

The Political Future of Social Security in Aging Societies

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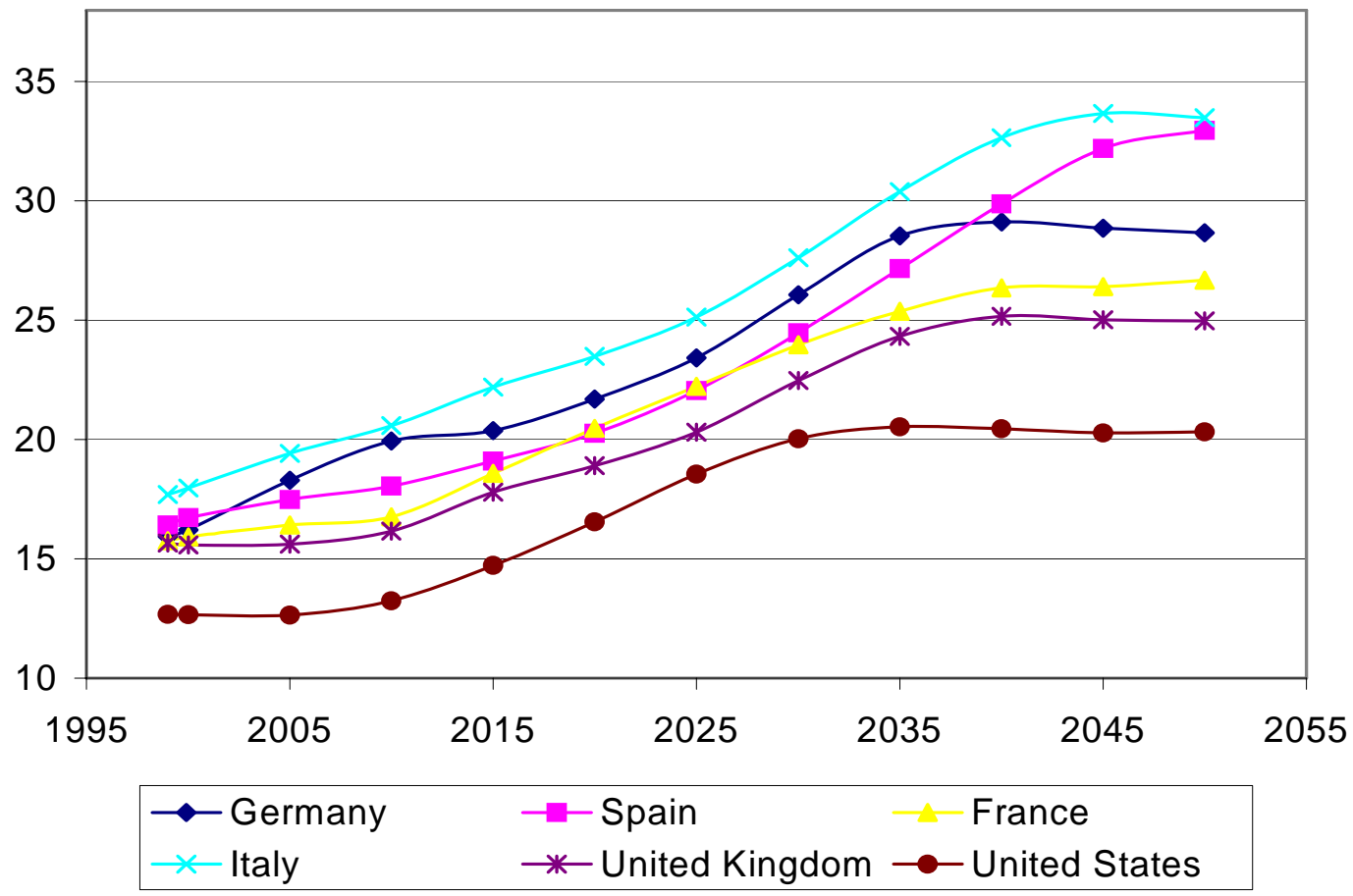
The World Bank
Tuesday Jan 30, 2007

A new perspective on aging and pensions?

❑ Conventional Wisdom: Aging – by increasing the ratio of Retirees to Workers– may undermine the financial sustainability of PAYG systems

Aging

Figure 2.1: Percentage of Elderly in the Total Population



Financial Sustainability Issues

EC and OECD's Official Projections of Pension Spending



Contribution to changes in spending from 2000 to 2050 of

	2000	2050	Old Age Dependency Ratio	Employment Rate	Benefit Formula	Eligibility
France	12.1	15.9	7.6	-0.5	-3.4	0.4
Germany	11.8	16.8	6.4	-0.7	-2.7	2.1
Italy	14.2	13.9	10.1	-3.2	-5.5	-1.5
Spain	9.4	17.4	8.6	-2.6	0	2
UK	4.3	3.6	1.7	0.1	-2.5	0.1
US	4.4	6.2	2.4	-0.1	-0.2	-0.3

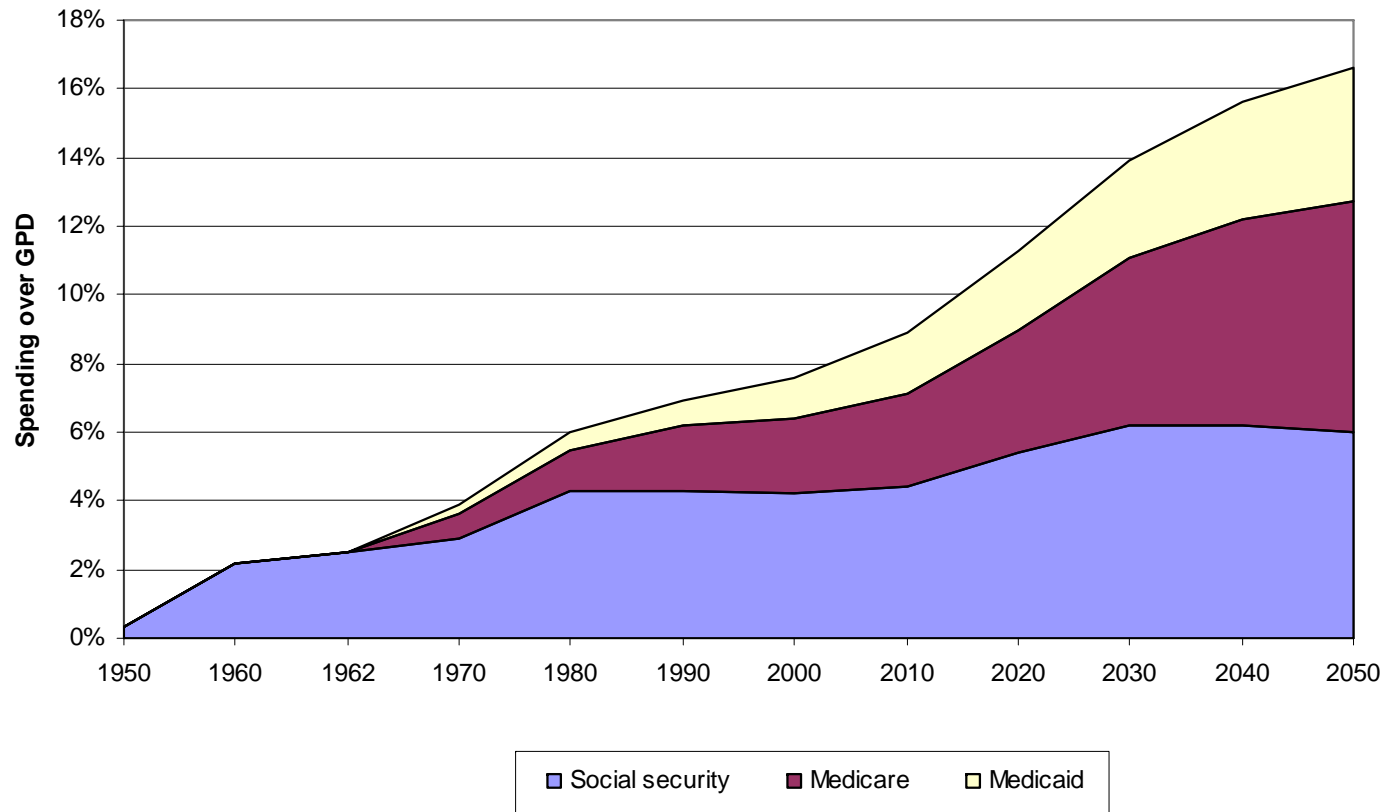
Financial Sustainability Issues

Projections: Social Security and Health Care Spending in US

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This book's perspective

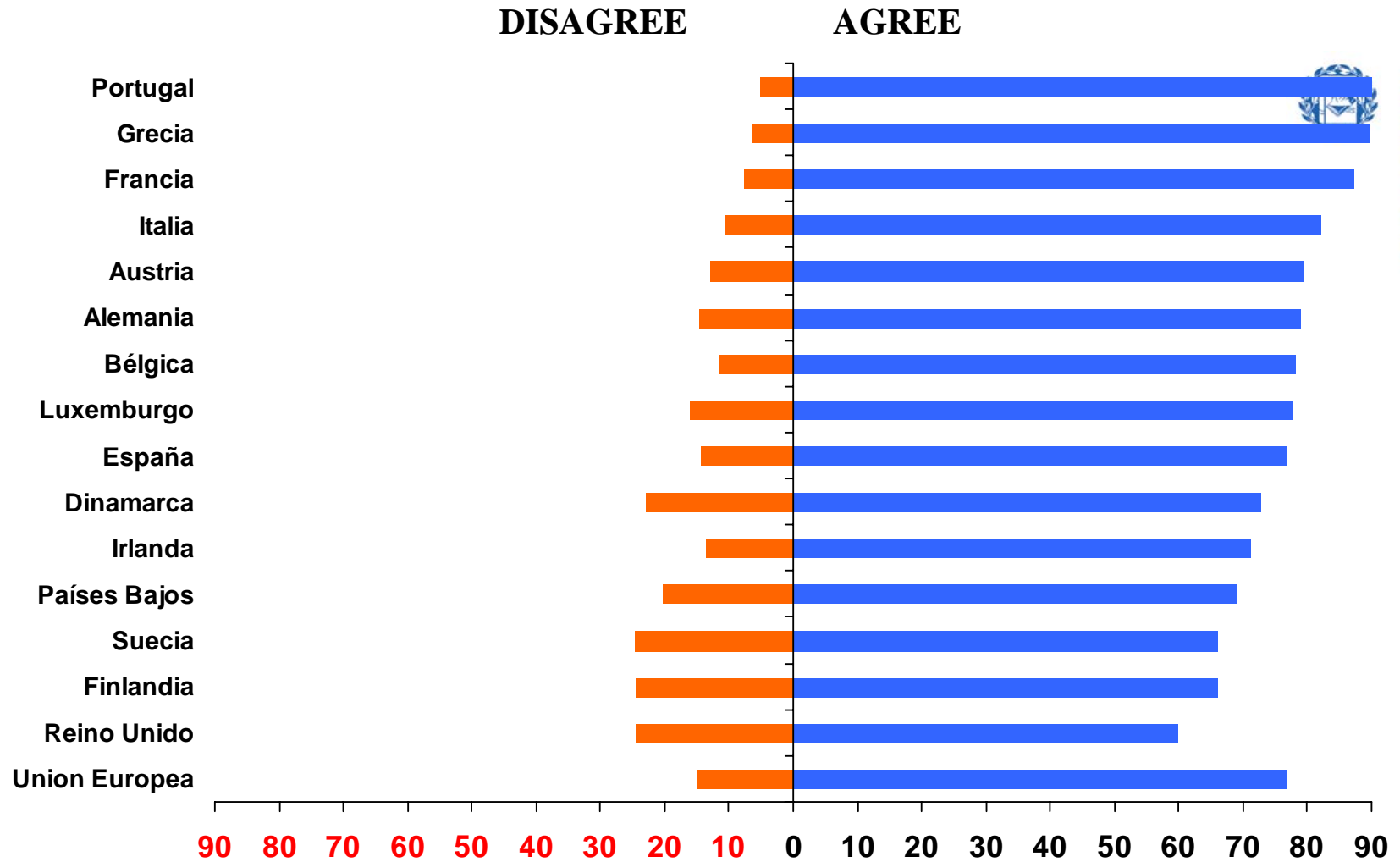
❑ Conventional Wisdom: Aging – by changing the ratio between Workers and Retirees – may undermine the financial sustainability of PAYG systems

