

PUBLIC PENSION PROGRAM PROVISIONS: INDUCED RETIREMENT AND PROGRAM COST

by
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Based on Gruber-Wise project

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What's the problem?

- Promises can't keep
- Why?
 - Population aging and increasing life expectancy
 - Declining LFP of older workers
- Plan provision induce early retirement
 - Contributes to their own financial insolvency

Figure 1. Population 65+ to population 20 to 64

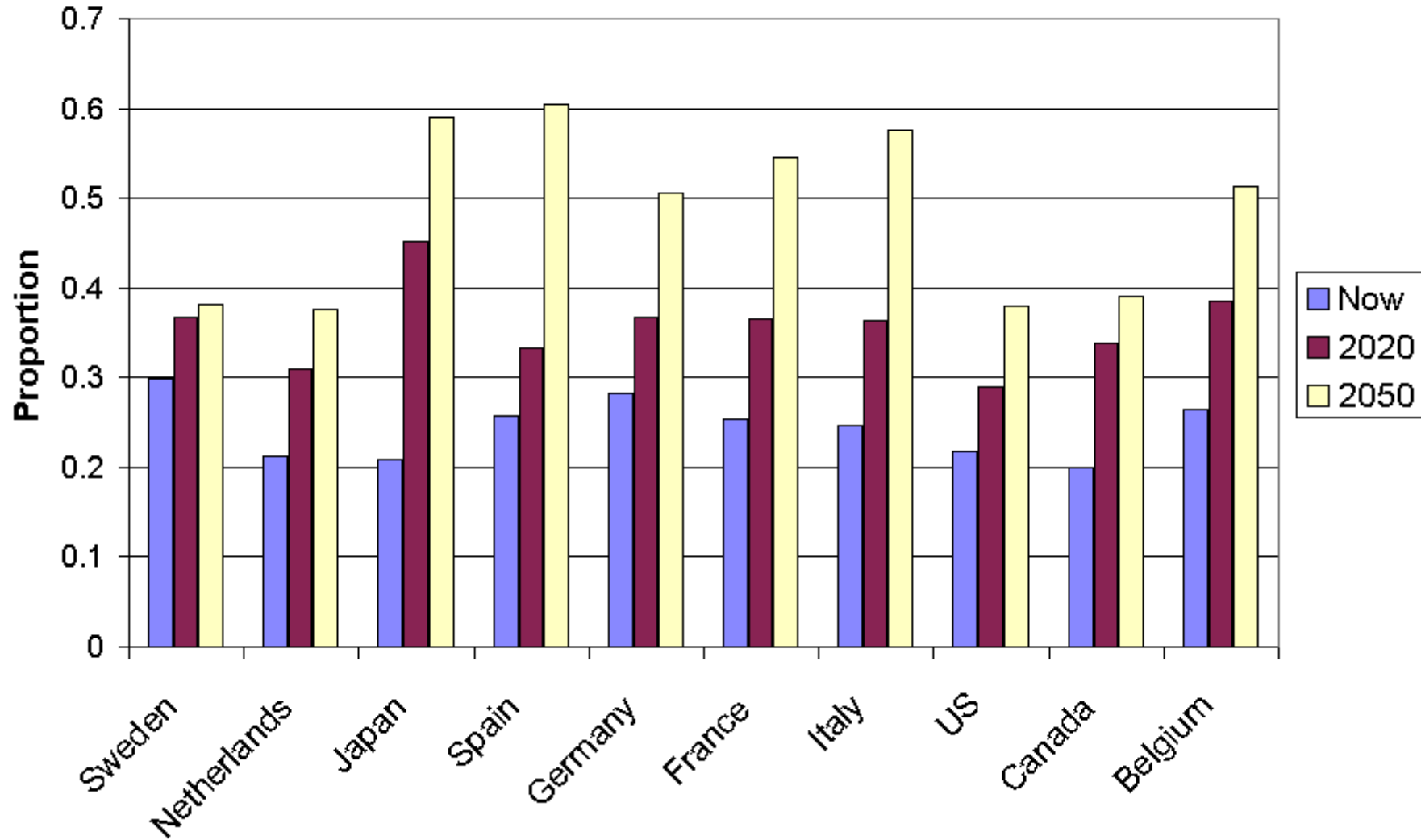


Figure 2a. LFP trends for men 60 to 64

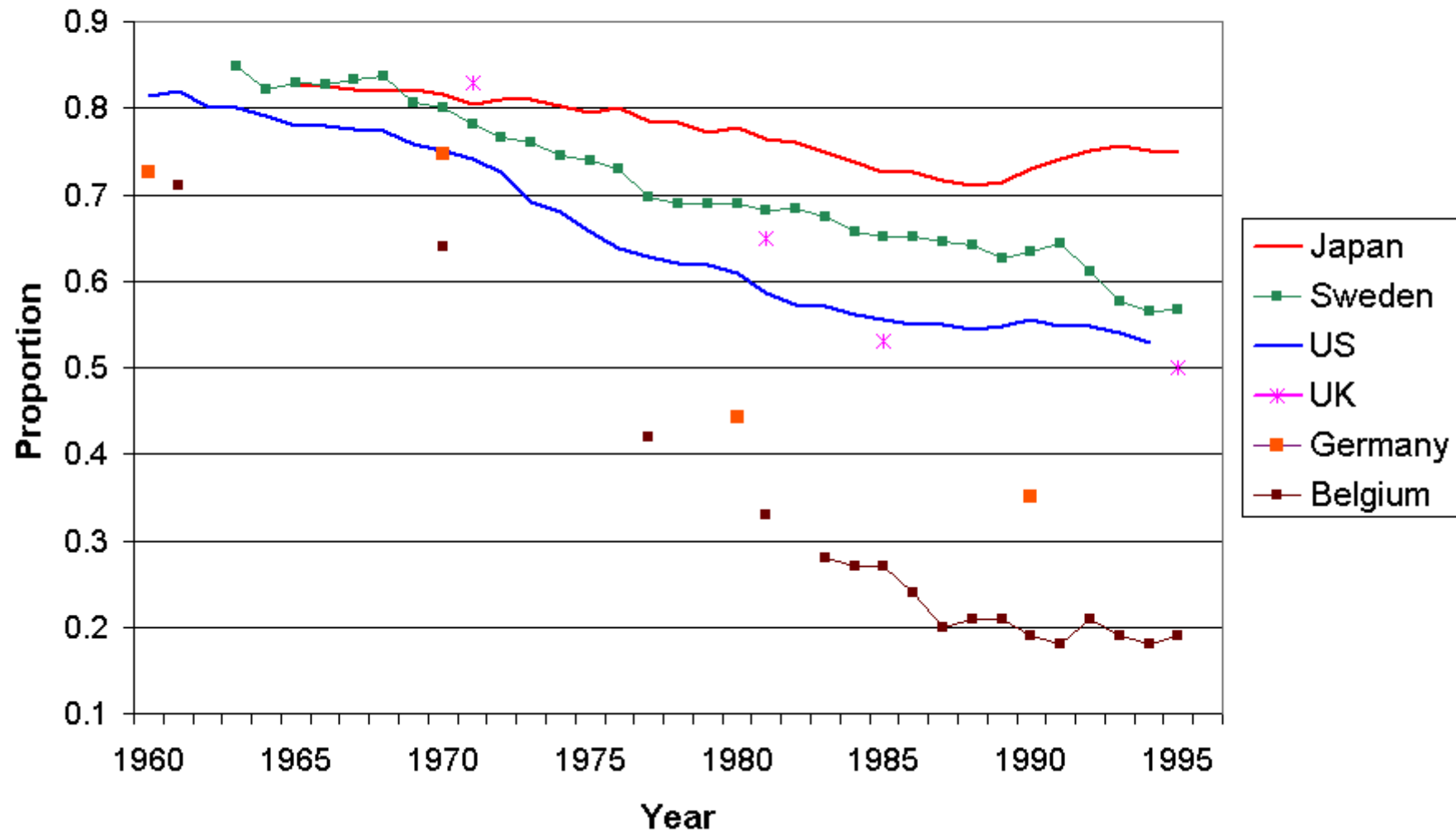
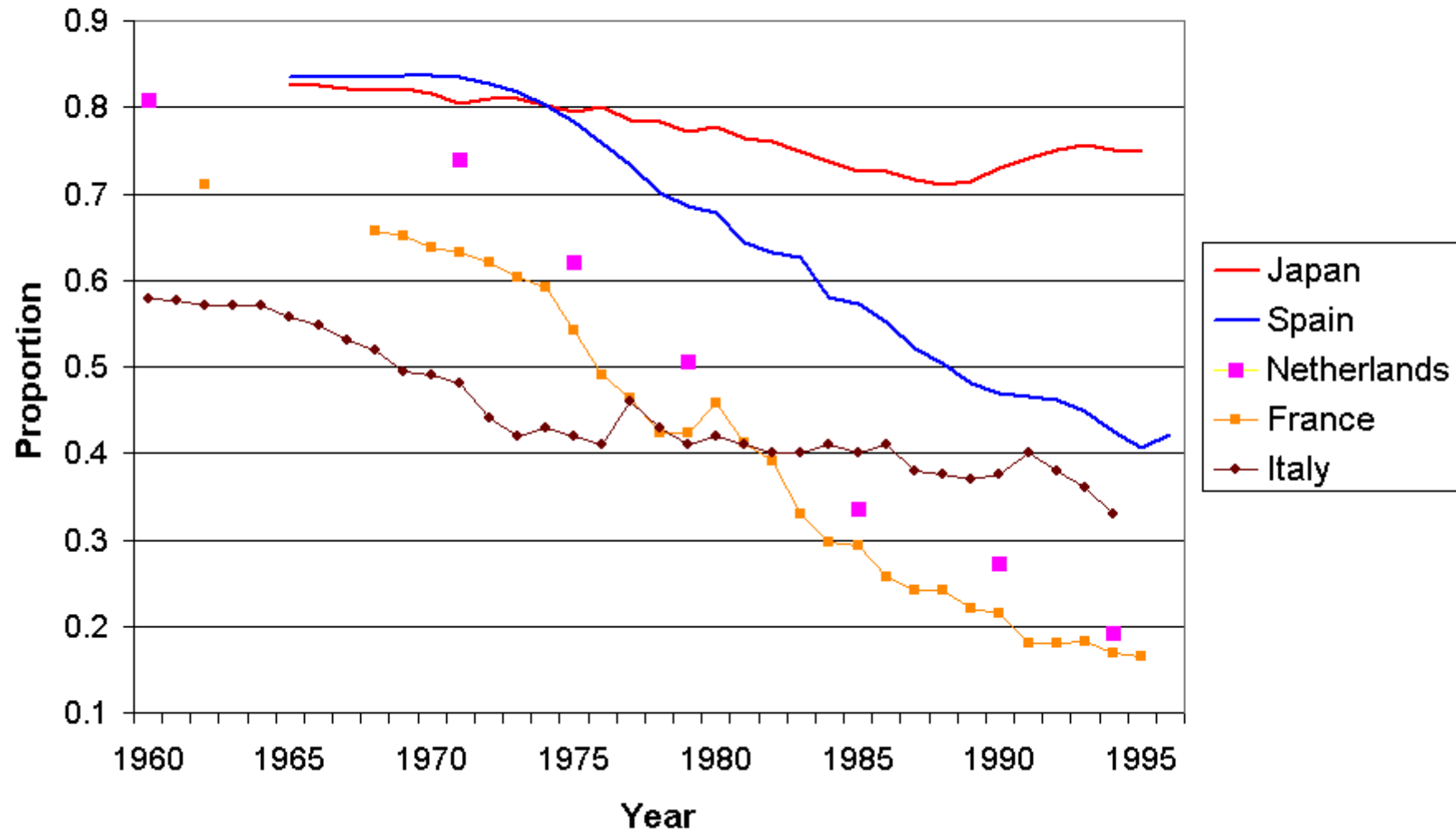
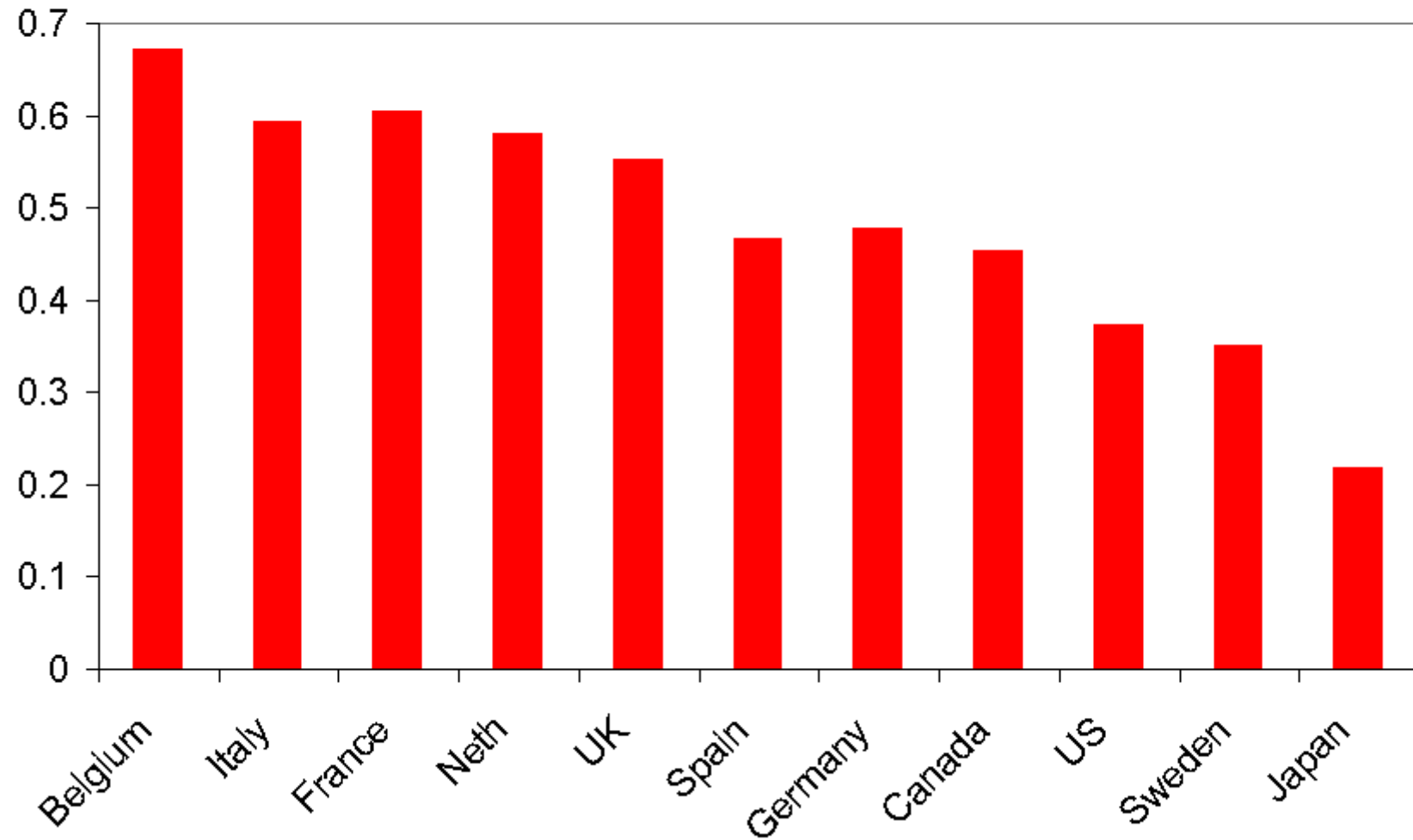


