

VISITINPS

un anno dopo

formazione, ricerca e innovazione

“The transitional labour market consequences of a pension reform”

Giulia Bovini - LSE, Bank of Italy*
 Matteo Paradisi – Harvard

**The views expressed are those of the authors and do not involve the responsibility of the Bank*

Motivation

- ▶ Due to rapid population ageing, virtually all OECD countries have implemented pension reforms to lengthen working lives
- ▶ A recurrent feature consists in tightening age and contribution *requirements* to claim pension benefits
- ▶ In Italy, the Fornero reform is the most recent
- ▶ **Large long-run benefits:** sustainability of social-security system, greater inter-generational fairness
- ▶ **Short-run costs?** Potential transitional costs due to firm's responses

Overview of the Paper

- ▶ The Fornero reform causes a shock to the retention rate of workers close to retirement under previous rules
- ▶ The extent to which firms respond depends on the substitutability between older workers and younger co-workers
- ▶ Our evidence suggests that there is a substitutability pattern: there are adjustments on middle-aged and young workers (layoffs, renewals of fixed-term contracts, hiring)
- ▶ However, the costs for co-workers are not large and are very concentrated
- ▶ Social insurance programs help mitigating most of the earnings cost

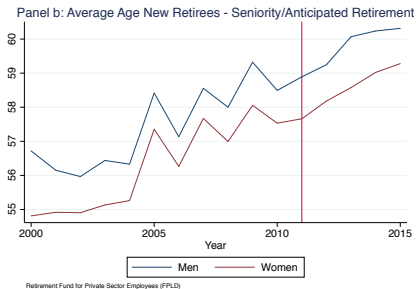
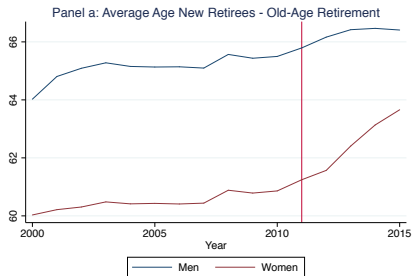
Outline of the talk

- ▶ Setting: the *Fornero* pension reform
- ▶ Data: VisitINPS Program
- ▶ Our measure of the reform shock to firms' retention rate
- ▶ Findings
- ▶ Conclusions

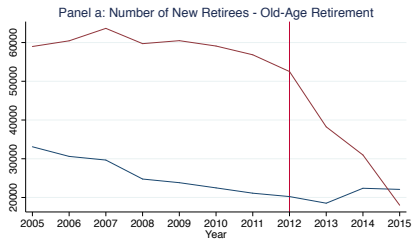
Setting: The 2011 Fornero Pension Reform

- ▶ Part of the “*Save Italy*” package of reforms enacted in December 2011, at the height of the sovereign debt crisis (Art. 24, d.l. 201/2011)
- ▶ Very short decision and implementation lags → rule out anticipation effects
- ▶ Provisions for private sector workers:
 - ▶ Deep revision of **seniority** pensions, much heavier contribution requirement [Details](#)
 - ▶ Tighter age requirement for **old-age** pensions, larger change for women [Details](#)
- ▶ New rules apply to all workers who do not qualify for retirement under old rules by 31/12/11
- ▶ Following the reform, the average age at retirement increased and the number of new retirees declined

Old-Age and seniority pensions: age at retirement

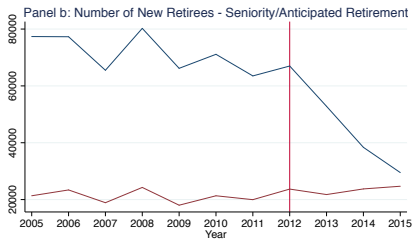


Old-age and seniority pensions: number of new retirees



Retirement Fund for Private Sector Employees (FPLD)
Moving Average - 2 Lags

Men Women



Retirement Fund for Private Sector Employees (FPLD)
Moving Average - 2 Lags

Men Women

Data

The integration of multiple administrative datasets is fundamental to carry out this project. We exploit two main sources:

1. **Matched employer-employee records** for the universe of private-sector firms with at least one employee (1983-2015):
 - ▶ 93% of total private employees
 - ▶ Monthly info on wage, type of contract, motivation for start and end of contract spell, etc.
2. Full **contribution histories** for all workers ever employed in the period 2009-2015 in firms which have 3-200 employees in q1-2009
 - ▶ Correctly measure the change in workers' residual working life induced by the reform
 - ▶ Track workers' earnings inside and outside the firm (self-employment, public employment, non-work subsidies)