❑ Problem: Systems will have to be Reformed. Possible measures – higher contribution rates, lower pension benefits, postponing retirement, partial funding – differ in how the costs of the reform are distributed across generations.

A Look at Preferences in Europe: Do Pensions Matter?

Public Resources should be Shifted from other Policies towards Pension

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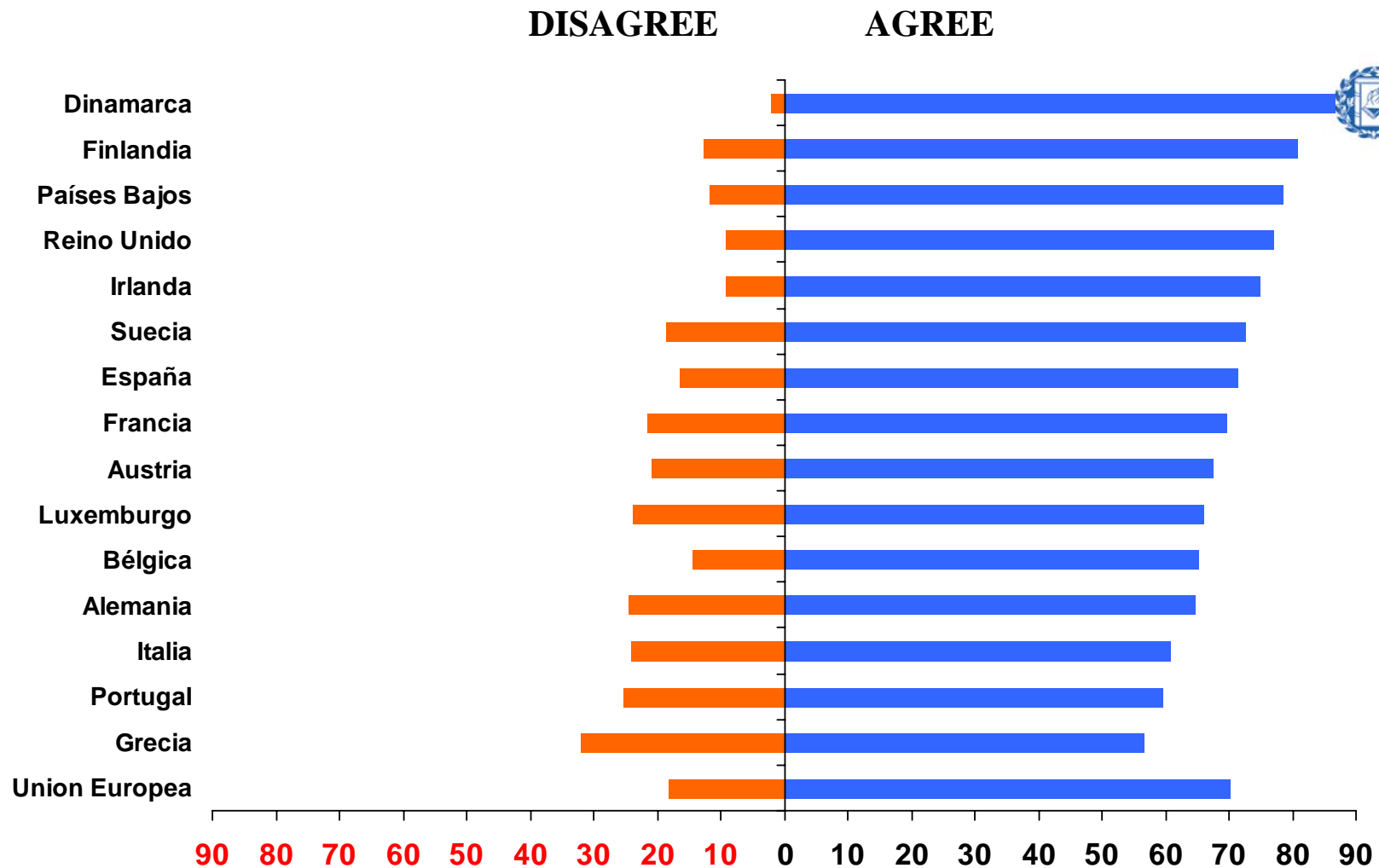


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A Look at Preferences in Europe: Higher Taxes?

Current Pension Levels Should be Maintained even if this Means Raising Taxes or Contributions

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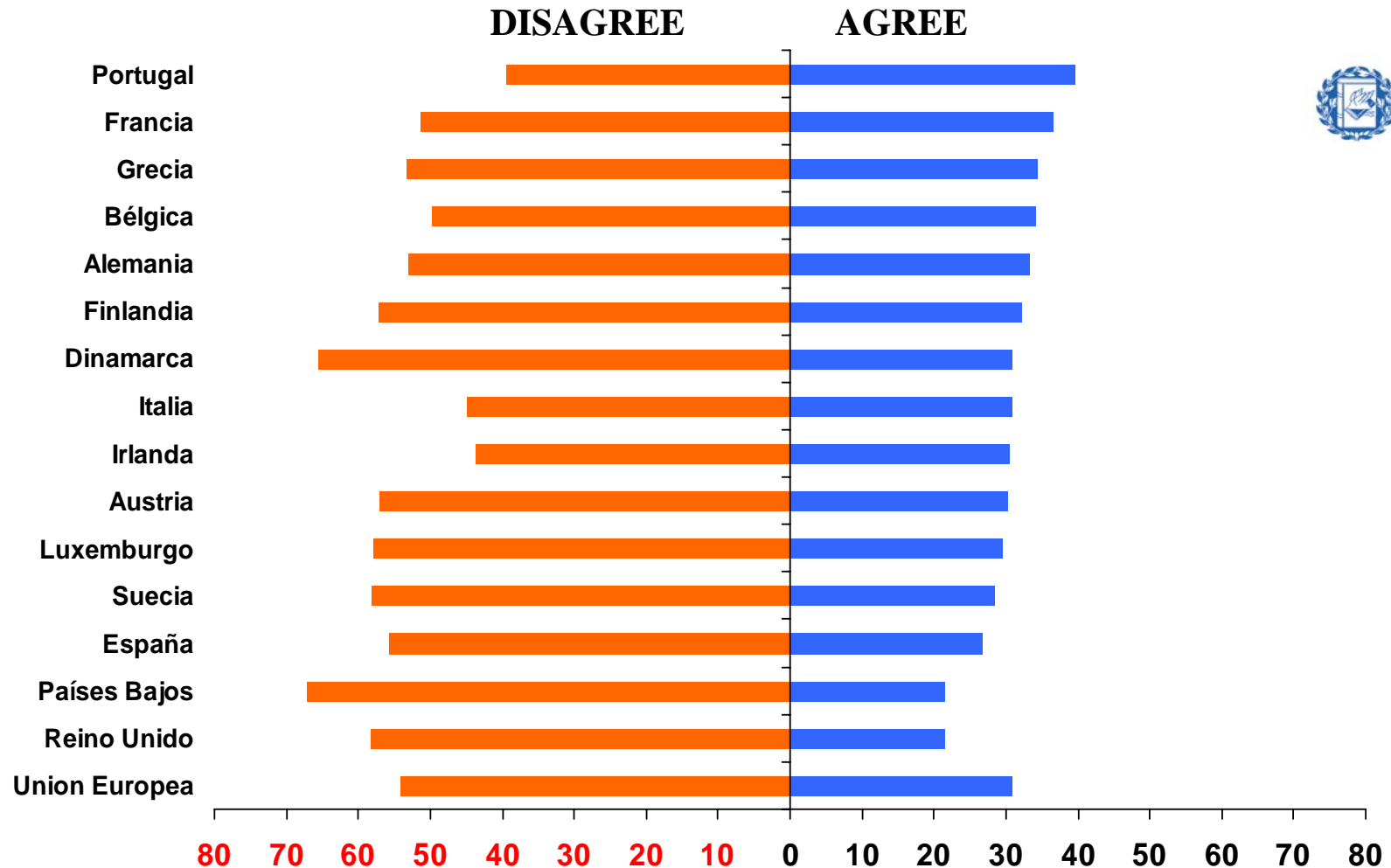


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A Look at Preferences in Europe: Lower Benefits?

