

Is Social Security Secure with NDC?

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**NDC Systems: Progress and New Frontiers in a Changing
Pension World**


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NDC today

- ❑ Reforms of the 90s: Italy, Latvia, Sweden, Poland.
- ❑ A structural response to major problems:
 - ❑ such as aging, distortions in the labor market, need to diversify retirement income (NDC-FDC)
 - ❑ aiming at actuarial fairness, long-term financial sustainability vis-à-vis demographic shocks
- ❑ Have NDCs become the new *Conventional Wisdom*?
- ❑ What are the future challenges?

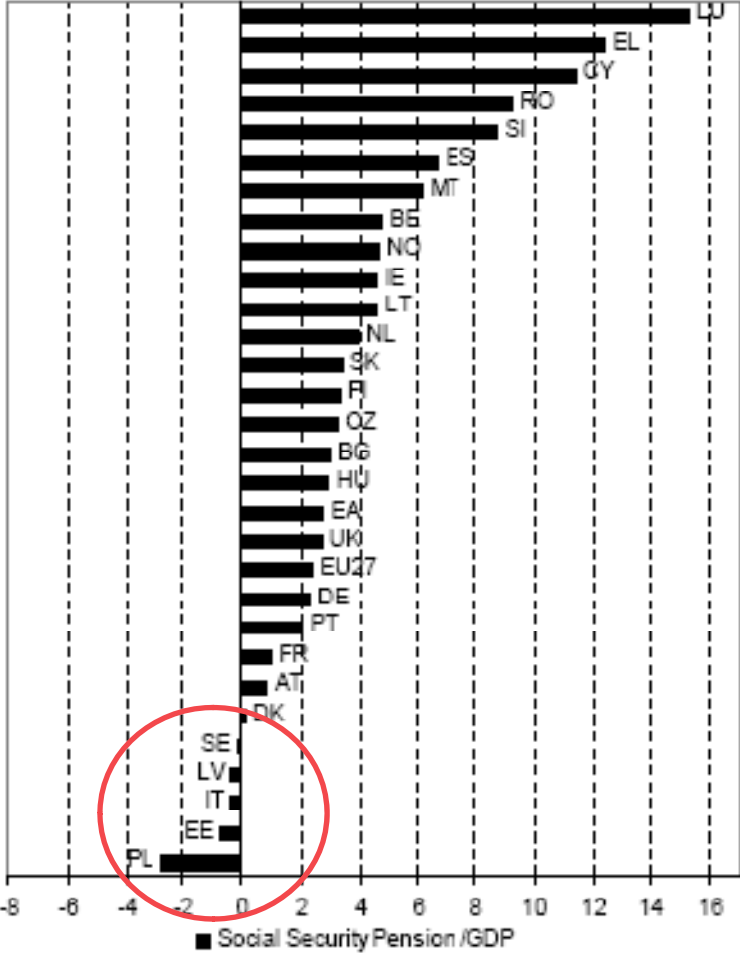


Future Challenges to NDC

- ❑ Completeness and Design of reforms:
 - ❑ Long and “unfair” transition (Italy)
 - ❑ Process of updating of transformation coefficients (Italy)
 - ❑ Role of FDC: Stage of Development & Administrative costs 
 - ❑ Fairness Issues: Growth rates for Retirees and Workers
 - ❑ Which Growth rate? Wage (Sweden) or GDP growth (Italy)
 - ❑ Political Sustainability of negative real indexation (Sweden)
 - ❑ “Vintage” Pension

Pension spending 2007-60

Graph 51 - Change in the Public Pension/GDP over 2007-60 (in percentage points)



Source: Commission services, EPC.



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 - ❑ “Vintage” Pensions
- ❑ Further Aging:
 - ❑ due also to changes in Demographic estimates
 - ❑ Economic effects: financial sustainability
 - ❑ Political effects: political support & aging electorate

Estimates of elderly population (aged 65 or more)