Measuring the Reform Shock

- ▶ The reform induces a change in the retention rate of all incumbent workers at different points in time
- ▶ Focus on *short-run* firm responses → build a treatment that captures the change in the retention rate of *old employees who were close to retire under pre-reform rules* (**affected** workers)
- ▶ **Main challenge:** the *share of affected workers* in the firm is endogenous, i.e. it is related to the ex-ante demographic composition of firm's workforce → firms with a different demographic composition can be different in many other ways

Measuring the Reform Shock

Step 1: Worker-level change in residual working life

- ▶ Shift in individual retirement date depends on age, years of contributions and gender
- ▶ We compute this shift for every worker → this is the change in residual working life absent any action from workers and firms
- ▶ 2 assumptions about post-2011 workers' behavior:
 1. Workers accrue full contributions (i.e. 52 weeks per year) in the post-reform period
 2. Workers retire as soon as they become eligible for either old-age or seniority pension

Measuring the Reform Shock

Step 2: Firm-level treatment

- ▶ We define as **affected** those full-time employees eligible to retire within 3 years under old rules
- ▶ We define the reform shock as the average shift in retirement date (in years) per **affected** worker
- ▶ Equivalent interpretation: change to retention rate of affected workers measured in years
- ▶ We only consider firms with at least one affected worker (similar effects for the universe of firms)
- ▶ **Important:** The variability of the shock across firms depends on the composition of affected workforce only, not on the composition of the entire workforce

Remarks on the Reform Shock

- ▶ Our measure of the reform shock displays no correlation with firm's characteristics before the reform:
 - ▶ Share of < 35 y.o., share of 35 – 55 y.o., share of > 55 y.o.
 - ▶ Firm size, sector and age
 - ▶ Share of: full-time and part-time; permanent and temporary contracts; blue-collar, white-collar and managers
- ▶ Firm's responses depend on size and share of **affected workers**: we have a procedure (IV) to re-scale our results and interpret them as the effect of an extra 1% in the share of retained workers

Estimation

- ▶ We estimate a dynamic **difference-in-difference** model
 - ▶ Continuous treatment
 - ▶ Multiple periods pre- and post-reform (2009-2015)
 - ▶ Firm and year fixed effects
- ▶ We compare firms treated to a different extent, pre and post reform
- ▶ Assumption: firms treated to a different extent were on **parallel** trends in the pre-reform period
 - ▶ If this is true, pre-reform coefficients are not statistically significant

Question 1

Do firms respond in the short-run to tighter retirement rules?

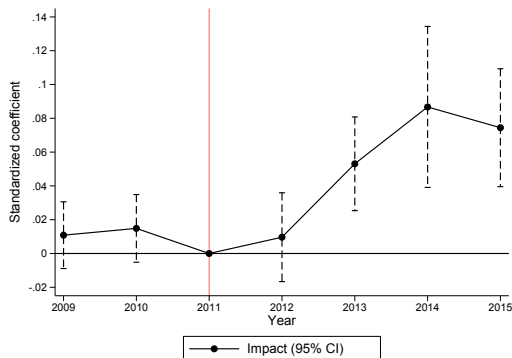
- ▶ *Incumbent* workforce: layoffs, fixed-term contracts renewals and conversions
- ▶ External labor market: hiring

Preview:

- ▶ Firms re-adjust as workers who were expected to retire soon are retained for longer
- ▶ A 1 year increase in the treatment is associated with: ↑ layoffs (up to 17%); ↓ renewal of fixed-term contracts (up to 5%); ↓ hiring (up to 2%)
- ▶ Adjustments are stronger for middle-aged workers
- ▶ Adjustments mostly concern coworkers in the same occupation group as affected workers

Total Layoffs

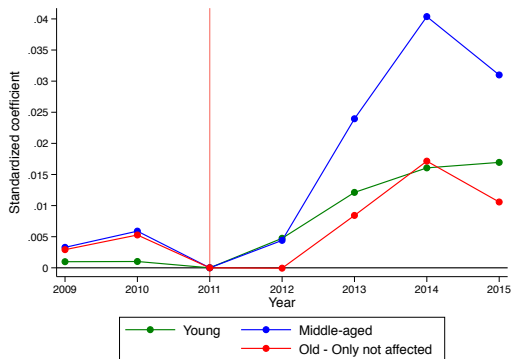
Layoffs increase in more affected firms in the post-reform period



N.obs = 534,443. 1 SD of the treatment = 1.16 years. Mean outcome pre-reform: 0.51

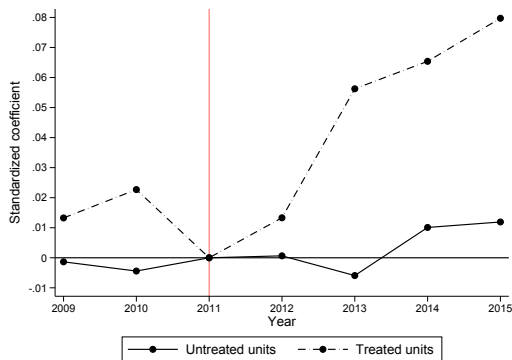
Which workers are most affected?