Current Taxes or Contributions Should NOT be Increased even if this Means Lower Pension Levels

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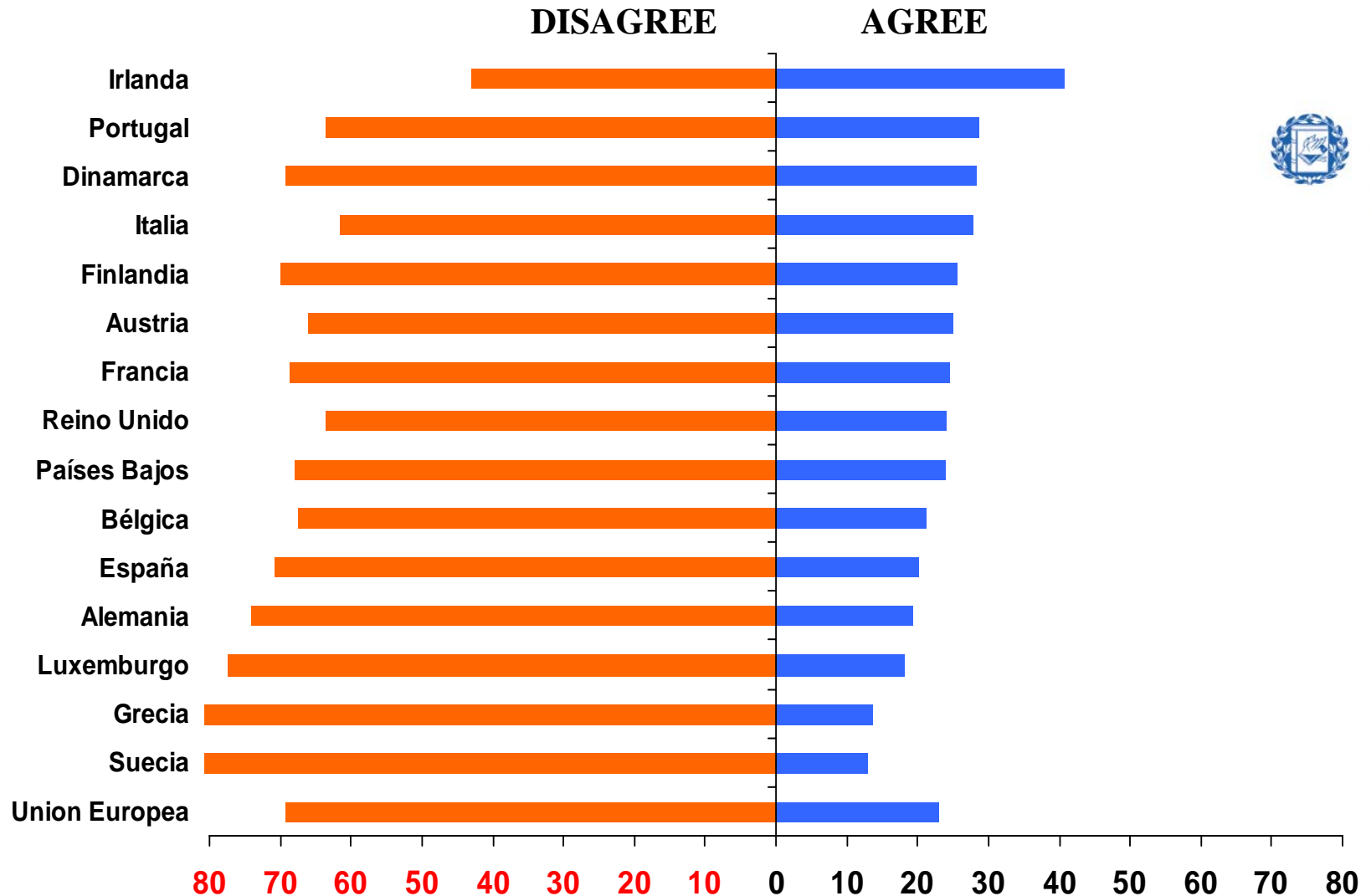


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A Look at Preferences in Europe: Work More?

Retirement Age should increase so people work more and enjoy less old age leisure

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This book's perspective

❑ Conventional Wisdom: Aging – by changing the ratio between Workers and Retirees – may undermine the financial sustainability of PAYG systems

❑ Problem: Systems will have to be Reformed. Possible measures – higher contribution rates, lower pension benefits, postponing retirement, partial funding – differ in how the costs of the reform are distributed across generations.

❑ This book's perspective: the political process will have to reconcile the opposite interests of subsequent generations.

Literature on Political Economics of Social Security

Political Economy Models of Social Security: Galasso - Profeta (EJPE 01), Persson-Tabellini (2000)

Intergenerational Component: Browning (EI 75), Cooley and Soares (JPE 99), Galasso (RED 99)

Intragenerational Component: Tabellini (NBER 90, SJE 00), Casamatta, Cremer, Pestieau (SJE 00)

General Equilibrium Component: Meltzer and Richard (AER87), C&S (JPE 99), G (RED 99), Boldrin and Rustichini (RED 00)

Early Retirement: Gruber and Wise, Conde-Galasso, Casamatta, Pestieau et al., Disney

Implicit Contract (Sub-game Perfection): Hammond 75, Sjoblom (PC1985), C&S (JPE 99), G (RED 99), B&R (RED 00)

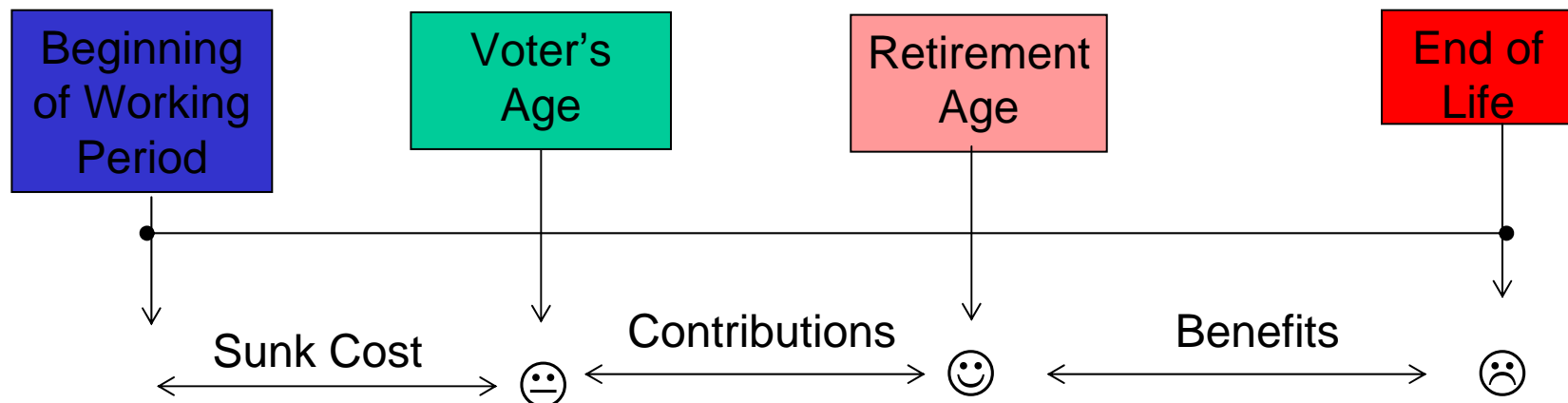


Key Issue: Political Sustainability

- Political Sustainability: Existence of a majority of the voters in favor of the existing social security system
- How do individuals (Voters) evaluate social security? They compare returns from the social security system and from alternative assets