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	1980	2007	E88 (2020)	E09 (2020)	Delta E(2020)	E88 (2050)	E09 (2050)	Delta E(2050)
AUT	15,5	16,9	19,4	19,4	0	21,7	28,2	6,5
BEL	14,4	17,1	17,7	19,5	1,8	20,8	25,7	4,9
DK	14,4	15,3	20,1	20,1	0	23,2	24,5	1,3
FIN	12	16,5	21,7	22,4	0,7	22,7	26,1	3,4
FRA	14	16,4	19,5	20,2	0,7	22,3	25,6	3,3
GER	15,5	19,8	21,7	22,8	1,1	24,5	31,7	7,2
GRC	13,1	18,6	17,8	21,1	3,3	21,1	31,5	10,4
IRL	10,7	11,1	12,6	13,3	0,7	18,9	23,7	4,8
ITA	13,4	19,9	19,4	22,7	3,3	22,6	32,6	10
NLD	11,5	14,5	18,9	19,8	0,9	22,6	26,6	4
PRT	10,2	17,3	15,6	20,1	4,5	20,6	30,1	9,5
ESP	10,9	16,7	17	18,8	1,8	22,9	32,1	9,2
SWE	16,3	17,4	20,8	20,8	0	21,4	24,7	3,3
UK	14,9	16	16,3	18,3	2	18,7	23	4,3



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Politico-Economic Effects of Aging

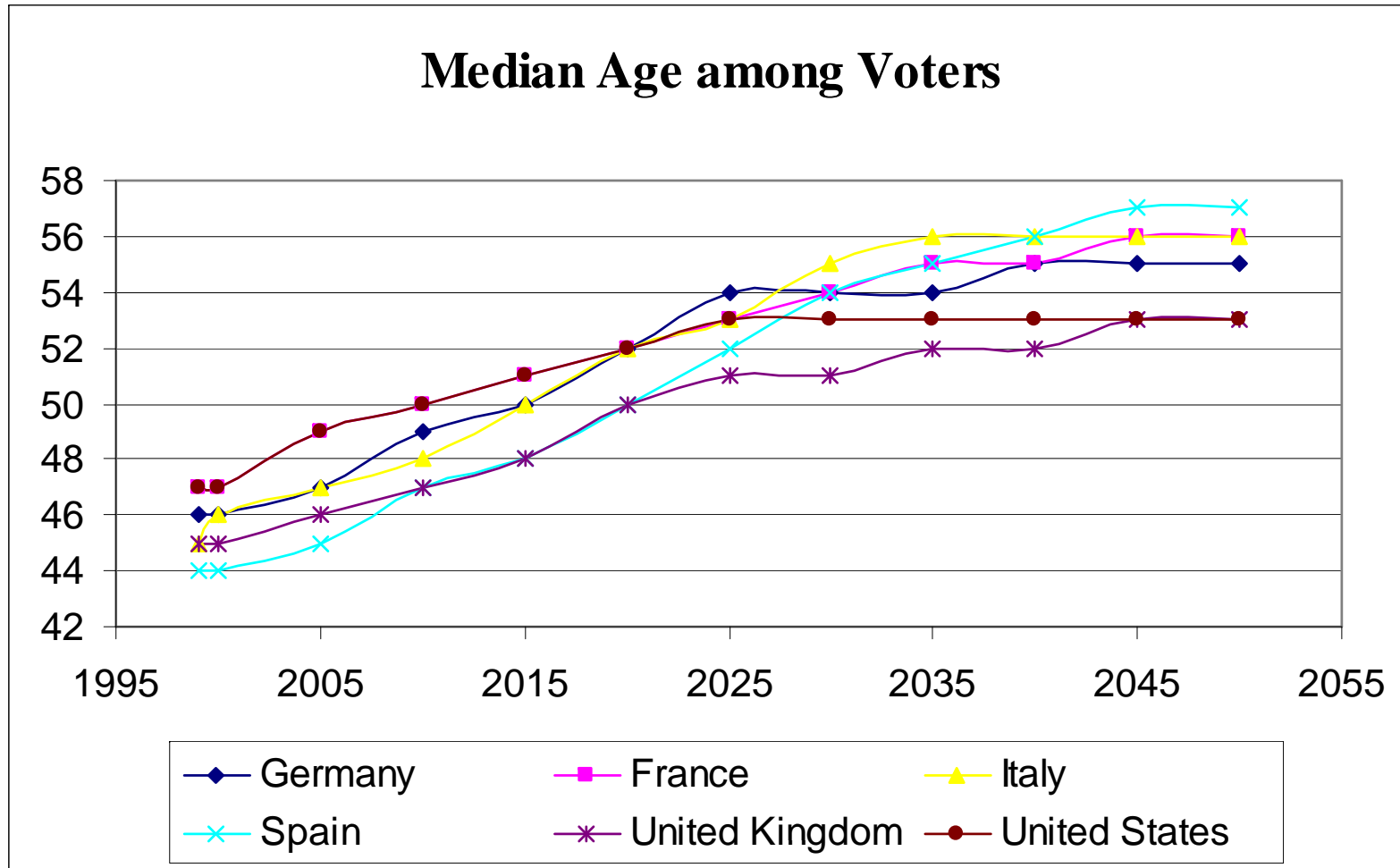
Aging induces (at least) two crucial effects:

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- Economic: An increase in the Dependency Ratio reduces the average long run return of the system
→ Since pensions represent a saving device, Portfolio Rebalancing: agents *reduce* the size of pension system.
- Political: Aging Increases the Political Weight of the Elderly
→ Generates "political pressure" to *increase* the generosity of the system



Aging and Politics



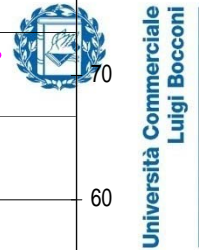
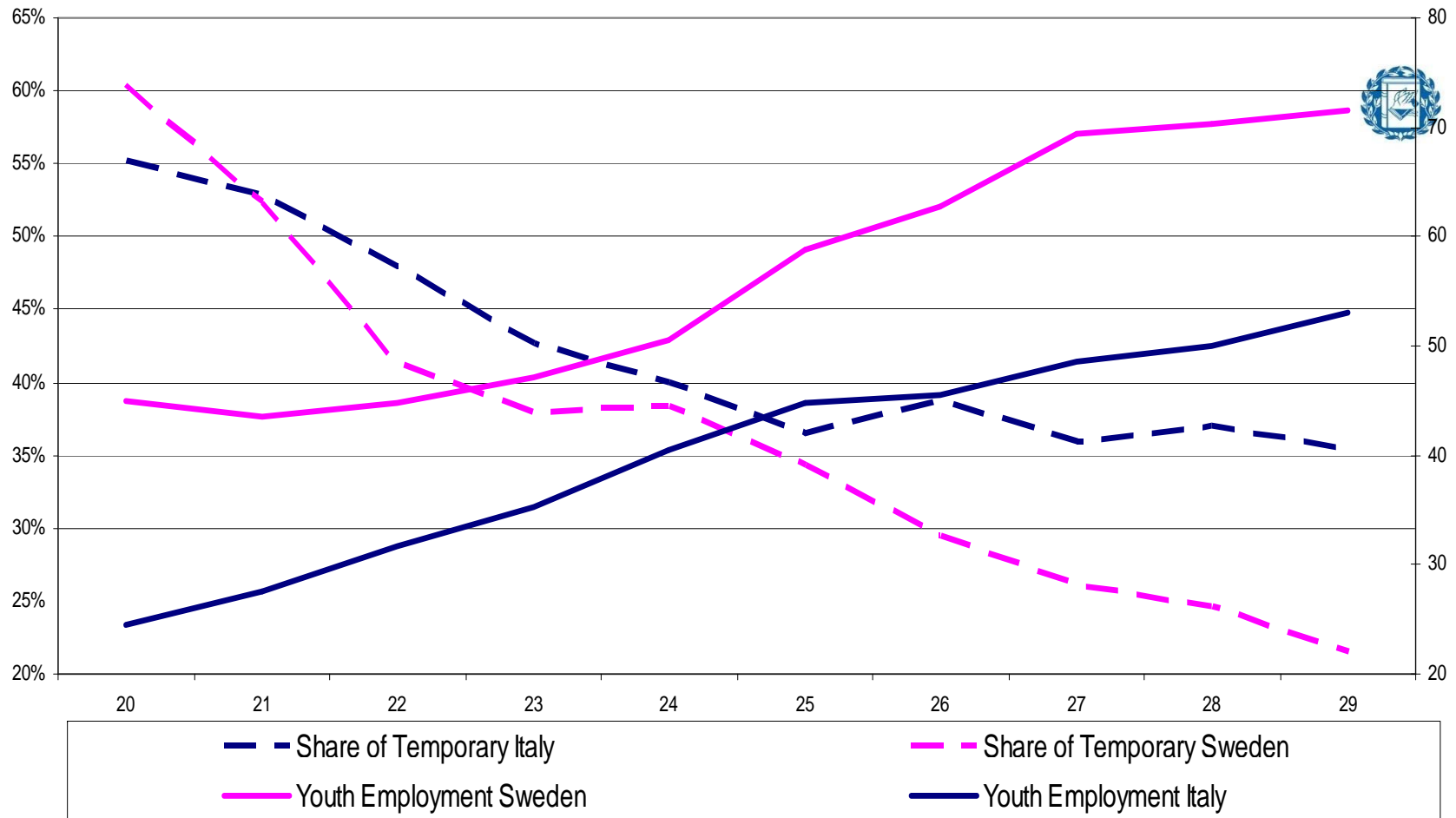
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- ❑ Further Aging:
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 - ❑ Economic effects: financial sustainability
 - ❑ Political effects: political support & aging electorate
- ❑ Future Impact of the current labor market situation for the young

