment Security	0.008 (1.31)	0.005 (0.84)	0.0095 (1.15)	0.0107 (1.20)
Unemployment Security	0.016 (1.38)	0.011 (0.92)	0.018* (1.70)	0.018 (1.49)
Control Variables	Yes	Yes	Yes	Yes
Fixed Effects	Country-Industry	Country- Industry	Country-Industry- Year	Country- Industry-Year
Year Dummies	Yes	Yes	No	No
R <sup>2</sup>	0.16	0.11	-	-
Number of observations	30,436	85,391	105,725	105,725

# Distressed firms vs. non-distressed firms

22

	Top z-score quintile, industry shock	Bottom z-score quintile, industry shock	Top z-score quintile, firm- level shock	Bottom z-score quintile, firm- level shock
<b>Shock</b>	<b>0.1583***</b> <b>(2.71)</b>	<b>0.1857***</b> <b>(3.99)</b>	<b>0.2125***</b> <b>(3.93)</b>	<b>0.3009***</b> <b>(5.26)</b>
Family Firms	0.0030 (0.97)	0.0043 (1.06)	-0.0015 (-0.39)	0.0002 (0.20)
<b>Shock × Family Firms</b>	<b>-0.1590***</b> <b>(-3.77)</b>	<b>-0.0411</b> <b>(-1.56)</b>	<b>-0.2418***</b> <b>(-4.04)</b>	<b>-0.0311</b> <b>(-0.74)</b>
Shock × Unemployment Security	0.0216 (1.37)	0.0309* (1.75)	0.0329* (1.85)	0.0524* (1.90)
<b>Shock × Family Firms × Unemployment Security</b>	<b>0.909***</b> <b>(2.92)</b>	<b>0.0422</b> <b>(1.58)</b>	<b>0.1380***</b> <b>(3.27)</b>	<b>-0.0215</b> <b>(-1.11)</b>
Family Firms × Unemployment Security	0.0059 (1.07)	0.0041 (0.78)	0.0067 (0.69)	0.0065 (0.87)
Unemployment Security	0.0130 (1.26)	0.092 (1.03)	0.0211 (1.19)	0.0191 (1.21)
Control Variables	Yes	Yes	Yes	Yes
Fixed Effects	Country-Industry	Country-Industry	Country-Industry	Country-Industry
Year Dummies	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.15	0.09	0.21	0.06
Number of observations	25,489	22,211	24,727	21,562

# Wage growth regression

23

- The specification of the wage growth regression is:

$$w_{it} = \delta_1 \varepsilon_{it} + \delta_2 \varepsilon_{it} F_{it} + \delta_3 \varepsilon_{it} S_{ct} + \delta_4 \varepsilon_{it} F_{it} S_{ct} + \delta_5 F_{it} + \delta_6 S_{ct} + \delta_7 F_{it} S_{ct} \\ + \phi' X_{it-1} + \mu_{cj} + \mu_t + u_{it},$$

- $w_{it}$  = growth rate of the average real wage of firm  $i$  in year  $t$
- $\varepsilon_{it}$  = “shock”: either the unexpected change in the sales of firm  $i$  or the change in the sales industry  $j$  (ex-firm  $i$ ) in year  $t$
- $F_{it}$  = family-firm dummy variable: 1 for family firms, 0 otherwise
- $S_{ct}$  = replacement rate (measure of the effectiveness of the public employment insurance system) in country  $c$  and year  $t$
- $X_{it}$  = vector of company-specific variables
- $\mu_{cj}$  = country-industry effect
- $\mu_t$  = year effect

# Wage insurance: industry-level shocks

24

	(1)	(2)	(3)
<b>Δ Industry Sales</b>	<b>0.054***</b> <b>(2.89)</b>	<b>0.052***</b> <b>(2.87)</b>	<b>0.057***</b> <b>(2.95)</b>
Family Firms	-0.010 (-1.58)	-0.006 (-1.39)	-
<b>Δ Industry Sales × Family Firms</b>	<b>0.042***</b> <b>(2.75)</b>	<b>0.033**</b> <b>(2.24)</b>	<b>0.027**</b> <b>(2.51)</b>
Δ Industry Sales × Unemployment Security		-0.020* (1.84)	-0.022 (-1.45)
<b>Δ Industry Sales × Family Firms × Unemployment Security</b>		<b>0.0291*</b> <b>(1.80)</b>	<b>0.0115</b> <b>(1.22)</b>
Family Firms × Unemployment Security		-0.0072 (-0.91)	-0.0061 (-0.62)
Unemployment Security	0.0114 (1.02)	0.0102 (0.92)	0.0098 (1.01)
Control Variables	Yes	Yes	Yes
Fixed Effects	Country-Industry	Country-Industry	Firm
Year Dummies	Yes	Yes	Yes
R <sup>2</sup>	0.09	0.09	0.12
Number of observations	40,280	40,280	40,280



# Price of employment insurance in family firms

25

	(1)	(2)	(3)
<b>Family Firms</b>	<b>-0.094***</b> <b>(-3.25)</b>	<b>-0.068**</b> <b>(-2.54)</b>	-
<b>Unemployment Security × Family Firms</b>	<b>0.005**</b> <b>(2.53)</b>	<b>0.005**</b> <b>(2.29)</b>	<b>0.006**</b> <b>(2.49)</b>
Unemployment Security	0.009 (0.91)	0.008 (0.91)	0.012 (1.24)
Firm Control Variables	No	Yes	Yes
Fixed Effects	Country- Industry	Country- Industry	Firm
Year Dummies	Yes	Yes	Yes
R <sup>2</sup>	0.09	0.11	0.16
Number of observations	40,280	40,280	40,280

# Conclusions

26

- **Family** firms provide more protection than non-family firms against **employment** shocks: the difference is
  - present for **negative** shocks, not for positive ones
  - stronger for **transitory** shocks than permanent ones
  - present for **firms far from distress**, not for distressed ones
- They do so **more** in countries with **low employment security**
- **Family** firms offer **less wage insurance** than non-family firms
- Insurance is **priced** in wages, and the “insurance premium” earned by family firms is significantly larger in countries with **low employment security**