Colloque sur l'emploi des seniors

organisé par la DARES

PENSION REFORMS AND WOMEN RETIREMENT PLANS

Tito Boeri

Bocconi University, Fondazione Rodolfo Debenedetti, Netspar and IZA

14 octobre 2010

Paris

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE L'ÉCONOMIE, DE L'INDUSTRIE ET DE L'EMPLOI

MINISTÈRE DU TRAVAIL, DE LA SOLIDARITÉ ET DE LA FONCTION PUBLIQUE

Background

Two papers on the interactions between labor markets and pensions:

- T. Boeri and A. Brugiavini (2009), Pension Reforms and Women Retirement Plans. *Journal of Population Ageing*, 1(1), 7-30.
- T. Boeri and V. Galasso (2010), Is Social Security Secure with NDC? in *Holzmann and Farmer (eds)*. NDC Systems around the World, forthcoming.

Outline

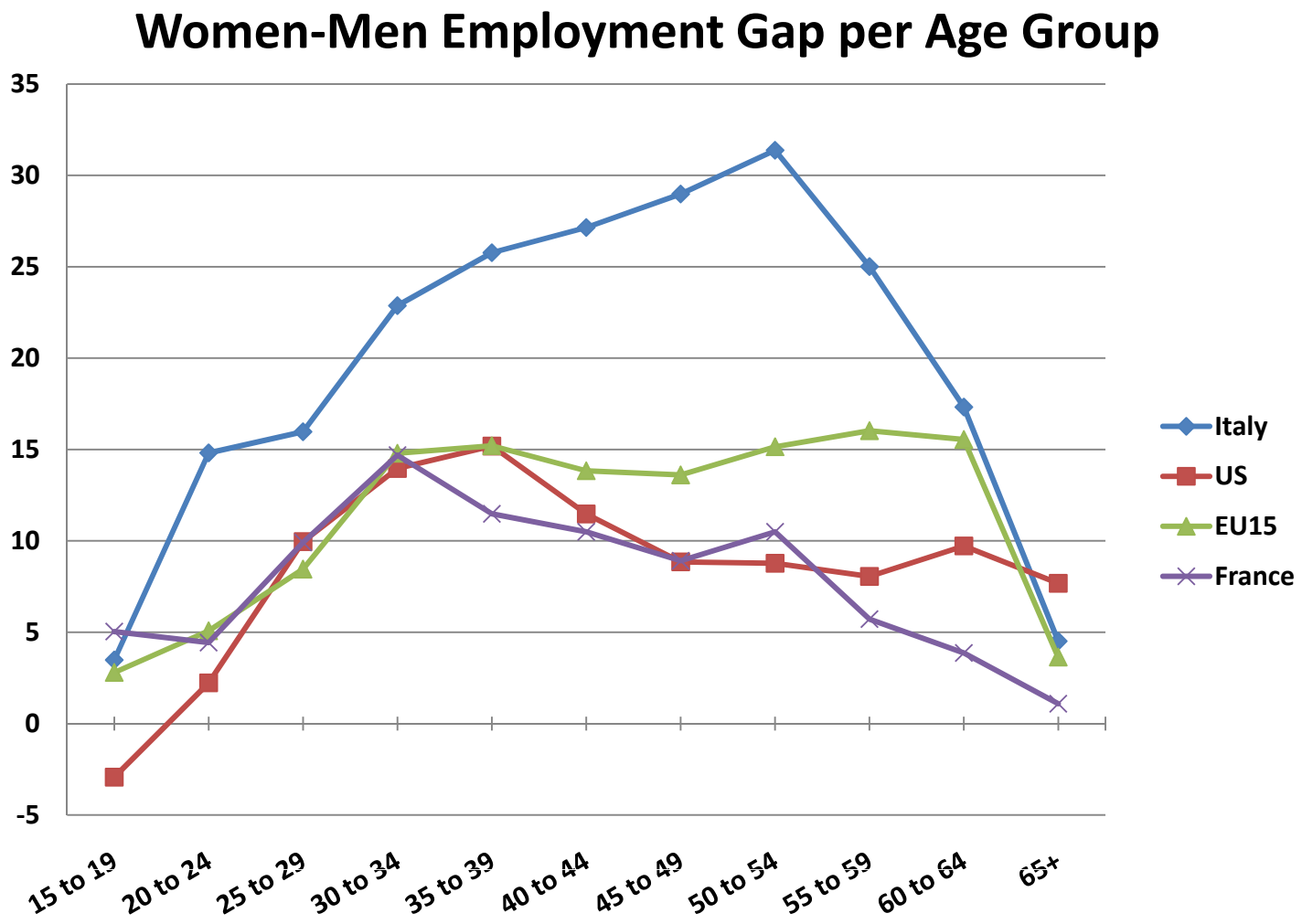
- The never ending Gender Employment Gap in Italy
- The never ending Pension Reform and associated derailment risks
- Career breaks and retirement decisions before and after NDC
- Labour market dualism and the gender pension gap