Youth Temporary & Permanent Employment in 2006

Employment by age

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The Future of NDC

- ❑ Simulate two different working carriers in Italy and Sweden
 - ❑ A: Discontinuous Career with temporary & permanent jobs
 - ❑ B: Uninterrupted Career on a permanent job (but with same entry wage than temporary job; e.g., tenure track job)
- ❑ Different Contribution Rates:
 - ❑ Italy 33%
 - ❑ Sweden 18.5% = 16% + 2.5%
- ❑ Different Growth Rate Scenarios:
 - ❑ Italy 1%-1.5%
 - ❑ Sweden 1-5%-2%
- ❑ Different Retirement Age Scenarios:
 - ❑ Italy 60-65-67
 - ❑ Sweden 65-67-70



NDC Pension Benefit Calculation

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

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

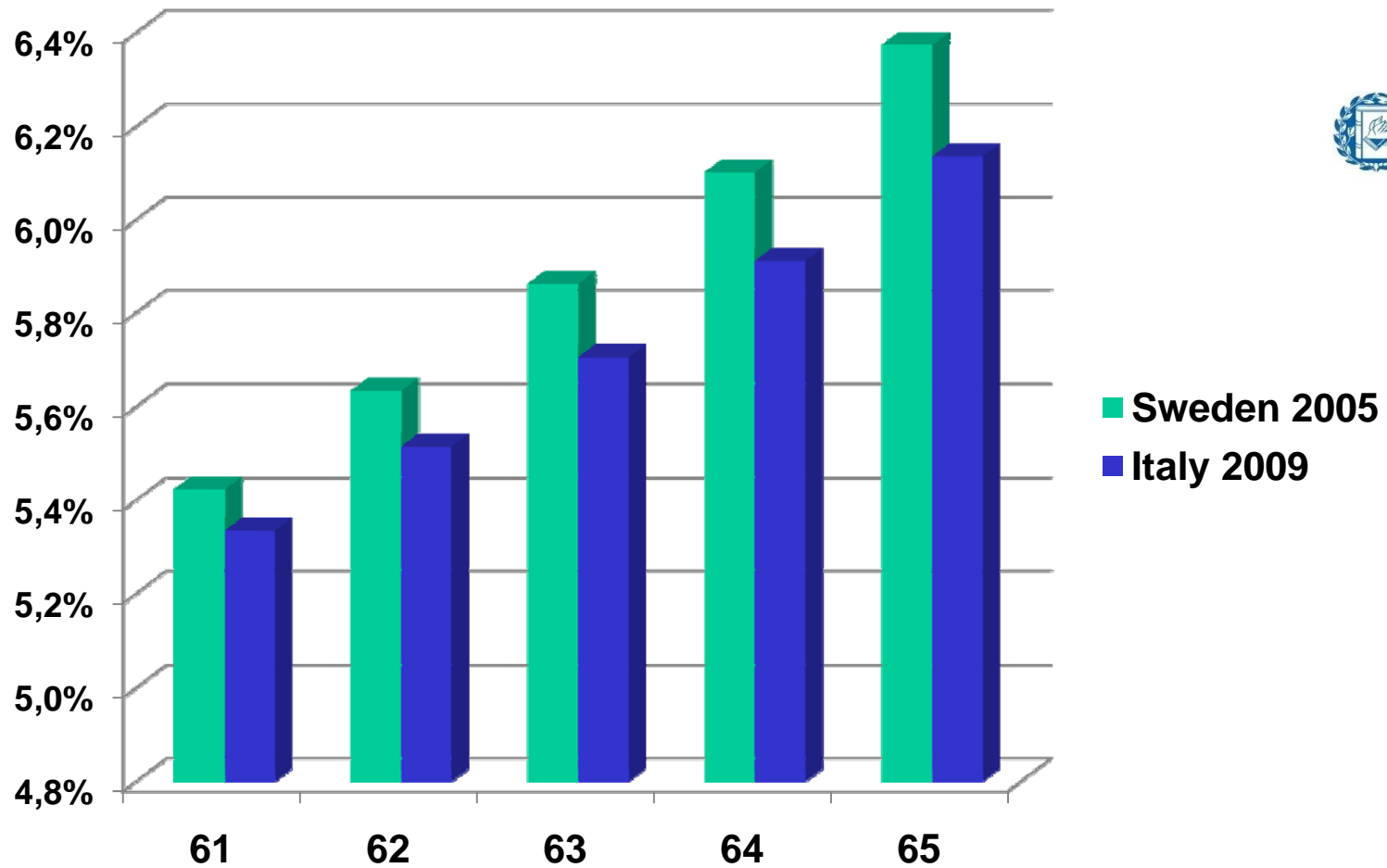
ITALY: $\delta = 1.5\%$

SWEDEN: $\delta = 1.6\%$

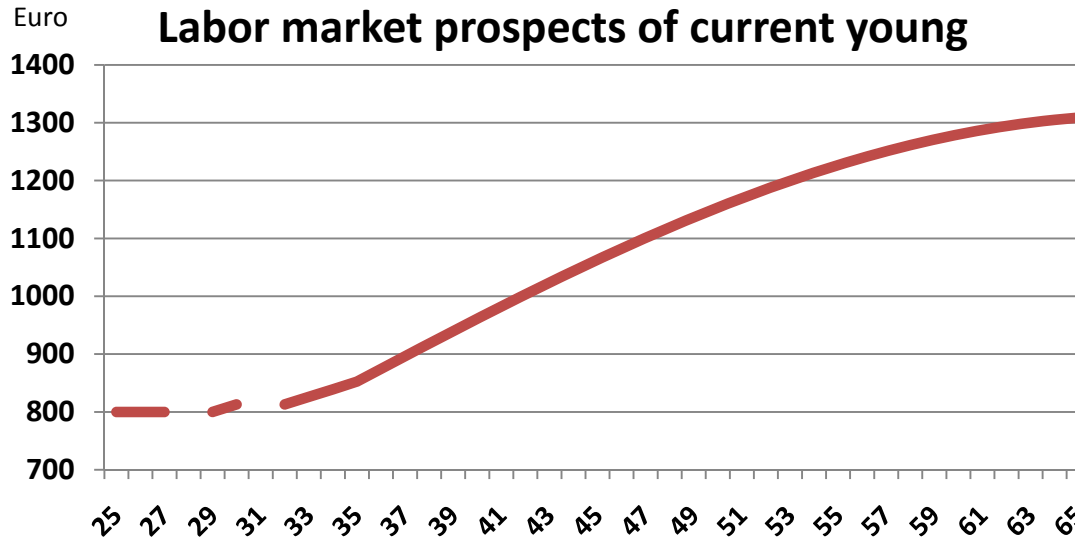
$$P_{t+1} = P_t (1 + \pi_t) (1 + g_t - \delta)$$