Effects heterogeneous across age cohorts: stronger for old and middle-aged workers



Which workers are most affected?

Effects concentrated on co-workers in the same occupation group (bc, wc, mng) as affected ones



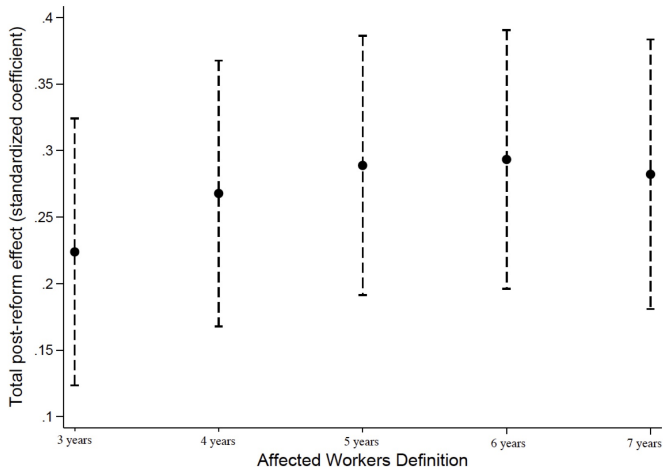
Which firms respond more? High vs low pre-reform turnover

Firms who tend to fire more in the pre-reform period are those increasing layoffs in response to the reform. Presumably, lower cost for workers (they expect higher probability of separation)



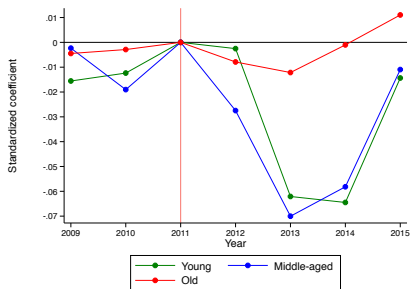
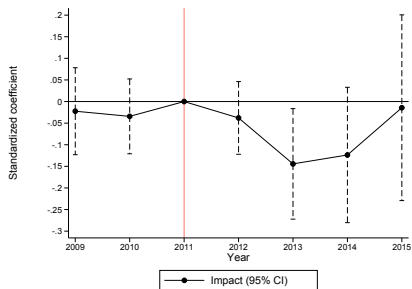
What affected workers matter more?

Effects stable as we broaden the definition of affected workers.
Thus, the impact of reform is transitory



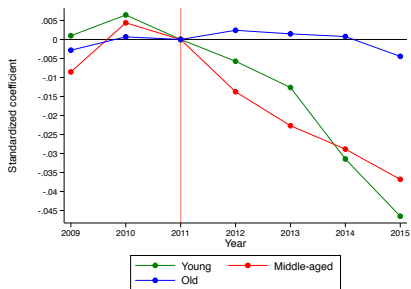
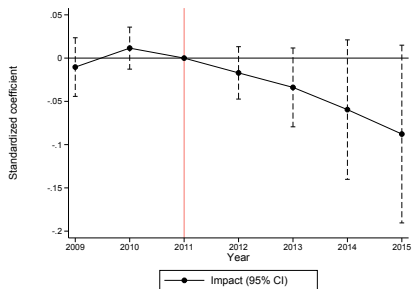
Other outcomes: Hiring