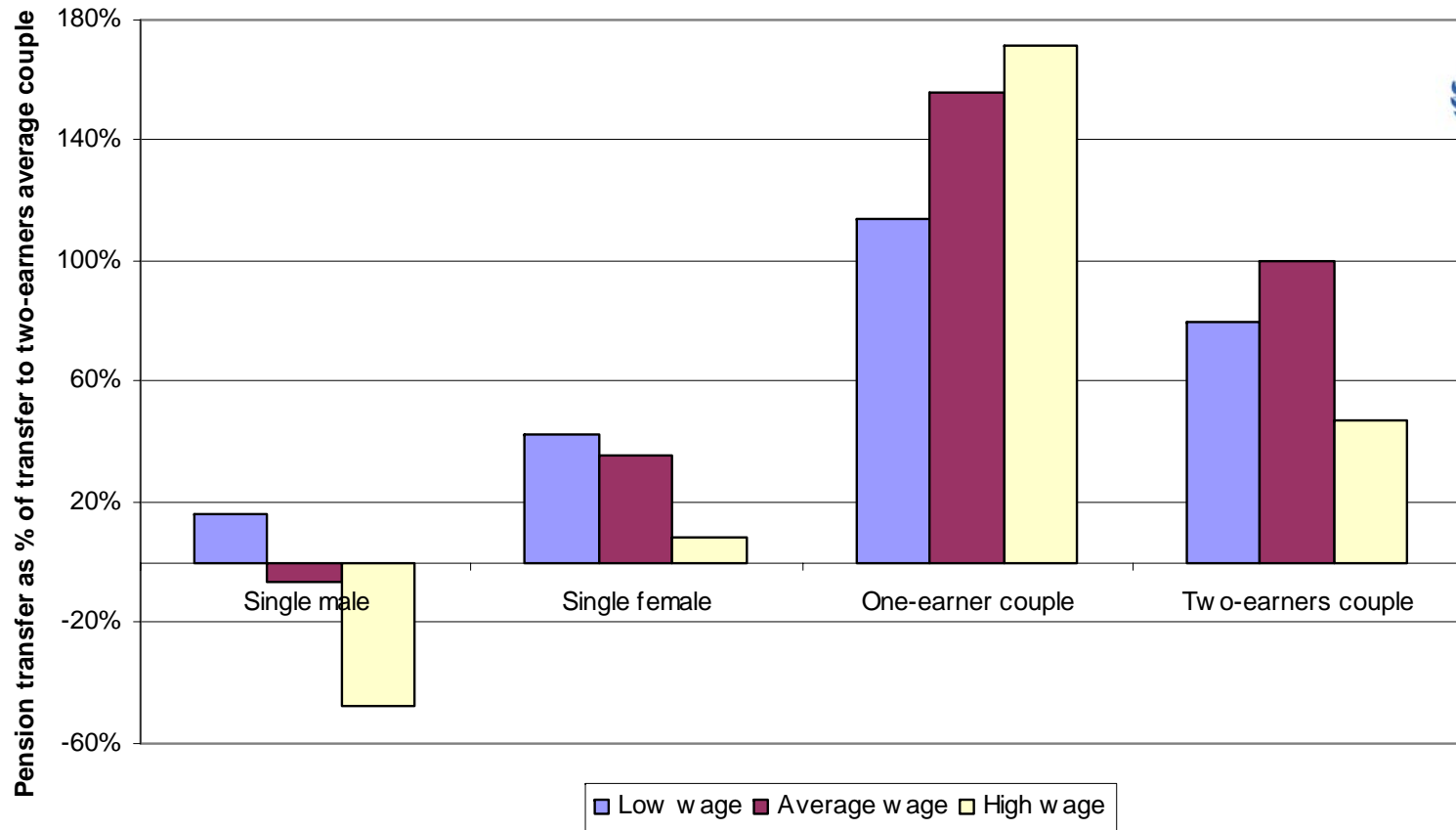
Voter's Time Horizon



Determinants of Political Sustainability

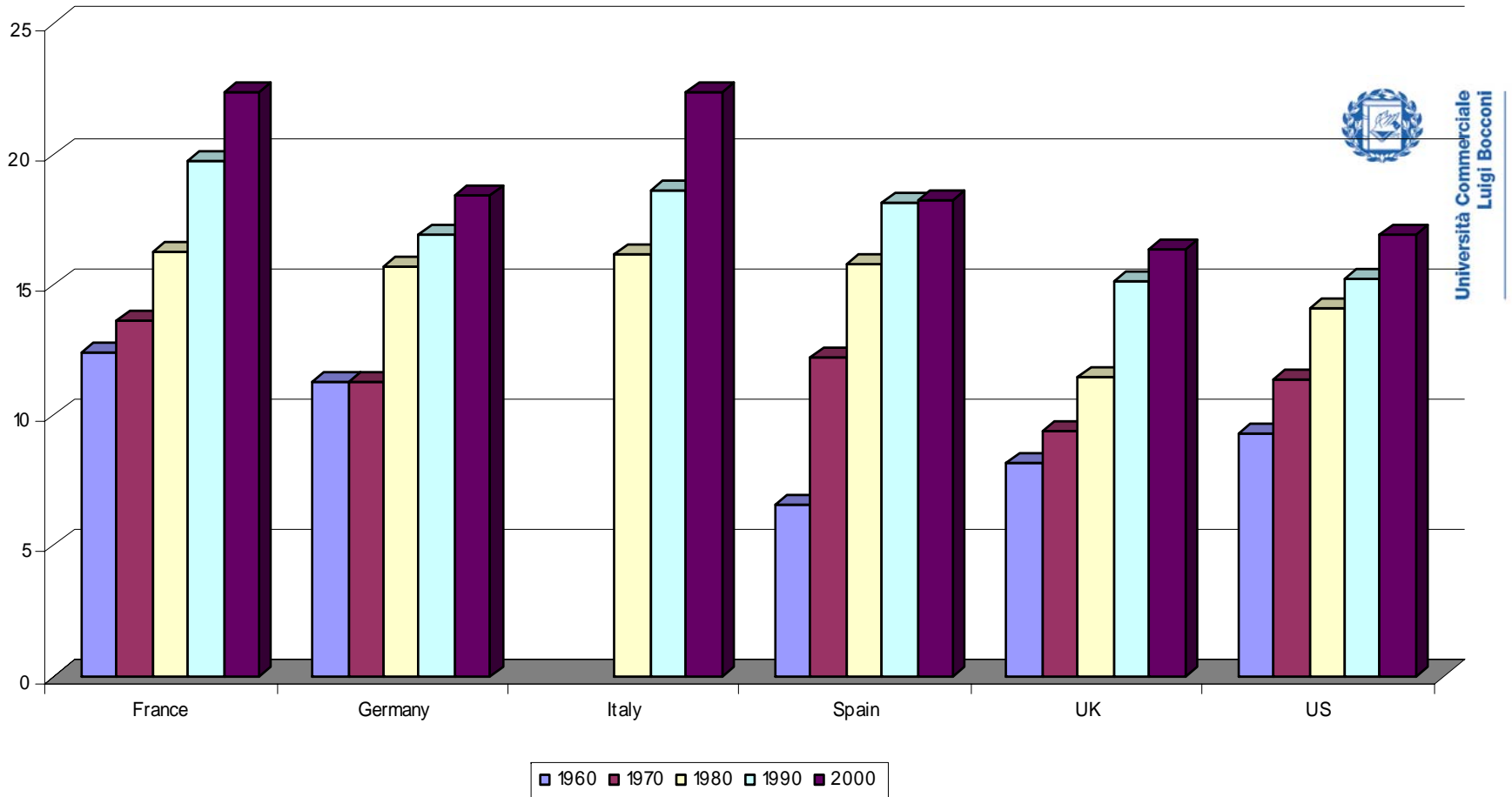
- Average Return on social security
- Age: Elderly versus Young
- Degree of Redistribution of the system: Low versus High Income Workers
- Family Ties: living with the family versus alone
- Retirement Age: “Redefining Age”

Degree of Redistribution



Enjoying Retirement

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Politico-Economic Effects of Aging

Aging induces (at least) two crucial effects:

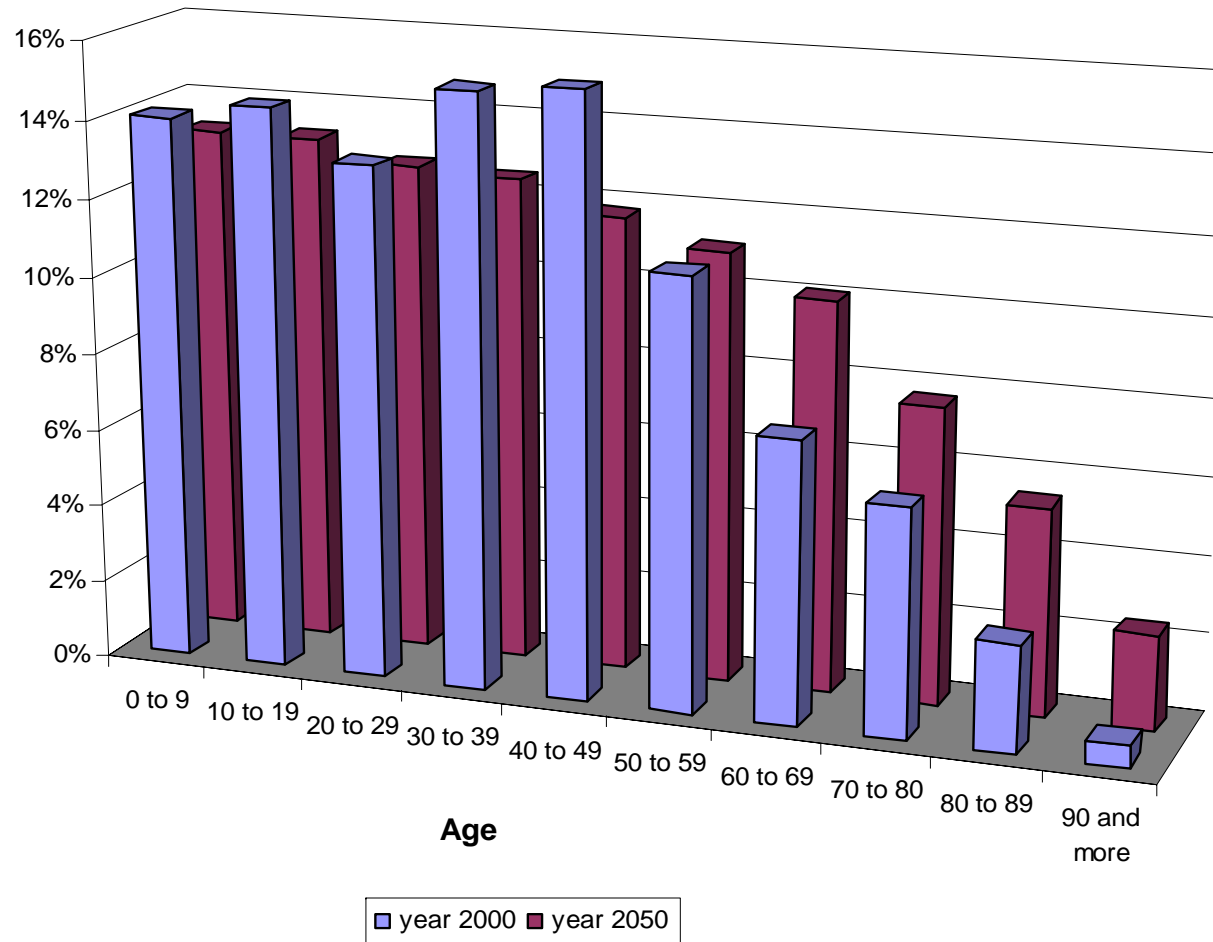
- ❑ Economic: An increase in the Dependency Ratio reduces the average long run return of the system
→ Since pensions represent a saving device, Portfolio Rebalancing: agents *reduce* the size of pension system.
- ❑ Political: Aging Increases the Political Weight of the Elderly
→ Generates “political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

Quantifying these Effects

- ❑ Economic effect may be measured by the dependency ratio
- ❑ Political effect by the median age among the voters

Country	Old Age Dependency Ratio		Effective Retirement Age	Median Age among Voters	
	2000	2050	2000	2000	2050
France	25.9	48.8	58	47	56
Germany	25.0	51.5	61	46	55
Italy	27.9	64.5	59	44	56
Spain	26.0	63.4	61	44	57
UK	25.3	44.3	63	45	53
US	20.5	36.3	63	47	53