A stubbornly large gender employment gap

Trend Relative Employment/Population Rate of Women

	1970	1975	1980	1985	1990	1995	2000	2005	2008
Australia	0.48	0.53	0.58	0.64	0.71	0.76	0.79	0.81	0.83
Austria	0.57	0.58	0.59	0.63	0.69	0.74	0.78	0.82	0.83
Belgium	0.47	0.50	0.54	0.60	0.66	0.72	0.77	0.78	0.82
Canada	0.50	0.58	0.66	0.74	0.80	0.84	0.86	0.88	0.90
Denmark	0.63	0.70	0.77	0.83	0.86	0.87	0.88	0.89	0.89
Finland	0.76	0.81	0.86	0.90	0.92	0.92	0.91	0.94	0.93
France	0.55	0.59	0.65	0.69	0.73	0.77	0.80	0.84	0.87
Germany	0.53	0.57	0.61	0.64	0.69	0.75	0.79	0.83	0.84
Ireland	0.37	0.38	0.41	0.46	0.53	0.62	0.69	0.75	0.79
Italy	0.36	0.39	0.43	0.47	0.50	0.53	0.57	0.64	0.66
Japan	0.61	0.60	0.62	0.65	0.68	0.69	0.70	0.71	0.72
Netherlands	0.31	0.37	0.44	0.53	0.63	0.71	0.77	0.81	0.85
New Zealand	0.41	0.46	0.52	0.62	0.73	0.79	0.81	0.82	0.84
Norway	0.48	0.60	0.70	0.78	0.84	0.88	0.90	0.92	0.93
Portugal	0.50	0.54	0.57	0.63	0.69	0.75	0.79	0.83	0.84
Spain	0.32	0.35	0.37	0.40	0.44	0.51	0.57	0.68	0.75
Sweden	0.67	0.75	0.84	0.91	0.96	0.97	0.95	0.93	0.93
Switzerland	0.51	0.54	0.57	0.60	0.65	0.69	0.74	0.83	0.85
UK	0.55	0.61	0.66	0.72	0.78	0.82	0.84	0.84	0.84
US	0.55	0.61	0.69	0.75	0.80	0.83	0.85	0.84	0.85
EU15	0.49	0.51	0.55	0.60	0.65	0.70	0.74	0.78	0.81
Mean	0.51	0.55	0.60	0.66	0.71	0.76	0.79	0.82	0.84
St. Dev.	0.12	0.12	0.13	0.14	0.13	0.12	0.10	0.08	0.07

Peaking at 50



Source: OECD, 2009

Pensions and Labour Supply

Women's labour supply is more responsive to changes in the internal rates of return of pension systems (Blundell et al. 2002; Disney 2004)

Why?

– Differences in preferences

– Intra-family bargaining

– Productivity in home-production

– Longer life expectancies

– **Gender differences in working-careers** (Claire 2004; Baxter 2001)

Gap Years per retired individual

Bank of Italy Survey of Household Income and Wealth.
Difference between years of potential activity (since beginning of career) and years of contribution, as stated by the individuals.

ITALY	Men			Women		
Age\Education	Low	Medium	High	Low	Medium	High
<50	1.35	0.38	0	1.87	1.43	1.36
50–55	2.61	1.34	0	3.38	2.02	0.89
56–60	3.87	2.01	0.6	10.8	5.44	0.79
61–65	7.72	3.16	1.51	13.19	8.11	0.79
66–70	9.79	5.74	1.34	13.57	7.25	2.36
71–75	11.05	5.56	1.95	13.31	7.11	3.33
>75	11.67	6.21	2.07	14.55	7.47	2.25

Source: own calculations on the SHIW data, 1989–2002 waves

Summary

- The Gender Employment Gap in Italy
- The never ending Pension Reform and the associated derailment risks
- Career breaks and retirement decisions before and after the NDC
- Labour market dualism and the gender pension gap

Italian Pension Reforms

	Pre-1993 regime	1992 reform	1995 reform
Pension benefit	2% × (pensionable earnings) × (t), where t is years of tax payments (at most 40)	2% × (pensionable earnings) × (t), where t is years of tax payments (at most 40)	Proportional to capitalized value of career contributions, the proportionality factor increasing with age at retirement (from 0.04720 at age 57 to 0.06136 at age 65)
Pension indexation	Cost of living plus real earnings growth	Cost of living	Cost of living
Pension to survivor	60% to spouse 20% to each child 40% to each child (if no spouse)	Same	Same
Years of contributions for eligibility	15	20	5
Early retirement provision	Any age if contributed to SS for 35 years or more, no actuarial adjustment	Any age if contributed to SS for 35 years or more, no actuarial adjustment	No early retirement provision
Total payroll tax	24.5% of gross earnings	27.17% of gross earnings	32.7% of gross earnings

The 1995 Pension Reform

- It introduced a notional defined contribution (NDC) system from a Defined Benefit (DB) system

- Pension benefits are automatically linked to an average of lifetime earnings, adjusted by some actuarial coefficients

How the system operates

$$p = \tau \sum_{i=1}^{n} w_i \prod_{j=i+1}^{n+1} (1 + g_j^w) \frac{1}{\gamma}$$

$$\gamma = \sum_{i=1}^{m} (1+\delta)^{1-i}$$

Where:

p is the pension benefit

τ is the contribution rate on labour earnings (w_i)

n is the number of years of contributions

g is the rate of return on the contributions (moving average of GDP growth)

γ is the annuitisation (coefficiente di trasformazione)