Transformation coefficients by age



Italy: Future pension benefits



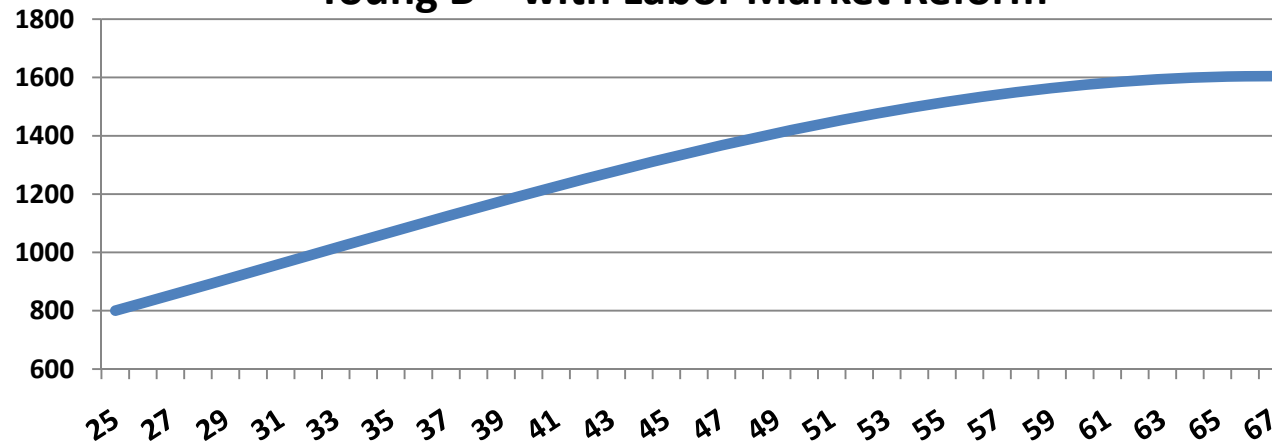
25-28 y.o.: Temporary Job (Co.co.pro.)
29: Unemployed
29-31: Fixed Term Job
32: Unemployed
33-35: Fixed Term Job
35-65: Permanent Job



Growth Rate (<i>g</i>)	Retirement Age	Transformation Coefficients (2009)	Monthly Pension	Replacement Rate
1.5%	67	0.06136	1155	88%
	65	0.06136	1070	82%
	60	0.05163	731	57%
1.2%	67	0.06136	1090	83%
	65	0.06136	1012	77%
	60	0.05163	697	54%
1.0%	67	0.06136	1090	80%
	65	0.06136	976	75%
	60	0.05163	675	53%

Italy: Future pension benefits

Young B – with Labor Market Reform



Growth Rate (g)	Retirement Age	Transformation Coefficients (2009)	Monthly Pension	Replacement Rate
1.5%	67	0.06136	1497	93%
	65	0.06136	1390	87%
	60	0.05163	957	61%
1.2%	67	0.06136	1409	88%
	65	0.06136	1312	82%
	60	0.05163	910	58%
1.0%	67	0.06136	1353	84%
	65	0.06136	1263	79%
	60	0.05163	881	56%

Italy: Future pension benefits

Comparing working carriers & Pension Outcomes

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Growth Rate (<i>g</i>)	Retirement Age	Transformation Coefficients (2009)	Young A		Young B		B/A
			Monthly Pension	Replacement Rate	Monthly Pension	Replacement Rate	
1.5%	67	0.06136	1155	88%	1497	93%	1.30
	65	0.06136	1070	82%	1390	87%	1.30
	60	0.05163	731	57%	957	61%	1.31
1.2%	67	0.06136	1090	83%	1409	88%	1.29
	65	0.06136	1012	77%	1312	82%	1.30
	60	0.05163	697	54%	910	58%	1.31
1.0%	67	0.06136	1090	80%	1353	84%	1.24
	65	0.06136	976	75%	1263	79%	1.29
	60	0.05163	675	53%	881	56%	1.31



Italy: Comparing Systems

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			Contributive System					
			Young A			Young B		
Growth Rate (g)	Retirement Age	Transformation Coefficients (2009)	Monthly Pension	Replacement Rate	65 vs. 60	Monthly Pension	Replacement Rate	65 vs. 60
1.5%	67	0.06136	1155	88%	1.46	1497	93%	1.45
	65	0.06136	1070	82%		1390	87%	
	60	0.05163	731	57%		957	61%	
1.2%	67	0.06136	1090	83%	1.45	1409	88%	1.45
	65	0.06136	1012	77%		1312	82%	
	60	0.05163	697	54%		910	58%	
1.0%	67	0.06136	1090	80%	1.45	1353	84%	1.45
	65	0.06136	976	75%		1263	79%	
	60	0.05163	675	53%		881	56%	

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Retributive System							
Young A				Young B			
Retirement Age	Replacement Rates (2009)	Monthly Pension	65 vs. 60	Replacement Rates (2009)	Monthly Pension	65 vs. 60	B/A
65	78%	1013	1.18	80%	1274	1.14	1.26
60	68%	857		72%	1117		1.30