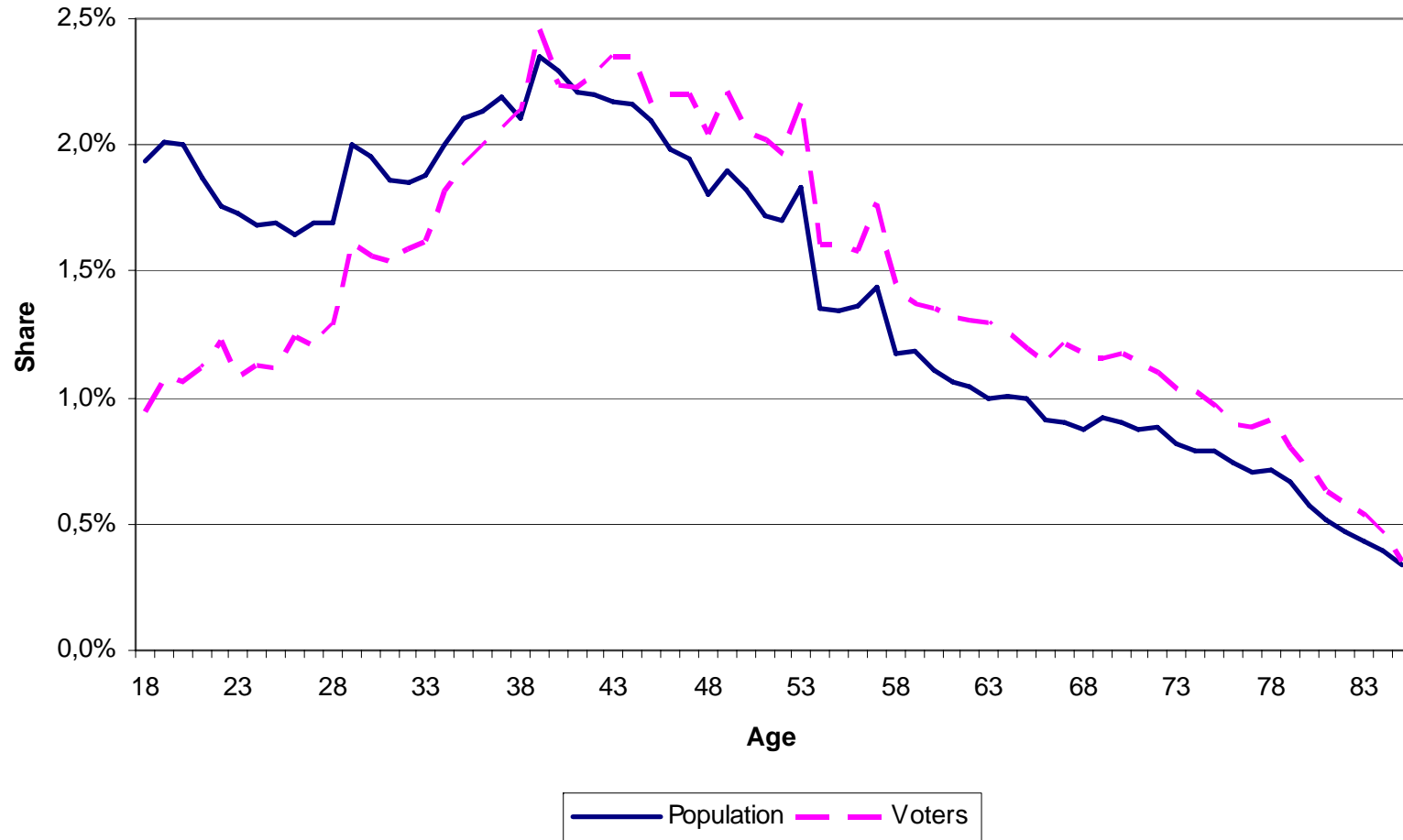
Aging in the US



Median age among voters: 47 years in 2000 and 53 in 2050

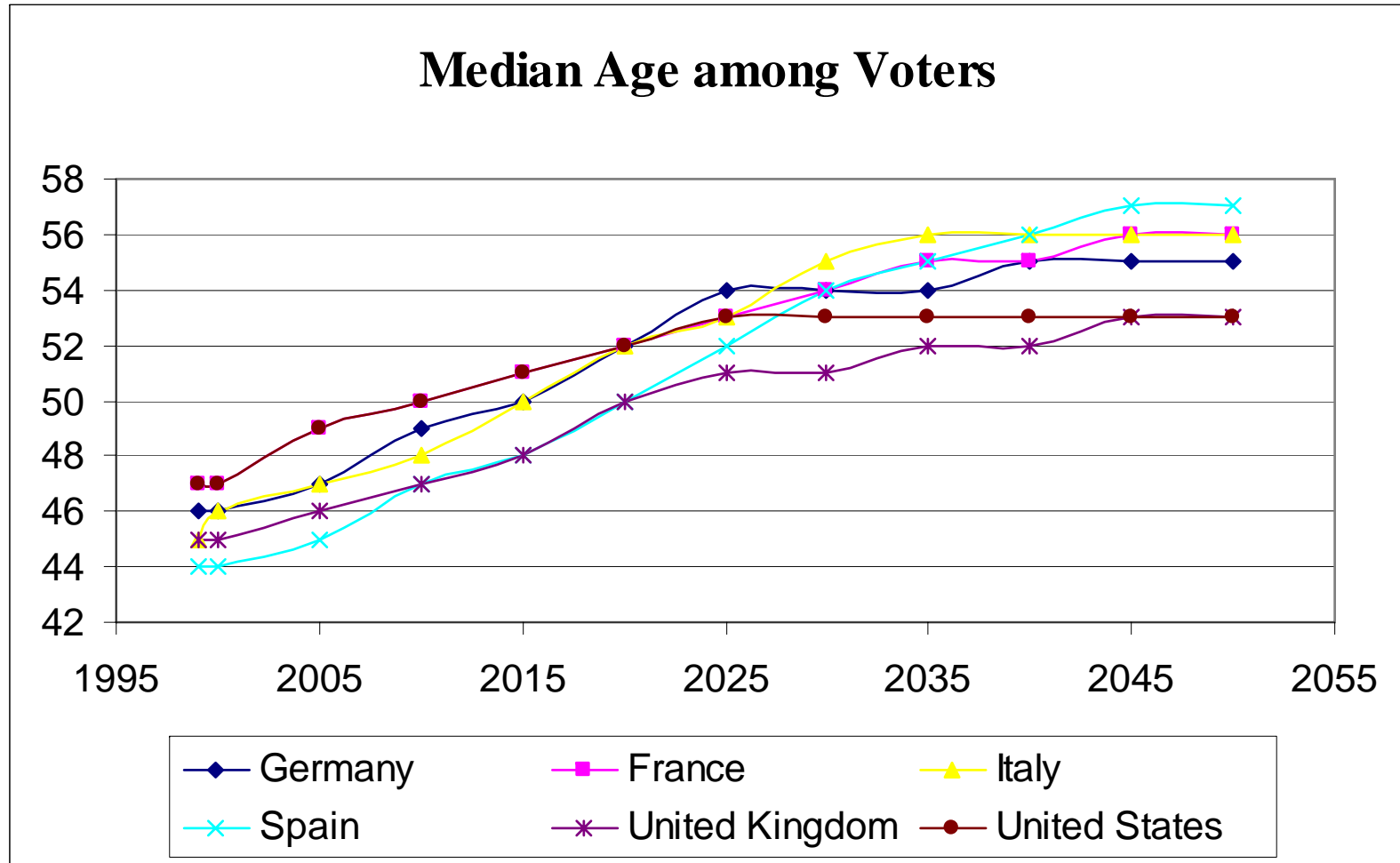
US 2000: Grey Panthers

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Aging and Politics



How to Analyze Aging and Social Security

- ❑ Introduce a general equilibrium politico-economic model, calibrated to the economic, demographic and political aspects and to the social security systems in the six countries. Agents take:
 - Economic decisions: labor supply and savings; and
 - Political decisions: voting over the pension system

- ❑ Simulate the expected economic, demographic and political for 2050 and assess the political sustainability of the social security systems.

Economic Environment

- 77-Generations OLG Model: Agents may Live from 18 to 95 and face age-specific probability of survival
- Agents may also differ in their education, income, longevity and working history
- CES Utility Function
- CD Production Function
- Demographic Structure:
 - Survival Probability;
 - Dependency Ratio (Growth Rate of Population)
- Social Security System

Social Security System

Exogenous key elements:

- Benefits' formula (DB or DC, earning periods)
- Effective Retirement Age;
- Pension Indexation.

Endogenous key elements (to be determined in the political arena):

- Contribution Rates; and
- Replacement Rates (since we focus on the equilibrium tax rate that equalizes total contributions to total pensions)

Political System

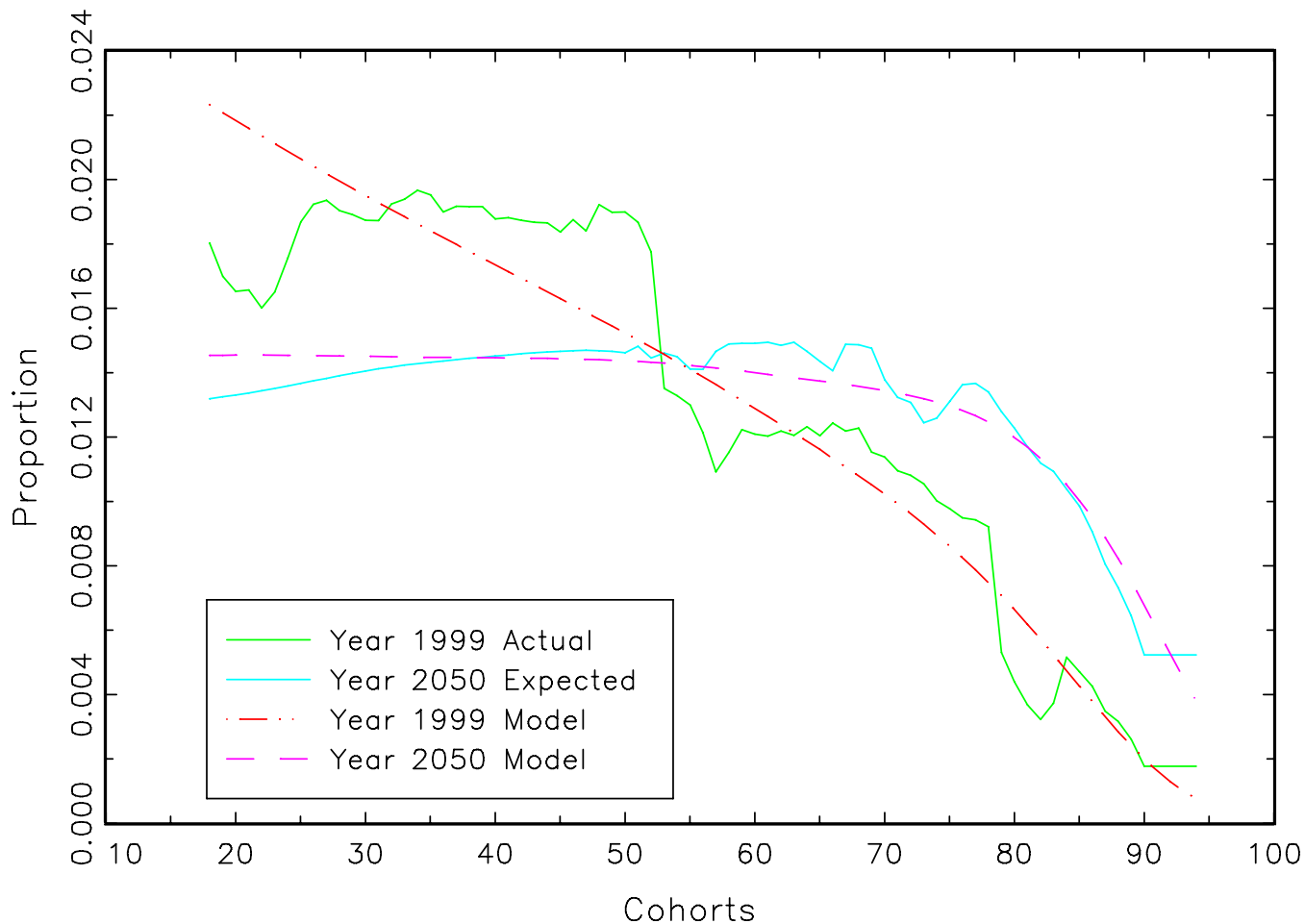
- Every Voter Indicates her most preferred Social Security Tax Rate, given the other characteristics of the social security system:
 - retirement age,
 - pension benefits calculation (DB, DC)
 - pension benefits indexation (inflation, wage growth)
- Social Security Tax Rate determines
 - the agent's flow of remaining contributions to the system
 - the pensions' generosity
- Implicit Contract among Generations (Sub-game perfect equilibria) (Hammond 1975, Sjoblom 1984, CS99, BR2000)