δ is an imputed indexation rate

m is the expected length of retirement

Many decisions still to be made

PENSION REFORMS AFTER 1995

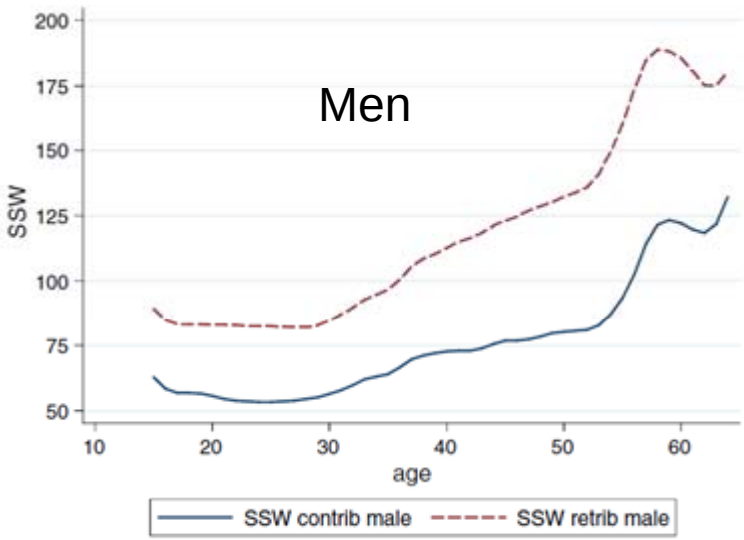
Year	Description
1997	The "Prodi Agreement" speeds up the increase in the early retirement age, harmonises public and private pension regimes and increase pension contributions paid by self-employed workers.
1998	Introduction of new compulsory pension contributions for all self-employed workers not covered by existing compulsory schemes.
1999	Enforcement of controls on invalidity pension recipients to verify their medical conditions.
2001	Minimum pension is increased to 516 euro.
2004	The Law of Reform of the Pension System, fully implemented only in 2008, progressively increases retirement age, makes it possible to accumulate pension benefits, earned income and supports development of supplementary pension schemes
2005	Introduction of a "Super bonus" for workers in the private sector who, having acquired their pension rights between 2005 and 2007 will decide to continue working afterwards.
2005	Reform of the supplementary pension system, providing for the transfer of workers' current end-of-service allowance (trattamento di fine rapporto, TFR) to occupational pension funds unless the workers object.

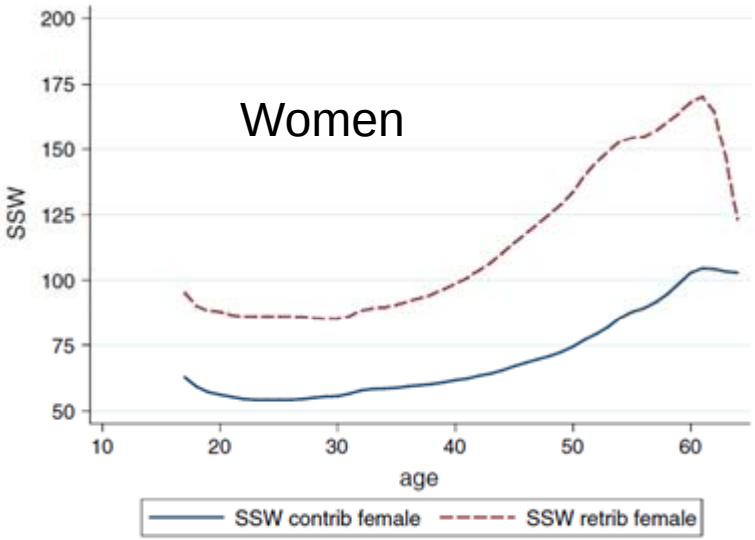
Future Challenges

- Completeness and Design of reforms:
  - Long and “unfair” transition (up to 2032)
  - Revision of coefficienti di trasformazione
  - Indexation of pensions
  - Front loading
  - Which Growth rate? Wage or GDP growth?
  - “Vintage” Pensions