Hiring declines up to 2%



Other outcomes: contract renewals

The renewal of fixed-term contracts drops up to 5%

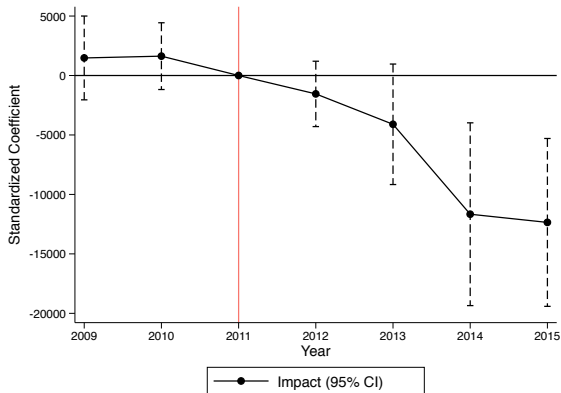


Questions 2 and 3

- ▶ Given the documented adjustments, **how do tighter retirement rules affect co-workers' earnings trajectories?**
- ▶ What is the role of **social insurance programs** in covering part of this cost?
- ▶ **Preview:**
 - ▶ Non-affected workers incumbent at the reform date in more treated firms exhibit worse earnings dynamics in the post-reform period
 - ▶ Non-work subsidies are covering most of the earnings cost
 - ▶ A decomposition exercise shows that half of the remaining earning loss stems from costs associated to layoffs

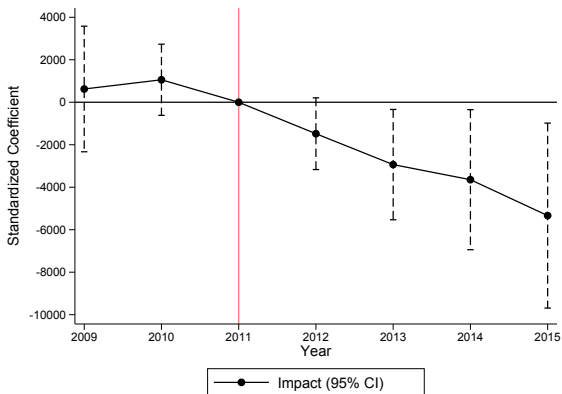
Co-workers' Labor Earnings

We sum the labor income of all workers incumbent *at the same firm* at the date of the reform



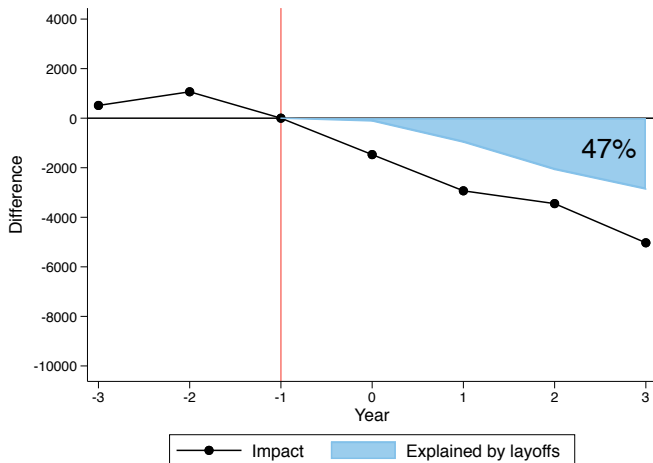
Co-workers' Total Earnings

If we include non-work subsidies the effect on total earnings is much smaller → big role for social-security programs



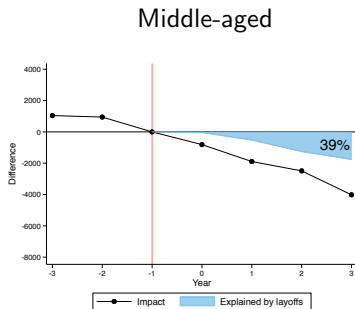
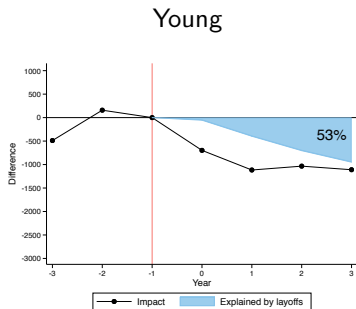
Layoffs and Co-workers Earnings

Layoffs explain half of the drop in earnings after we consider non-work subsidies → role for within-firm dynamics.



Layoffs and co-workers earnings (by age)

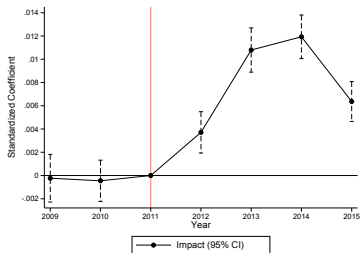
Layoffs explain a larger part of the drop for young workers → middle-aged seem closer substitutes to retiring workers



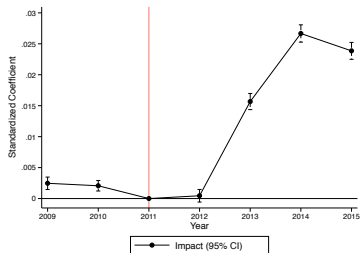
Consequences for Affected Workers

Increase in the probability of receiving non-work subsidies or being put on short-time work

Short-time Work



Non-work Subsidy



Conclusions

- ▶ We find evidence that workers of different cohorts are partly substitutes → an increase in the retention rate of older workers leads to an increase in the layoffs of younger workers
- ▶ Middle-aged workers are the closest substitute to retiring workers
- ▶ Yet, **costs are small**, transitory and concentrated when compared to the large and long-term improvement in sustainability of social-security system

Thank You!