Calibration Strategy

- Demographics:
 - Survival Probability;
 - Population growth to match dependency ratio (EC AWG);
- Economics:
 - Employment rate by age (ECHP)
 - Capital share of income
 - Productivity growth rates (EC AWG)
- Pensions:
 - Effective retirement age (ECHP,ILO)
 - Equilibrium contribution rate
- Politics:
 - Median age among voters

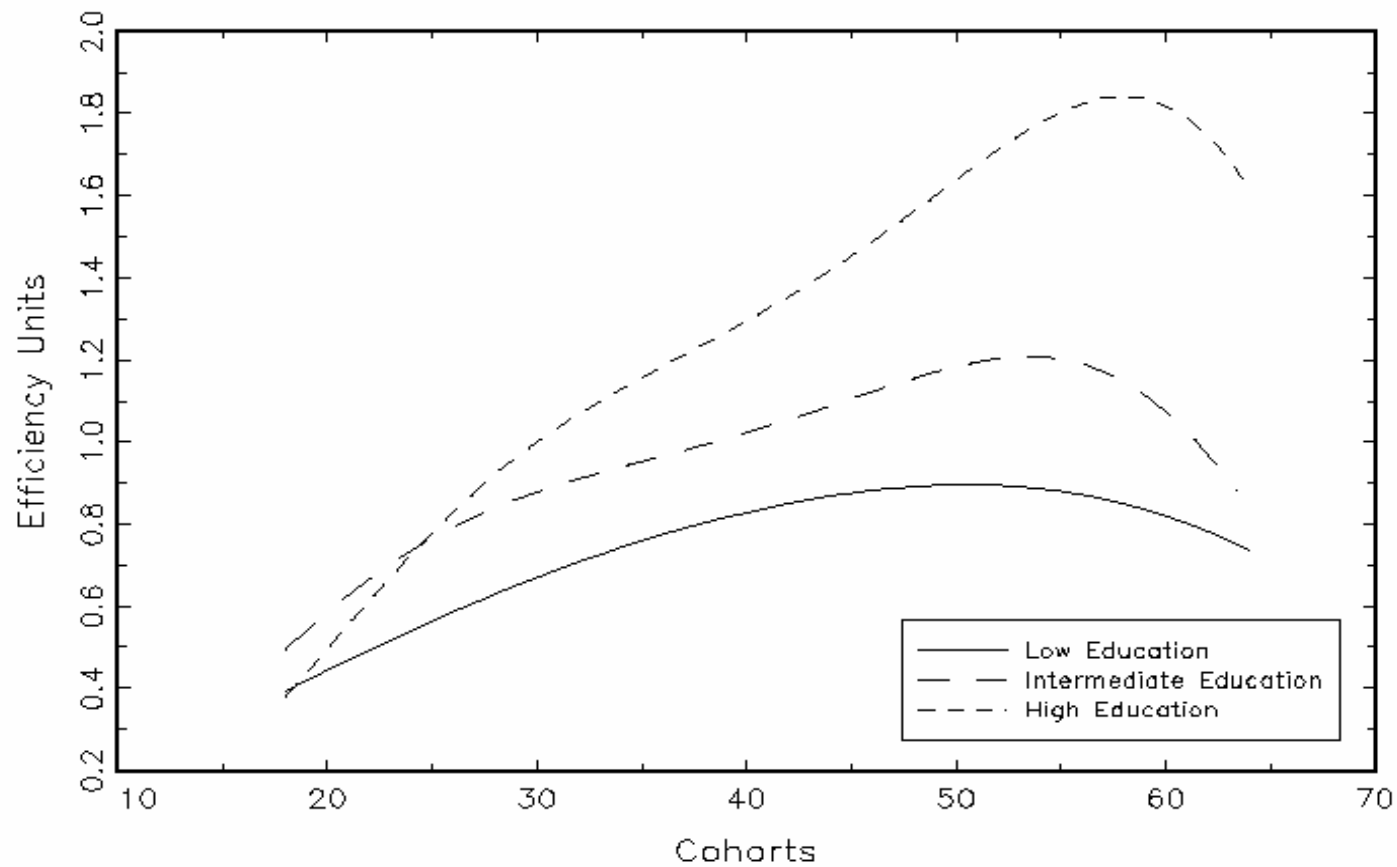
Demographic Profiles

France: Population Profile



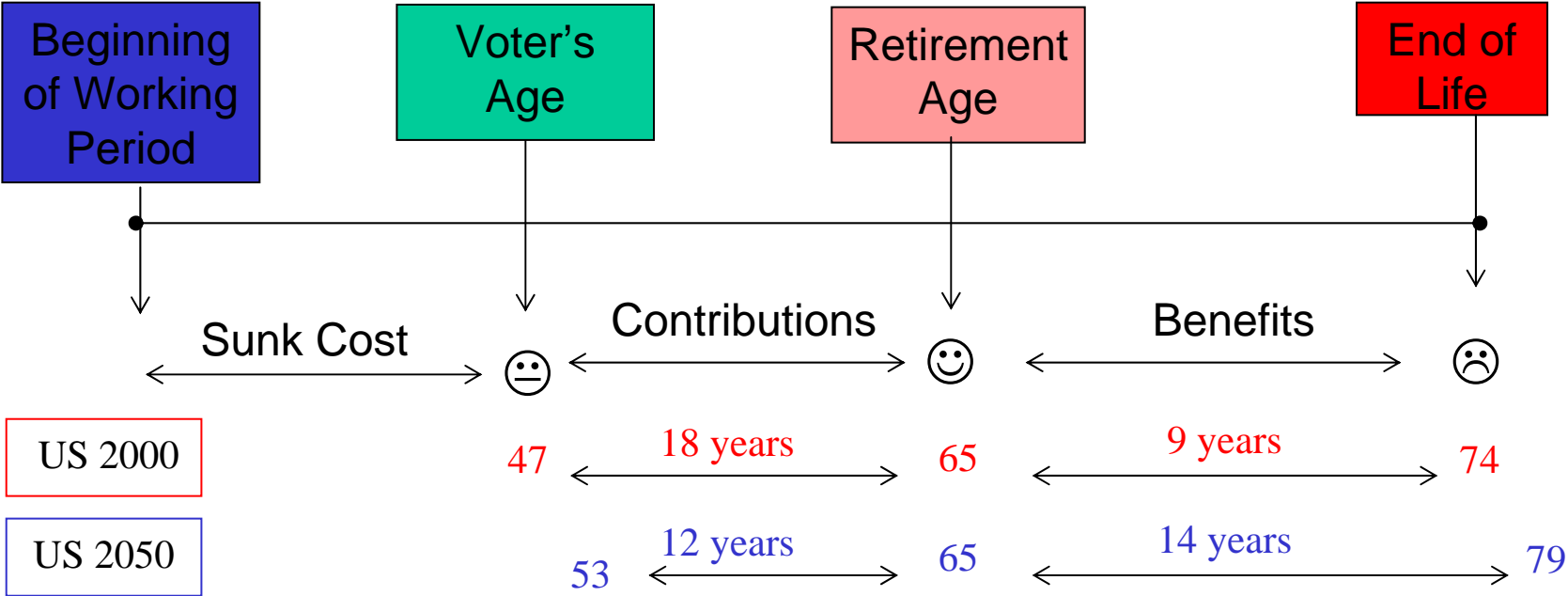
Wage Profiles

Figure 3: Efficiency Unit Profile by Age and Education



Political Decisions and Aging

Voter's Time Horizon



But the average return on social security drops!!

US: Simulations' Results

	Effective Retirement Age	Social Security Contribution Rate	Replacement Rate* (Low)	Replacement Rate* (Medium)	Replacement Rate* (High)
2000	63	9.7%	37.7%	34.4%	32.9%
2050	63	23.4%	62.3%	56.7%	54.3%
2050	64	21.7%	60.5%	55.2%	53.0%
2050	65	20.1%	58.8%	53.7%	51.7%
2050	66	18.5%	56.8%	51.9%	50.1%
2050	67	17.1%	55.2%	50.6%	48.9%



US: An Assessment

- ❑ Political aspect dominates: Aging induces the contribution rates and generosity (replacement rates) to increase .
- ❑ Policy Implications: Higher actual retirement ages are very effective in limiting the increase of the size



US: A look at the Private Sector

Composition of retiree's income

		Actual data	Model's predictions	
		90s	2000	2050
<i>US</i>	Pensions	35.4%	44.4%	67.3%
	Investments and private transfers	38.2%	55.6%	32.7%
	Earnings	26.4%	--	--



Simulations' Results: Direct Impact of Aging

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		Median Voter's Age	Effective Retirement Age	Social Security Contribution Rate	Replacement Rate
France	2000	47	58	22.4%	49.2%
	2050	56	58	31.3%	41.9%
	2050	56	65	19.7%	47.9%
Germany	2000	46	61	23.8%	68.3%
	2050	55	61	37.7%	55.4%
	2050	55	65	32.6%	81.2%
Italy	2000	44	58	38.0%	73.6%
	2050	56	58	50.0%	55.5%
	2050	56	65	38.0%	74.2%
Spain	2000	44	62	21.3%	67.9%
	2050	57	62	45.5%	64.6%
	2050	57	65	40.7%	77.3%
UK	2000	45	63	14.5%	75.8%
	2050	53	63	33.2%	95.2%
	2050	53	65	31.1%	114.3%
US	2000	47	63	9.7%	41.9%
	2050	53	63	21.6%	55.7%
	2050	53	65	18.3%	53.9%