Social Security Wealth before and after the 1995 Pension Reform

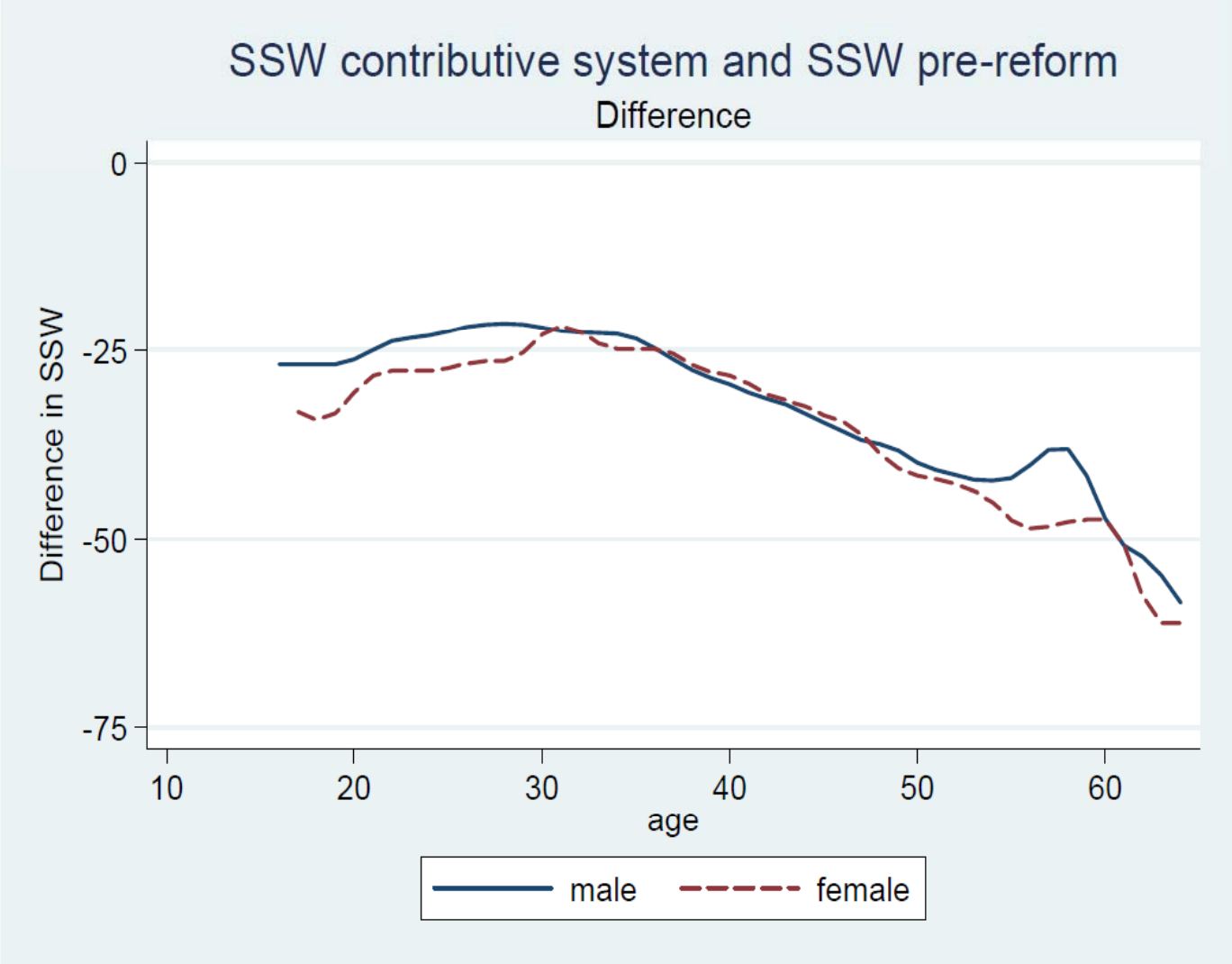
Social Security Wealth (SSW) according to the pre-reform (red line) and the post-reform legislation (blue line)





Stronger reductions for Women

Figure 6. Difference in Social Security Wealth across the Two Regimes



Outline

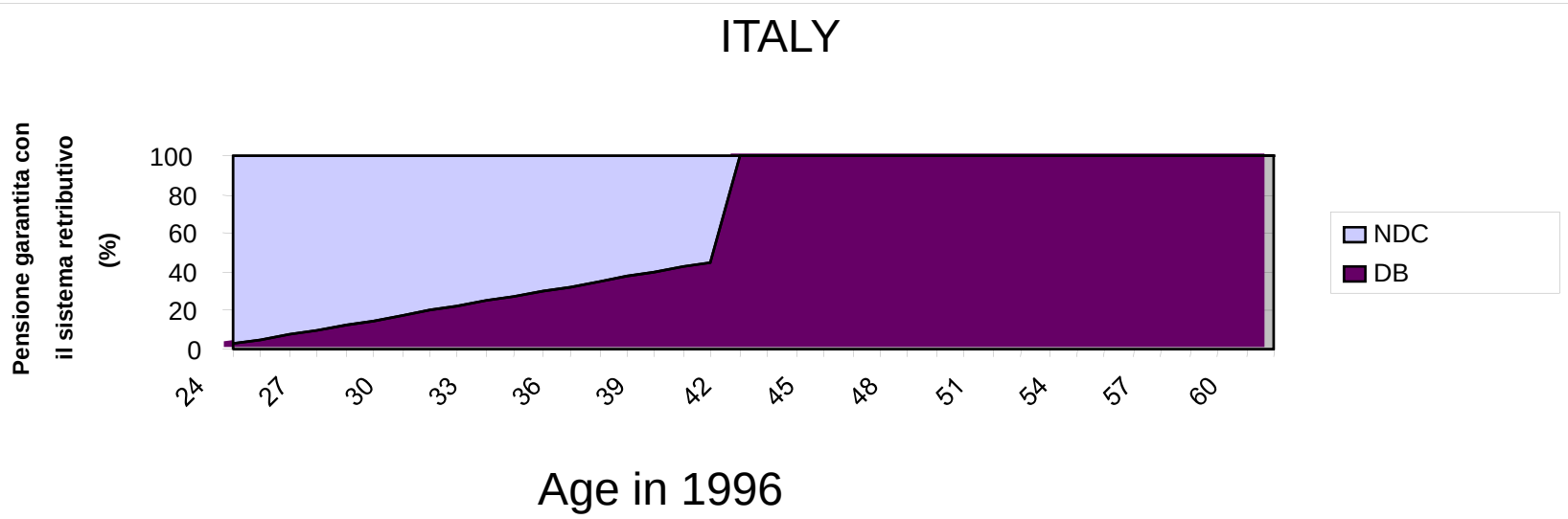
- The Gender Employment Gap in Italy
- The never ending Pension Reform and derailment risks
- Career breaks and retirement decisions before and after the NDC
- Labour market dualism and the gender pension gap