Figure 2b. LFP trends for men 60 to 64



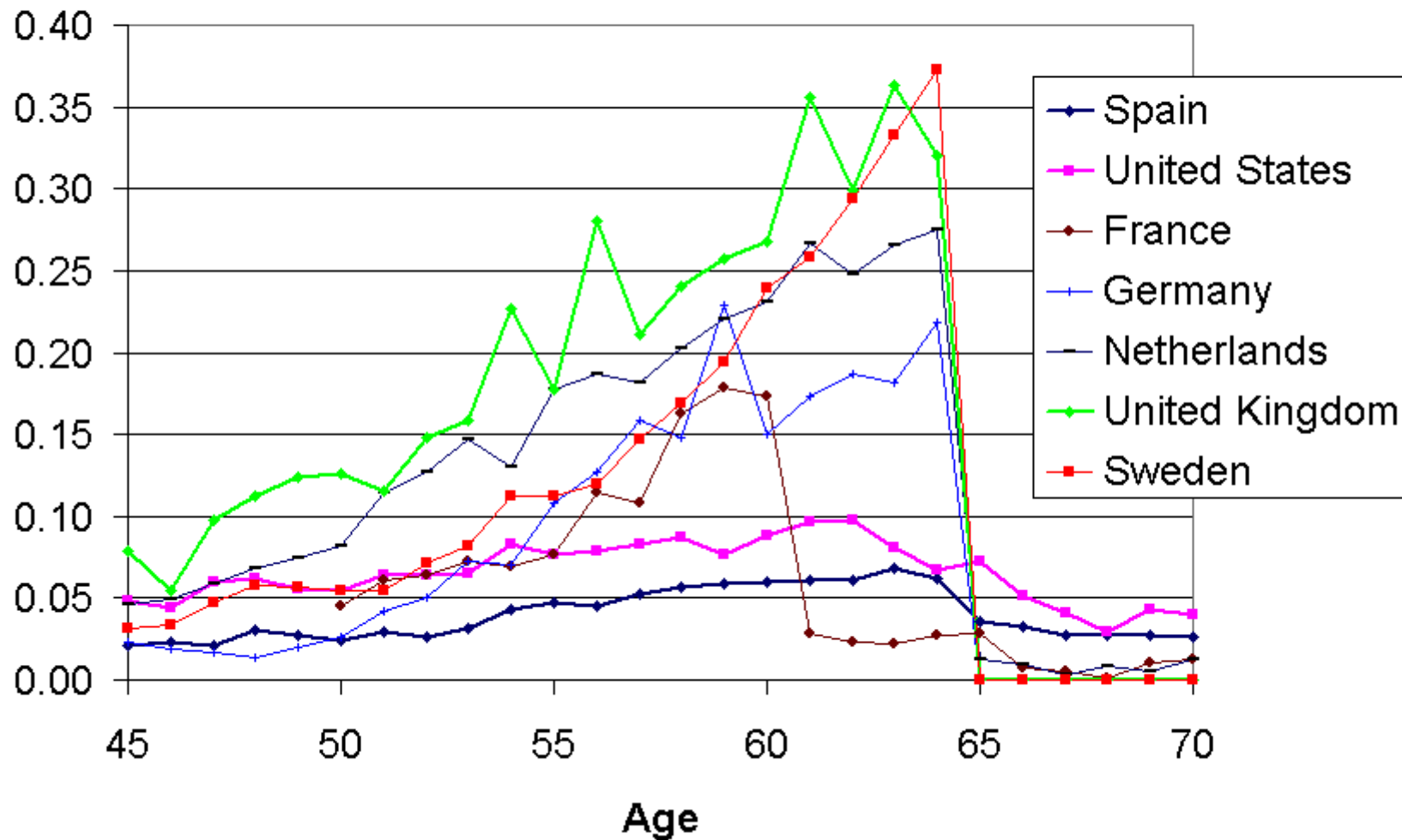
**Figure 3. Unused productive capacity:
men age 55 to 65**



Strongly related to key plan provisions

- Eligibility ages
 - 53 to 62 in our sample
- Benefit accrual after 1st eligibility age
- Disability benefits often provide early retirement before the social security plan early retirement age