Old-age pensions: old and new rules

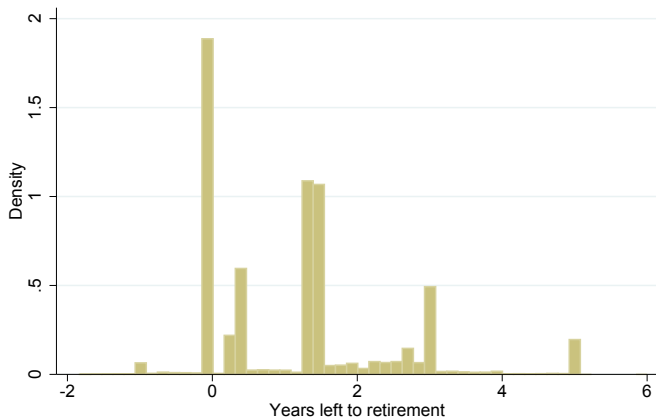
	Men		Women	
	Old rules	New rules	Old rules	New rules
	<i>Age requirement (years)</i>			
2011	65	Not in place	60	Not in place
2012	65	66	60	62
2013	65.25	66.25	60.25	62.25
2014	65.25	66.25	60.3	63.75
2015	65.25	66.25	60.5	63.75
2016	65.6	66.25	61.08	65.25
2017	65.6	66.25	61.5	65.25
2018	65.6	66.25	61.8	66.25
2019	66	66.25	62.75	66.25
2020	66	66.25	63.25	66.25
	<i>Contribution requirement (years)</i>			
	20	20	20	20
	<i>Waiting window (months)</i>			
	12	No	12	No

Seniority pensions: old and new rules

		Old rules		New rules	
		Men	Women	Men	Women
2011	Quota 96 (60 yo, 35 yoc) or 40 yoc				
2012	Quota 96 (60 yo, 35 yoc) o 40 yoc	42.08 yoc	41.08 yoc		
2013	Quota 97,3 (61.25 yo, 35 yoc) o 40 yoc	42.4 yoc	41.4 yoc		
2014	Quota 97,3 (61.25 yo, 35 yoc) o 40 yoc	42.5 yoc	41.5 yoc		
2015	Quota 97,3 (61.25 yo, 35 yoc) o 40 yoc	42.5 yoc	41.5 yoc		
2016	Quota 97,3 (61.25 yo, 35 yoc) o 40 yoc	42.5 yoc	41.5 yoc		
2017	Quota 97,6 (61.6 yo, 35 yoc) o 40 yoc	42.5 yoc	41.5 yoc		
2018	Quota 97,6 (61.6 yo, 35 yoc) o 40 yoc	42.5 yoc	41.5 yoc		
<i>Waiting window</i>					
12 months				No	

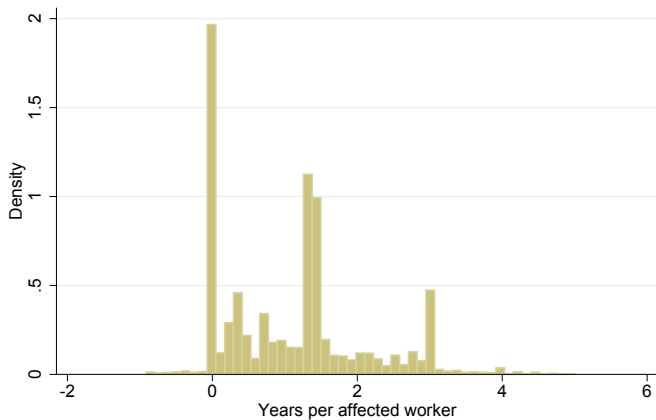
"yo" = years old; "yoc" = years of contribution

Worker-level treatment distribution



Obs = 147679
Treatment mean = 1.16
Treatment sd = 1.24

Firm-level treatment distribution



Obs = 88369
Treatment mean = 1.19
Treatment sd = 1.26