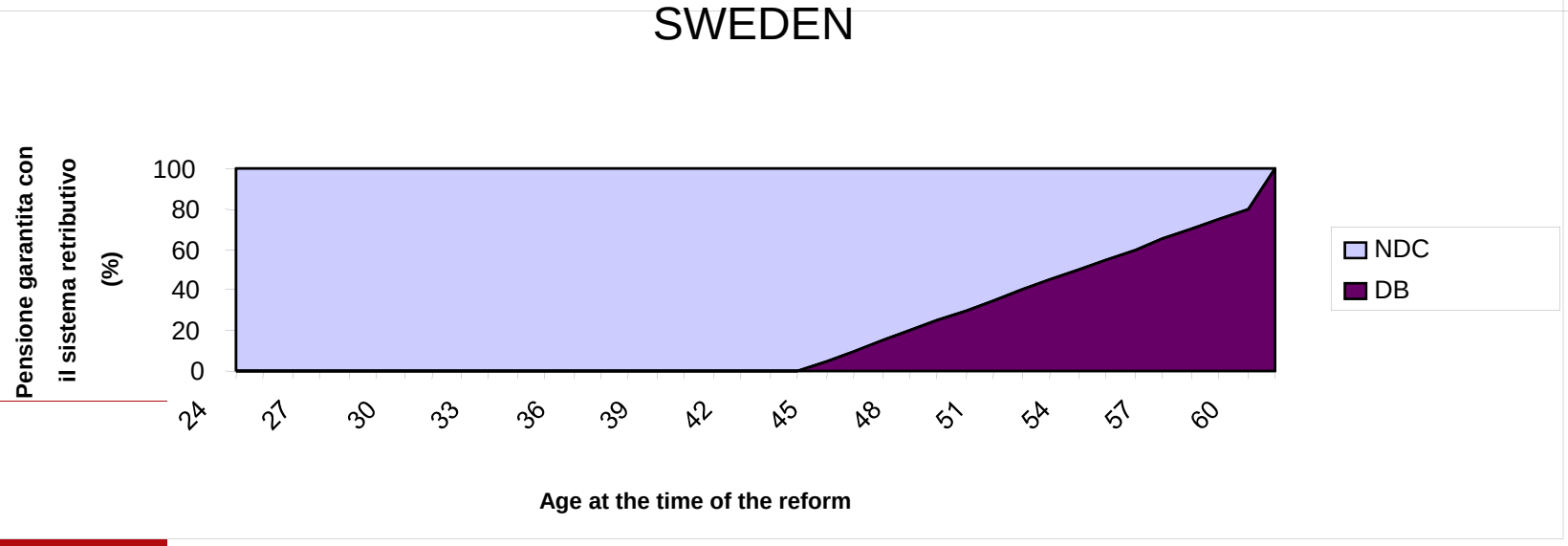
Effects of gap years on planned retirement decisions before/after NDC

In the long transition to NDC, 3 groups

- *Senior*: workers with more than 18 years contributions in 1995, fully exempted from the NDC reform
- *Mid-senior*: workers with less than 18 years contributions in 1995, moving only pro-quota to the new regime
- *Junior*: people starting to work after 1996, hence entirely under the new regime

The never ending transition





Effects of gap years on planned retirement decisions before/after NDC

Table 4 Average planned retirement age by year, sex, sector of activity and seniority

		1989	1991	1993	1995	1998	2000	2002
Men								
Private employees	Senior	60.12	59.97	58.72	58.70	60.06	60.61	60.95
	Mid	60.06	60.86	60.52	61.44	62.04	62.41	62.87
	Junior	–	–	–	–	62.69	63.20	63.32
Public employees	Senior	60.34	60.59	59.61	59.54	60.43	61.15	61.09
	Mid	60.37	60.92	61.07	61.48	62.33	62.37	62.85
	Junior	–	–	–	–	63.09	63.93	63.96
Self-employed	Senior	62.20	62.46	62.13	60.58	63.62	63.61	63.72
	Mid	61.15	61.64	62.05	62.70	63.65	64.20	64.11
	Junior	–	–	–	–	64.28	64.51	64.78
Women								
Private employees	Senior	56.82	56.88	56.53	57.37	58.83	59.36	59.36
	Mid	56.84	57.83	57.35	58.84	59.52	60.11	60.51
	Junior	–	–	–	–	60.33	61.02	61.21
Public employees	Senior	57.62	57.78	58.27	58.50	59.55	59.95	59.92
	Mid	57.06	58.25	58.35	59.74	60.83	60.83	60.88
	Junior	–	–	–	–	62.03	61.38	61.75
Self-employed	Senior	59.47	59.53	58.83	58.65	61.08	61.11	61.36
	Mid	58.08	59.56	59.25	60.16	60.55	61.80	61.38
	Junior	–	–	–	–	62.68	62.64	61.60

+.83
+2.81
1.98

Diff-in-diff

- Mid Men +2.81
- Senior Men +.83
- Difference in differences: + 1.98

- Mid Women +3.66
- Senior Women +2.44
- Difference in differences: + 1.22

Multivariate Analysis: Men

Pooled OLS

Table 5 Regression of the change in planned retirement age

Men	Coefficient	SE	t
Age	−0.02387	0.027272	−0.88
Coh3640	−2.02336	1.250872	−1.62
coh4145	−2.49691	1.216308	−2.05
coh4650	−2.90095	1.226569	−2.37
coh5155	−3.00994	1.261795	−2.39
coh5660	−3.28504	1.31537	−2.50
coh6165	−3.46654	1.389657	−2.49
coh6670	−4.00148	1.487269	−2.69
coh7175	−3.88177	1.595457	−2.43
coh7680	−3.37265	1.728102	−1.95
Married	0.118524	0.24979	0.47
Medium-edu	0.132152	0.311247	0.42
High-edu	0.441811	0.402435	1.10
Private sector	−0.15054	0.185953	−0.81
Self-employed	0.038953	0.246626	0.16
Senior	0.427109	0.600161	0.71
Mid	0.504331	0.511988	0.99
North	0.188216	0.207572	0.91
South	−0.23552	0.221421	−1.06
Gap-years	0.030187	0.021426	1.41
DSSP/1000	−0.023228	0.002434	−9.54
_cons	5.45993	2.164341	2.52
R^2	0.041		
Number of observations	2,750		