The Future of NDC in Italy

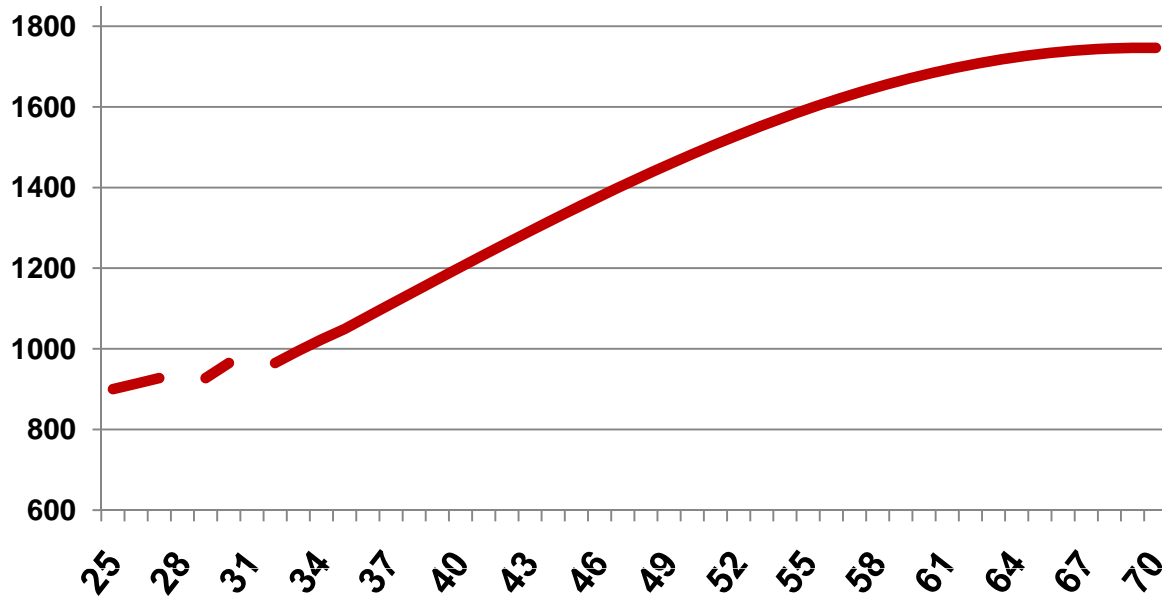
- ❑ Early differences in labor market career matter for pension benefits:
 - ❑ NDC: -30% if career is discontinuous
 - ❑ Previous redistributive system: -26-30% from higher levels
 - ❑ Stronger differences for low retirement ages & high growth

- ❑ In NDCs increasing the retirement age may help:
 - ❑ From 60 to 65: pension benefits +45%
 - ❑ Benefits w/ discontinuous career at 65 greater than benefits w/ continuous career at 60
 - ❑ From 60 to 65: pension benefits only +14-18% in old retributive system



Sweden: Future pension benefits

Labor market prospects of current young



25-28 y.o.: Temporary Job
29: Unemployed
29-31: Fixed Term Job
32: Unemployed
33-35: Fixed Term Job
35-65: Permanent Job