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Simulations' Results: Employment and Tax Distortion

		Median Voter's Age	Effective Retirement Age	Social Security Contribution Rate	Replacement Rate	Employment Rate
France	2000	47	58	22.4%	51.8%	72.4%
	2050	56	58	39.0%	53.6%	72.2%
	2050	56	65	27.2%	61.6%	71.7%
Germany	2000	46	61	23.8%	67.6%	81.7%
	2050	55	61	35.7%	50.0%	81.9%
	2050	55	65	29.2%	55.4%	81.1%
Italy	2000	44	58	38.0%	75.7%	62.6%
	2050	56	58	46.2%	48.4%	64.3%
	2050	56	65	35.5%	64.0%	62.2%
Spain	2000	44	62	21.3%	89.7%	60.3%
	2050	57	62	37.5%	65.2%	60.4%
	2050	57	65	33.8%	89.8%	58.7%
UK	2000	45	63	14.5%	74.8%	73.4%
	2050	53	63	31.7%	91.6%	72.5%
	2050	53	65	29.0%	104.2%	71.9%
US	2000	47	63	9.7%	46.4%	80.5%
	2050	53	63	20.7%	57.3%	81.2%
	2050	53	65	18.7%	60.0%	80.8%

Political aspect still dominates: with constant retirement contribution rates increase everywhere

Policy Implications: Higher effective retirement age may *reduce* the size of the system (Italy) while increasing its generosity

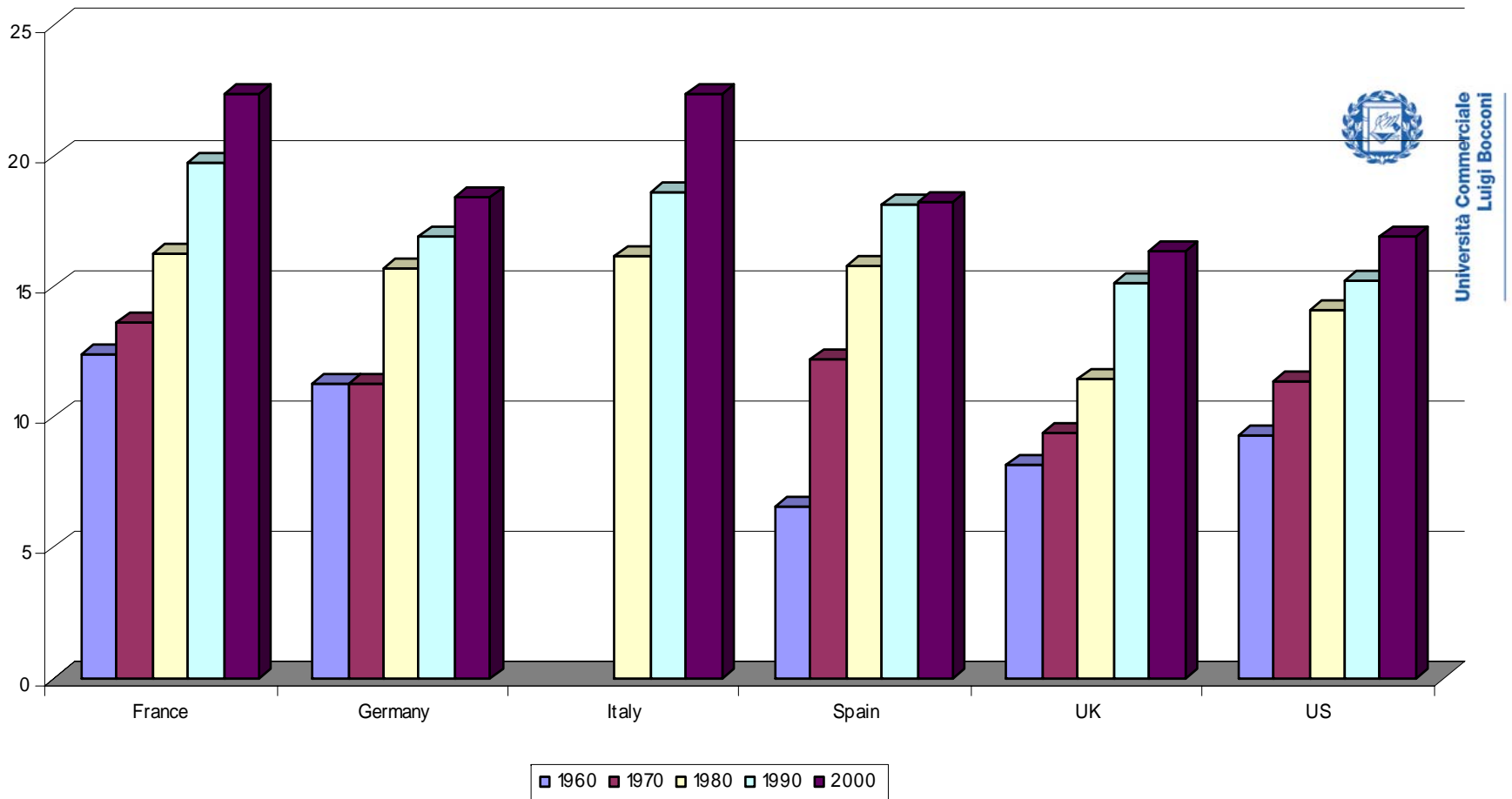
Employment Rates tilts towards old age while decreasing in youth.

The Main Lessons

- ❑ Aging affects the financial as well as the *political sustainability* of PAYG pension systems.
- ❑ *Political effect dominates*: the size of the social security system will increase in all countries, albeit with differences.
- ❑ Country specific characteristics (degree of redistribution, family ties) may matter in shaping voting coalitions, and hence the success of policy reforms.
- ❑ Policy implication: an increase in the *effective retirement age* decreases the size of the system while (often) increasing its generosity
- ❑ Next Political Issue: Will voters be willing to support an increase in the effective retirement age?

A Crucial Issue: Europeans Enjoy Retirement

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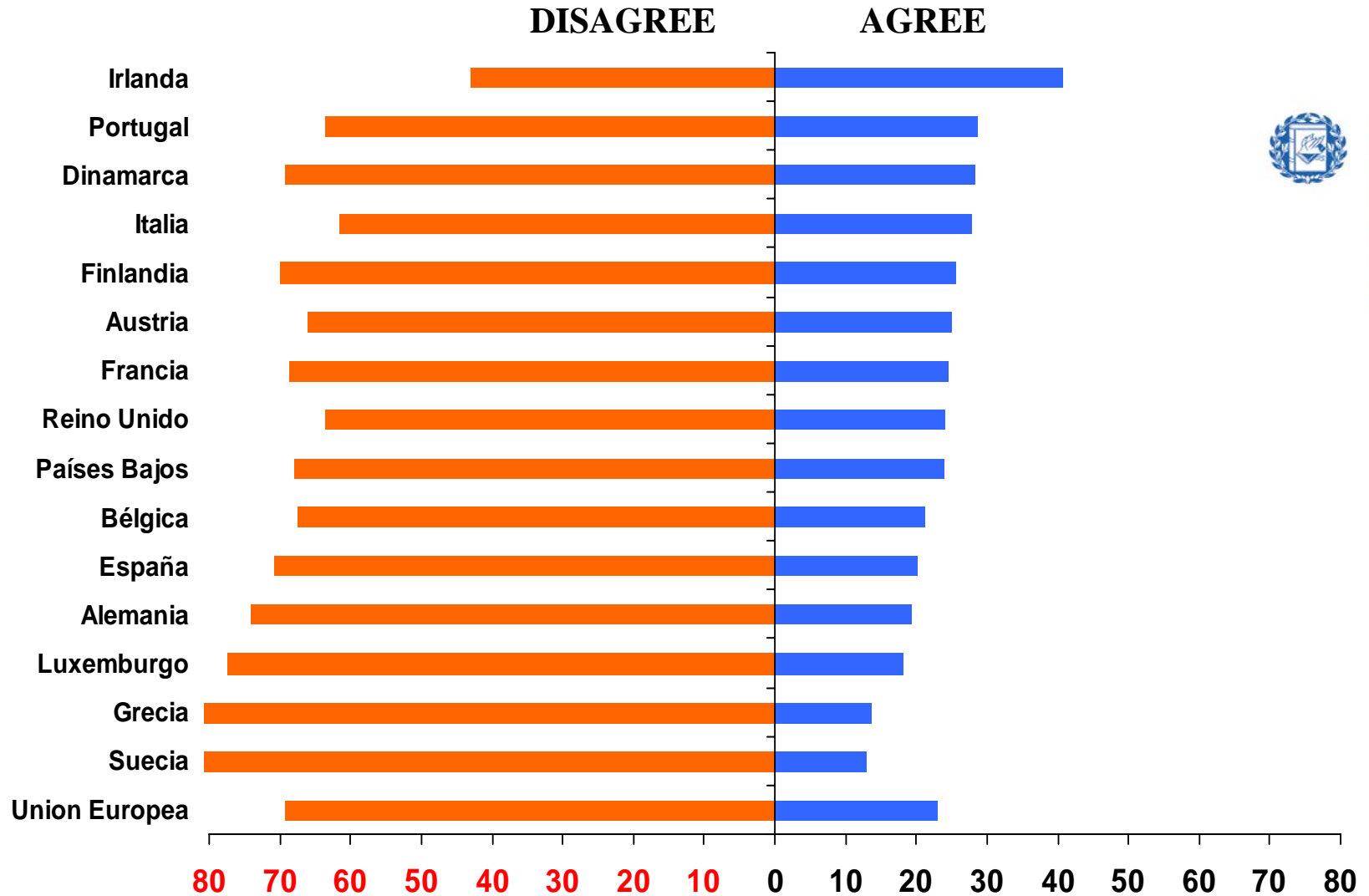


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And are not ready it Give up!

Retirement Age should increase so people work more and enjoy less old age leisure

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Addressing the Political Feasibility of Postponing Retirement

- Individuals (Voters) determine:
 - Social security contribution rate
 - Effective retirement age (for everyone!)