Multivariate Analysis: Women

Table 6 Regression of the change in planned retirement age

Women	Coefficient	SE	*t*
Age	−0.00054	0.035971	−0.01
coh3135	−4.79243	4.641566	−1.03
coh3640	−1.56671	2.343934	−0.67
coh4145	−3.05158	2.157497	−1.41
coh4650	−3.31202	2.05219	−1.61
coh5155	−2.97688	1.957537	−1.52
coh5660	−2.91751	1.883896	−1.55
coh6165	−2.32298	1.814788	−1.28
coh6670	−3.19252	1.764972	−1.81
coh7175	−1.34957	1.746632	−0.77
Married	0.122168	0.26913	0.45
Medium-edu	0.664887	0.506712	1.31
High-edu	0.456547	0.559948	0.82
Private sector	−0.55131	0.247101	−2.23
Self-employed	0.479927	0.438906	1.09
Senior	2.194045	0.738252	2.97
Mid	1.559067	0.643821	2.42
North	0.557459	0.276256	2.02
South	0.192263	0.311676	0.62
Gap-years	0.057137	0.027851	2.05
DSSP/1000	−0.01469	0.004202	−3.5
_cons	1.590119	1.931871	0.82
R^2	0.0155		
Number of observations	1,498		

IV Estimates: Men

Table 8 Instrumental variables estimates of the difference in planned retirement age

Men	Coefficient	SE	*t*
DSSP	−0.023067	0.011322	−2.04
Age	−0.024084	0.030318	−0.79
coh3640	−2.026445	1.317933	−1.54
coh4145	−2.499207	1.30925	−1.91
coh4650	−2.903123	1.321526	−2.20
coh5155	−3.01116	1.356894	−2.22
coh5660	−3.286692	1.404422	−2.34
coh6165	−3.469122	1.466343	−2.37
coh6670	−4.003927	1.557766	−2.57
coh7175	−3.885837	1.643351	−2.36
coh7680	−3.377222	1.831754	−1.84
Married	0.116271	0.304501	0.38
Medium-edu	0.129404	0.351943	0.37
High-edu	0.43606	0.549658	0.79
Private sector	−0.150896	0.184508	−0.82
Self-employed	0.037868	0.268309	0.14
Senior	0.427387	0.568057	0.75
Mid	0.504884	0.473107	1.07
North	0.187929	0.20699	0.91
South	−0.233639	0.255385	−0.91
Gap-years	0.030337	0.023125	1.31
_cons	5.464006	2.149049	2.54
Number of obs	2,750		

IV Estimates: Women

Table 9 Instrumental variables estimates of the difference in planned retirement age

Women	Coefficient	SE	t
DSSP	−0.016194	0.015995	−1.01
Age	0.001405	0.041195	0.03
coh3640	3.306315	1.247844	2.65
coh4145	1.822954	1.10258	1.65
coh4650	1.562535	1.142522	1.37
coh5155	1.901828	1.21468	1.57
coh5660	1.963693	1.326331	1.48
coh6165	2.569572	1.504923	1.71
coh6670	1.721119	1.810457	0.95
coh7175	3.571842	1.958745	1.82
coh7680	4.939266	2.925819	1.69
Married	0.126722	0.274675	0.46
Medium-edu	0.682841	0.5402	1.26
High-edu	0.485765	0.64957	0.75
Private sector	−0.555405	0.251497	−2.21
Self-employed	0.506985	0.557843	0.91
Senior	2.214249	0.753401	2.94
Mid	1.562262	0.636632	2.45
North	0.566265	0.286915	1.97
South	0.189109	0.3084	0.61
Gap-years	0.057003	0.025669	2.22
_cons	−3.315035	2.817518	−1.18
Number of obs	1,498		

Summarizing

The shift from DB to NDC increased planned retirement.