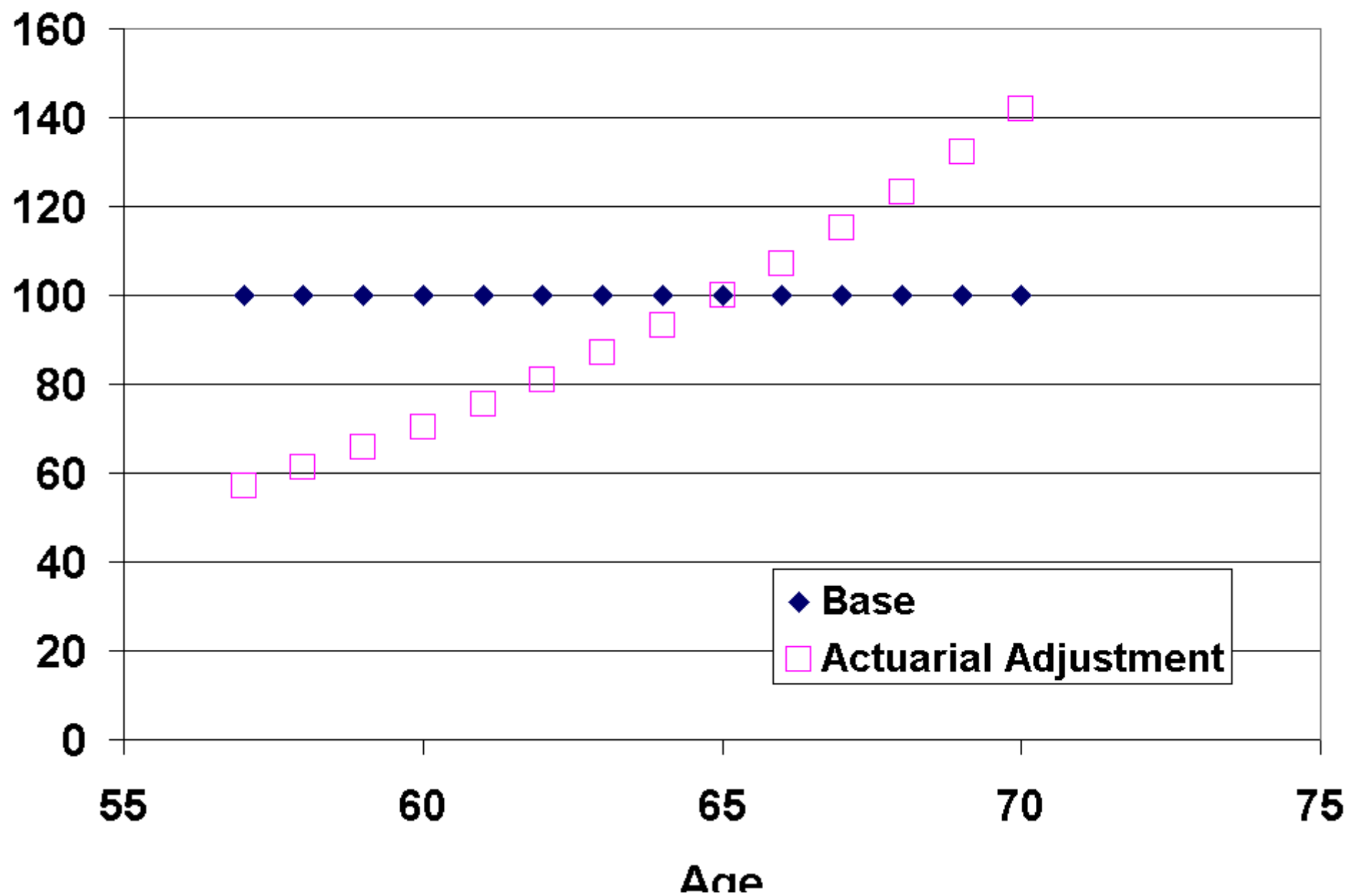
Figure 3. Proportion of men collecting disability benefits, by age



Benefit accrual after eligibility

- Two components of compensation
 - Wage earnings
 - Accrual in future pension benefits
- Pension accrual often negative
 - $SSW(a+1) - SSW(a)$
 - If negative is implicit **tax on work**
 - Penalizes work and induces retirement
- Actuarial adjustment key