- Bi-dimensional Policy Space:
 - Condorcet cycles may arise
 - Median voter model may not apply

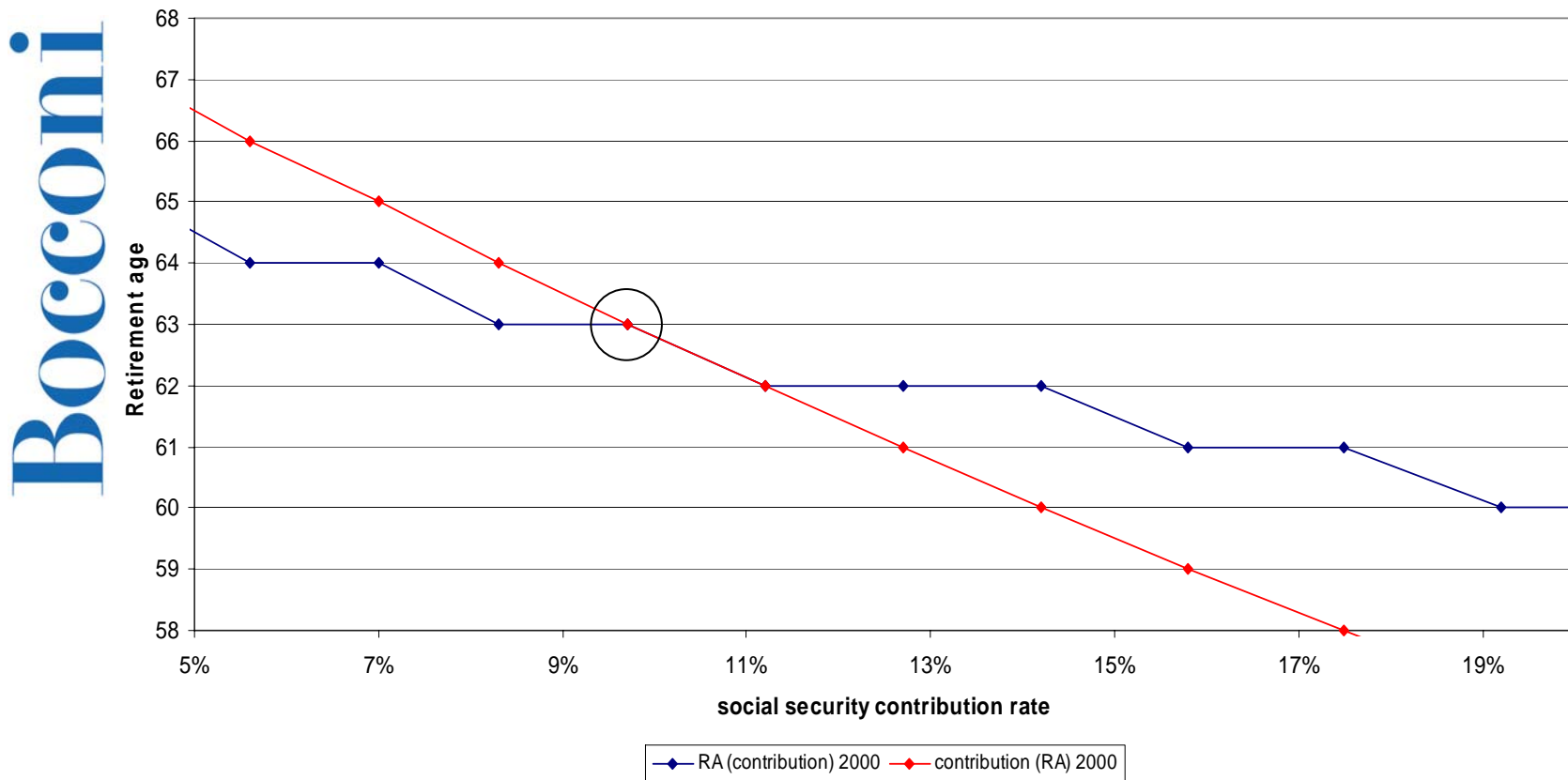
- Issue-by-issue voting (Shepsle, 1979):
 - Voting on social security contributions for a given retirement age
 - Voting on retirement age for a given social security contribution rate
 - Equilibrium at the intersection of these “reaction functions”

Determinants of Retirement Age Decision

- Voting on retirement age (for everyone!) for a given social security contribution rate depends on
 1. Individual labor-leisure trade-off due to retirement
 2. Impact of retirement age on pension benefits via dependency ratio: given the contribution rate, higher retirement age increases pension benefits
 3. General equilibrium effects on wages and returns
- Individual's preferences cannot be ordered according to individuals' age
- Ambiguous "reaction function": higher contributions (and pensions) create a substitution (lowering RA) and an income effect (increasing RA)

US 2000: Determining Contributions and Retirement

Political-economic equilibria in the US



How does Aging affect individuals vote?

- Voting on social security contributions, given retirement age:
 - Economic Effect (lower IRR): lower contributions
 - Political Effect (older median voter): higher contributions
 - Overall result is ambiguous

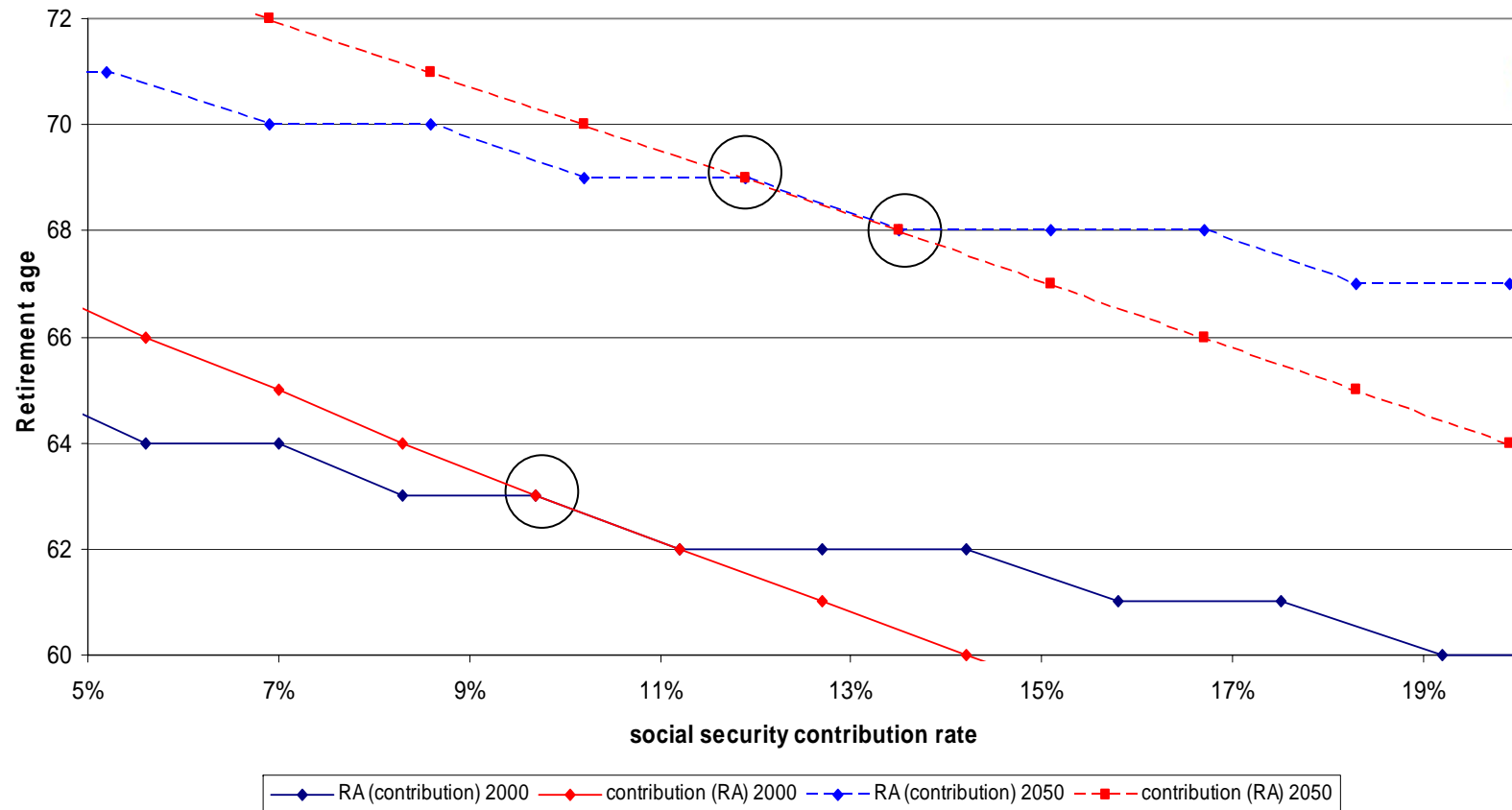


Voting on retirement age, given social security contribution

- Negative Income effect: aging reduces returns from social security. Retirement Age increases
- Negative Substitution effect: for a given contribution rate, aging reduces pension benefit. Retirement Age increases
- Overall result: Retirement Age increases

US 2050: Political Equilibria

Figure 6: Political-economic equilibria in the US



The Political Future of Social Security and Retirement

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		Age of the median voter over contribution rate	Effective retirement age	Social security contribution rate
France	2000	47	58	22.4%
	2050	56	67	27.1%
Italy	1992	44	58	38.0%
	2050	56	67	34.9%
UK	2000	45	63	14.5%
	2050	53	70	27.1%
US	2000	47	63	9.7%
	2050	53	68	13.5%
	2050	53	69	11.9%




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Postponing retirement: the political push of aging

- When voting over Retirement Age and Social Security Contribution Rates, the political economic equilibrium is associated with
 - Higher retirement age
 - Lower contribution (than in the one-dimensional simulations)
- WHY? Aging and the large social security systems make the individuals “poorer” and hence more willing to work longer years.

The Main Lessons

- ❑ Aging affects the *political sustainability* of PAYG pension systems leading to larger systems.
- ❑ Policy implication: an increase in the *effective retirement age* decreases the size of the system while increasing  its generosity
- ❑ Voters will be willing to support an increase in the effective retirement age. Why? with aging and large social security systems individuals will be “poorer” and will need to work longer years.
- ❑ Hence, less increase in social security contribution and higher retirement age (in 2050 in Italy retirement at 67 and contributions only at 34.9%)

Policy Implications: Delegating Pension Policy

- ❑ Our simulations suggest that – as population ages – politicians are less willing to undertake unpopular pension reforms.
- ❑ Even “intergenerationally fair” politicians favorable to reform the system may be constraint by their political accountability
- ❑ Delegation of pension policies to a super-national institution, not directly accountable to the voters, may soften these political constraints.
- ❑ A common European policy on pensions may help to shift the political cost of any reform decision onto the European institutions (EC), which may give a “voice” to future – yet to be born – generations.