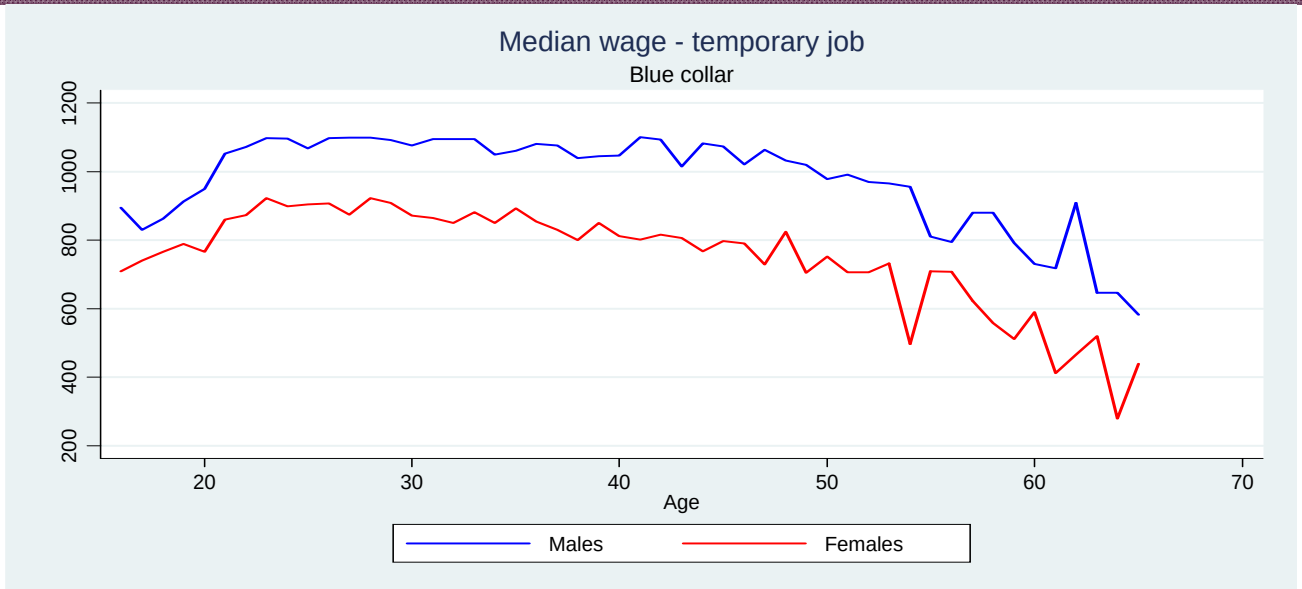
Men more reactive than women to changes in pension rules, but women more affected by gaps in career.

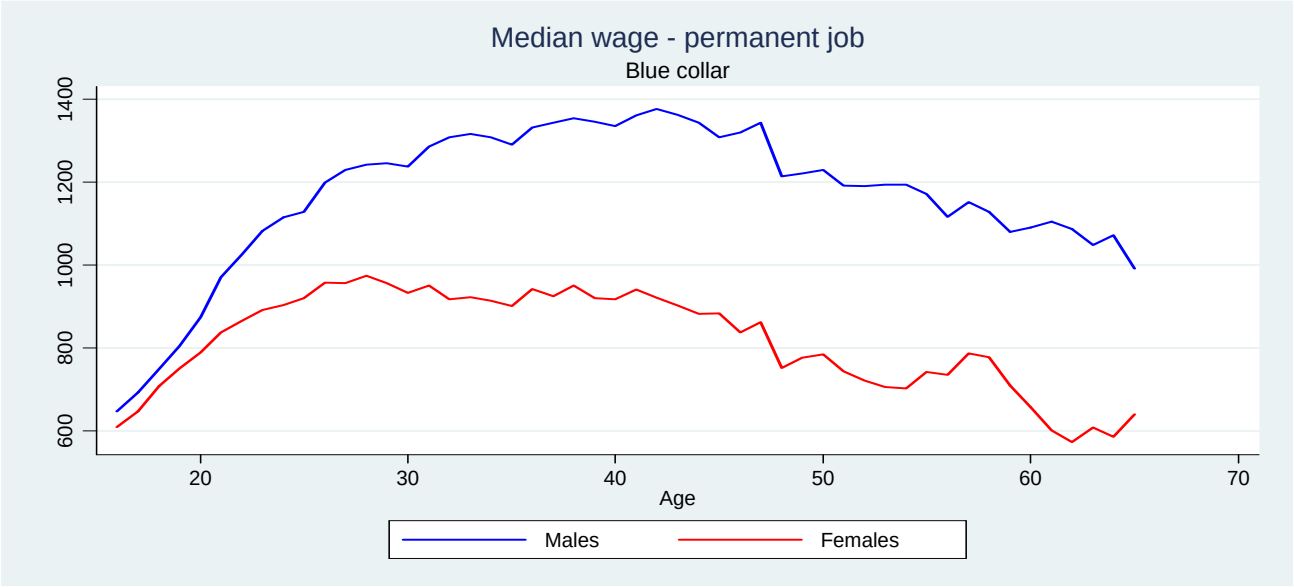
Binding constraints related to eligibility to early retirement reduce the responsiveness of women to changes in pension rules.

Outline

- The Gender Employment Gap in Italy
- The never ending Pension Reform and derailment risks
- Career breaks and retirement decisions before and after the NDC
- Labour market dualism and the gender pension gap