Figure 4. Germany: base and actuarial adjustment



**Figure 5. Sum of Tax Rates on Work
From Early Retirement Age to 69**

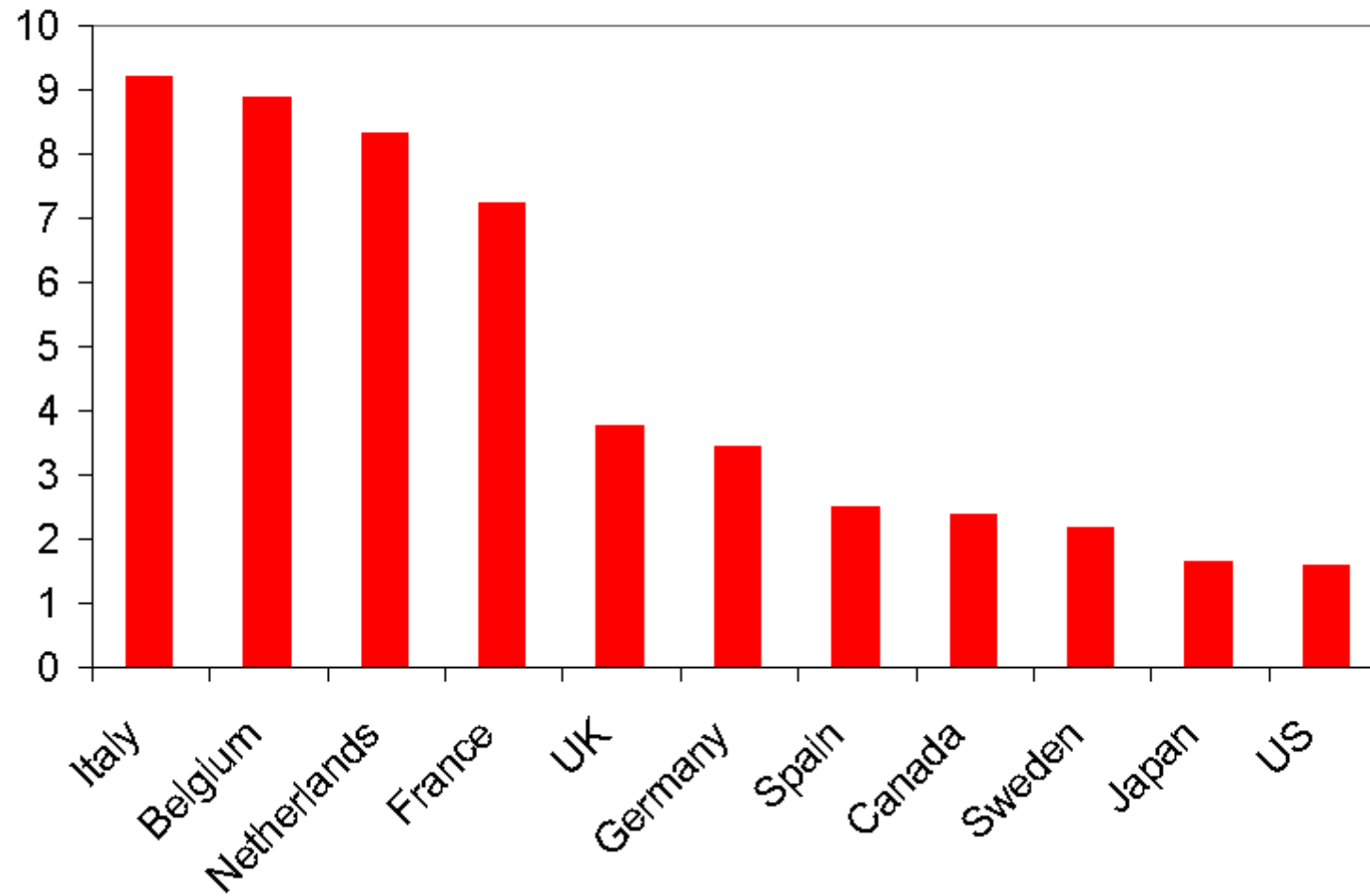