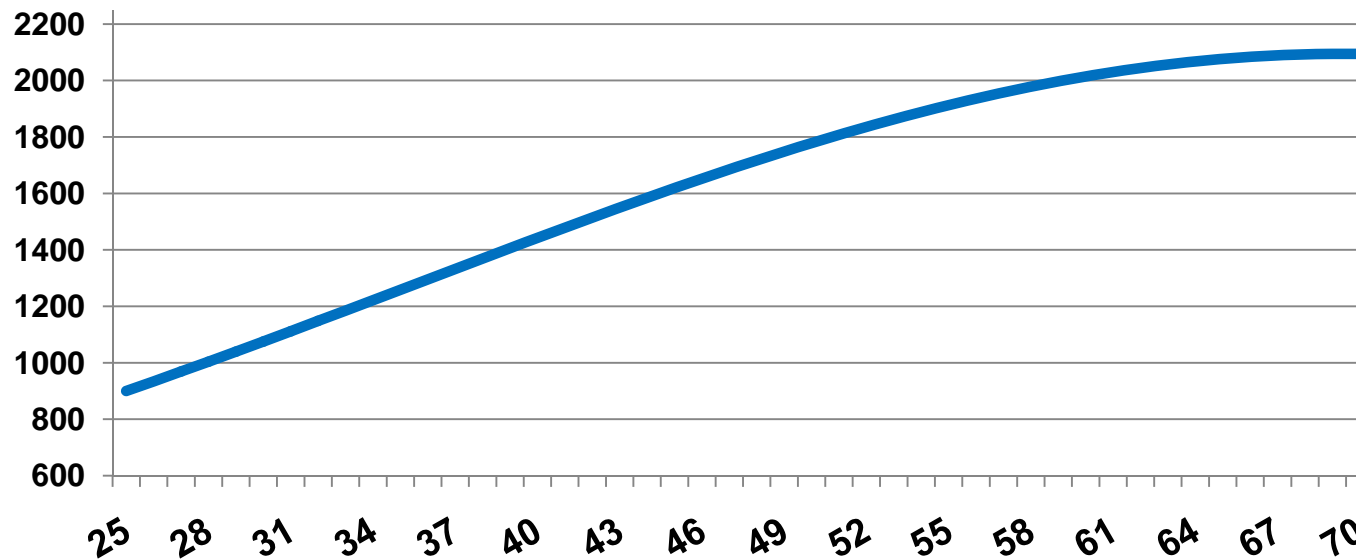
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Growth Rate (g)	Retirement Age	Transformation Coefficients (2009)	Monthly Pension	Replacement Rate	70 vs. 65
1.5%	65	0.0621	813	47%	1.54
	67	0.0678	966	55%	
	70	0.0784	1251	72%	
2.0%	65	0.0621	959	46%	1.57
	67	0.0678	1149	55%	
	70	0.0784	1509	71%	

Sweden: Future pension benefits

Permanent Job



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Growth Rate (g)	Retirement Age	Transformation Coefficients (2009)	Monthly Pension	Replacement Rate	70 vs. 65
1.5%	65	0.0621	1005	48%	1.54
	67	0.0678	1192	57%	
	70	0.0784	1541	74%	
2.0%	65	0.0621	1206	48%	1.57
	67	0.0678	1444	56%	
	70	0.0784	1892	72%	

Sweden: Future pension benefits

Comparing working carriers & Pension Outcomes



Growth Rate (<i>g</i>)	Retirement Age	Transformation Coefficients (2009)	Young A		Young B		B/A
			Monthly Pension	Replacement Rate	Monthly Pension	Replacement Rate	
1.5%	65	0.0621	813	47%	1005	48%	1.24
	67	0.0678	966	55%	1192	57%	1.23
	70	0.0784	1251	72%	1541	74%	1.23
2.0%	65	0.0621	959	46%	1206	48%	1.26
	67	0.0678	1149	55%	1444	56%	1.26
	70	0.0784	1509	71%	1892	72%	1.25

The Future of NDC in Sweden

❑ Early differences in labor market career matter for pension benefits also in Sweden:

- ❑ NDC: -24-26% if career is discontinuous
- ❑ Stronger differences for low retirement ages & high growth

❑ In NDCs increasing the retirement age may help:

- ❑ From 65 to 70: pension benefits +54-57%
- ❑ Benefits w/ discontinuous career at 67 almost the same as benefits w/ continuous career at 60

❑ Further concerns:

- ❑ potentially low replacement rates & vintage pensions
- ❑ role of FDC

What Future for NDC?

- ❑ It's hard to tell where the challenges will come from. Currently they come from indexation of benefits

- ❑ "vintage pensions" are a problem with an aging electorate
- ❑ but also indexation to wages (better wage bill) problematic during big recessions. Adopt from the start a moving average?

- ❑ In the future retrenching through NDC may face political obstacles when future generations will have to retire with lower pensions

- ❑ more problematic in Italy due to the unfairness of a long transition period than in Sweden
- ❑ many features of NDC open to manipulations for increasing the pension generosity

What Future for NDC?

- ❑ It's hard to tell where the challenges will come from

- ❑ More troubles may come from the current labor market situation for the current young workers

 - ❑ Discontinuous working career strongly penalized with NDC.

- ❑ Off a bad start in the labor market.....

..... up to a bad finish in the pension system

- ❑ Early Solution: reforming the entry path to the labor market

- ❑ Late Solutions: increase retirement age

- ❑ Most likely solution: charge the next generations