The Wage Gap and Dualism



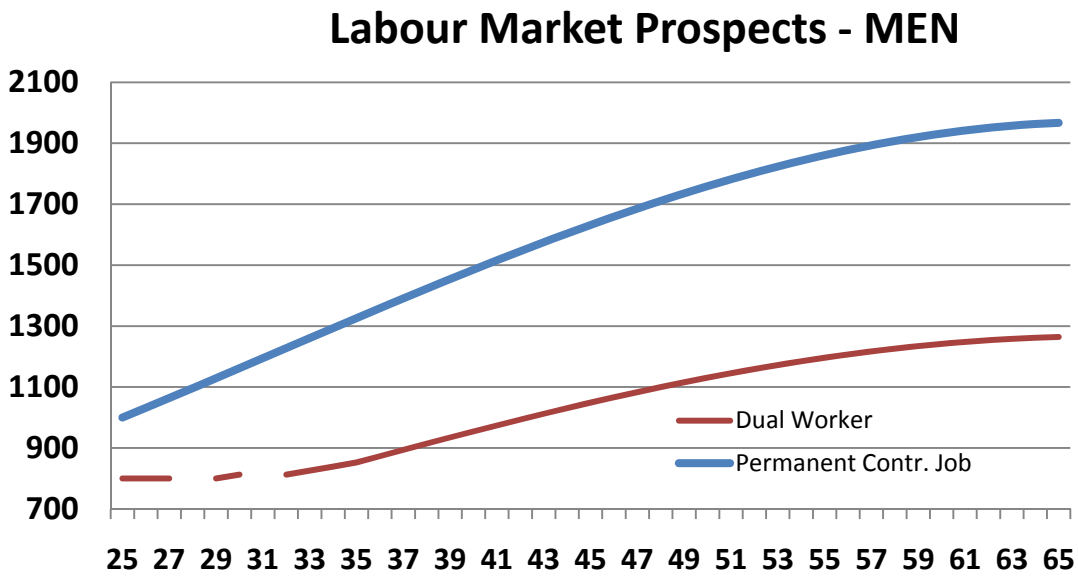


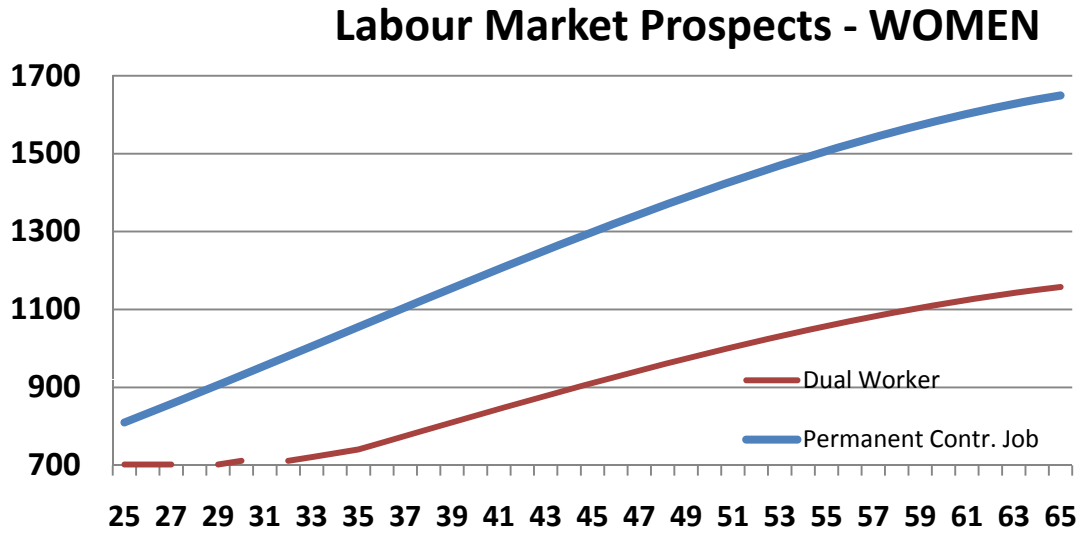
Pension simulations

We consider two representative individuals respectively entering with temporary contracts (case A) and with permanent (case B) contracts and simulate their future pension benefits for both men and women.

We concentrate on individuals with upper secondary education. Their wage profile is calculated using European Commission Household Panel data obtained by pooling the 1994-2001 waves.

Pension simulations





Dual work career:

- 25-28: Temporary Job (Co.co.pro.)
- 29: Unemployed
- 29-31: Fixed Term Job
- 32: Unemployed
- 33-34: Fixed Term Job
- 35-65: Permanent Job

The temporary-permanent pension gap

			Dual Worker		Permanent Contr. Worker	
Growth Rate (*g*)	Retirement Age	Transformation Coefficients (2010)	Monthly Pension	Replacement Rate	Monthly Pension	Replacement Rate
1.5%	67	0.0562	1052	79%	1677	84%
	65	0.0562	996	75%	1591	79%
	60	0.04798	690	53%	1112	57%
1.2%	67	0.0562	1015	76%	1576	79%
	65	0.0562	943	71%	1502	75%
	60	0.04798	658	50%	1058	54%
1.0%	67	0.0562	953	71%	1513	75%
	65	0.0562	910	68%	1446	72%
	60	0.04798	638	49%	1023	52%

The gender Pension Gap

NOTIONAL DEFINED CONTRIBUTION SYSTEM – GENDER PENSION GAP			
Gdp Growth	**Retirement Age**	**Dual Worker**	**Permanent Job**
1.5%	67	13,44%	23,89%
	65	13,68%	24,14%
	60	14,20%	24,68%
1.2%	67	13,38%	23,83%
	65	13,64%	24,10%
	60	14,18%	24,67%
1.0%	67	13,35%	23,79%
	65	13,61%	24,07%
	60	14,17%	24,65%

DEFINED BENEFIT SYSTEM – GENDER PENSION GAP		
Retirement Age	**Dual Worker**	**Permanent Job**
65	10,12%	20,24%
60	12,11%	22,42%

Final Remarks

Breaks in career affect retirement decisions of women more than men

After NDC stronger effect of career breaks on retirement decisions of women

Labour market dualism is an additional source of discontinuous careers and lower pensions particularly under NDC

Issues of adequacy: problem of pension rules (actuarial increase after 65?) and/or of labour market rules?