Figure 6. Unused Capacity v Tax Force to Retire

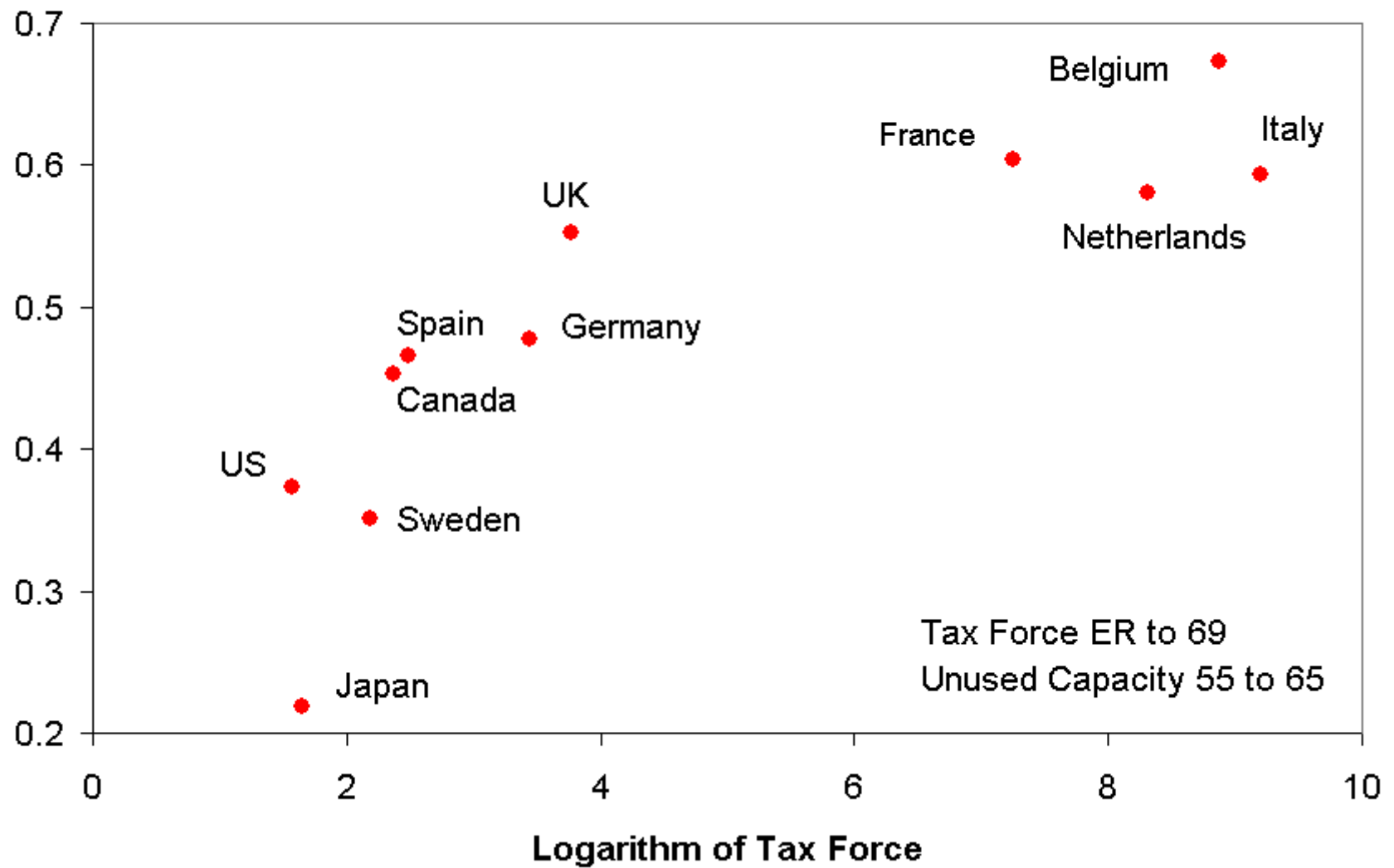
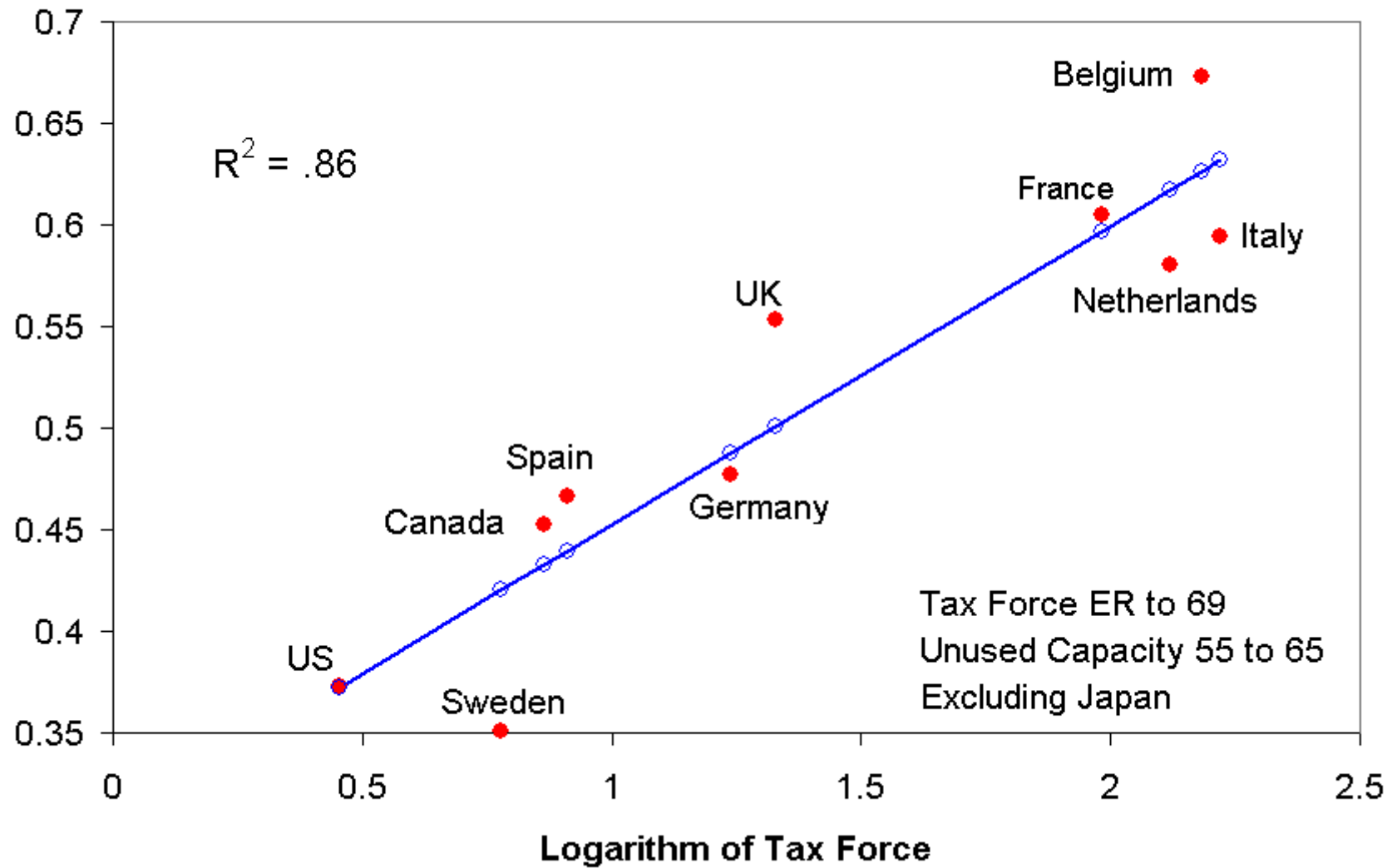


Figure 7. Unused Capacity v Tax Force to Retire



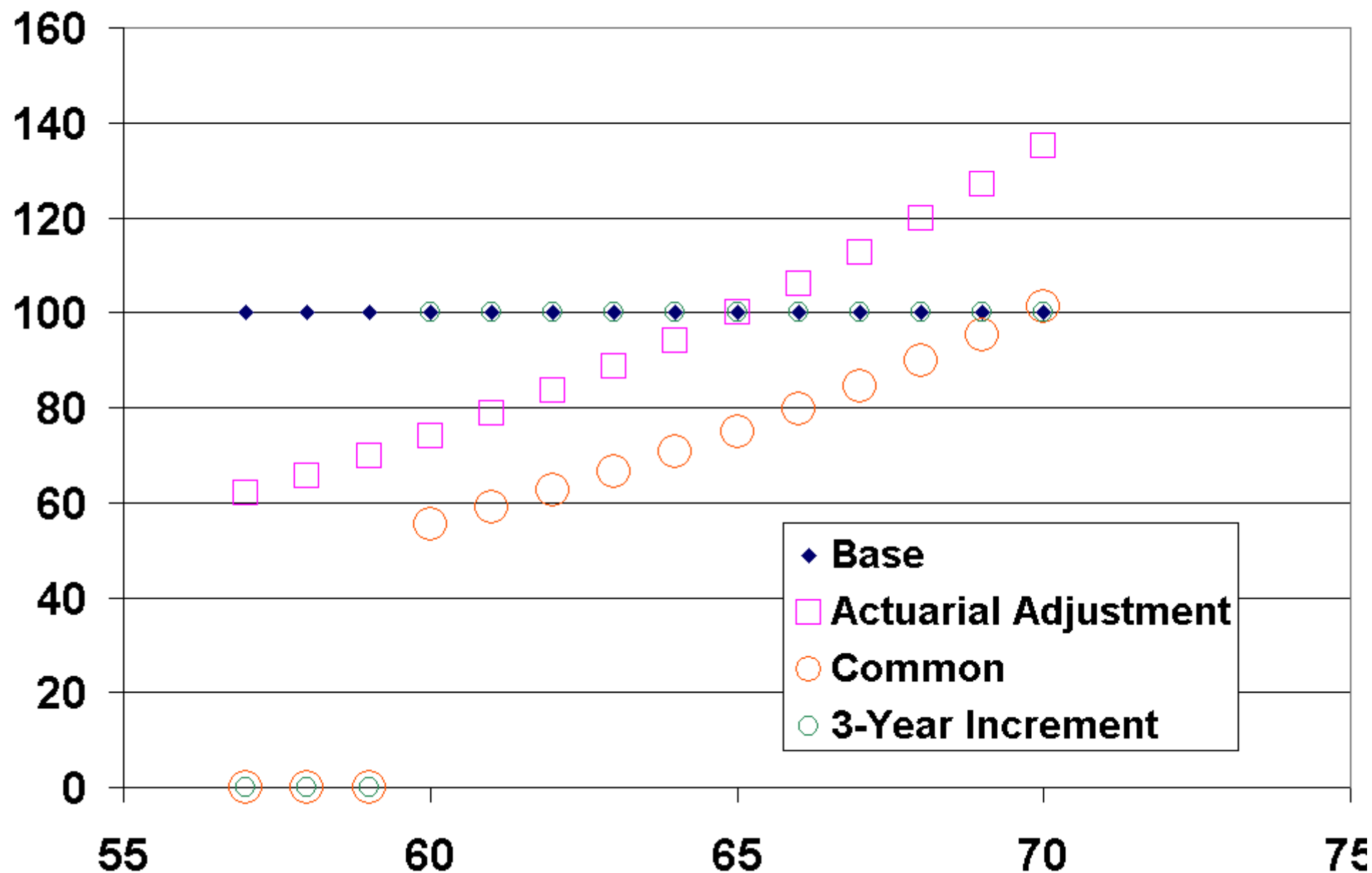
Effect of changing provisions

- Labor force participation
- Fiscal implications

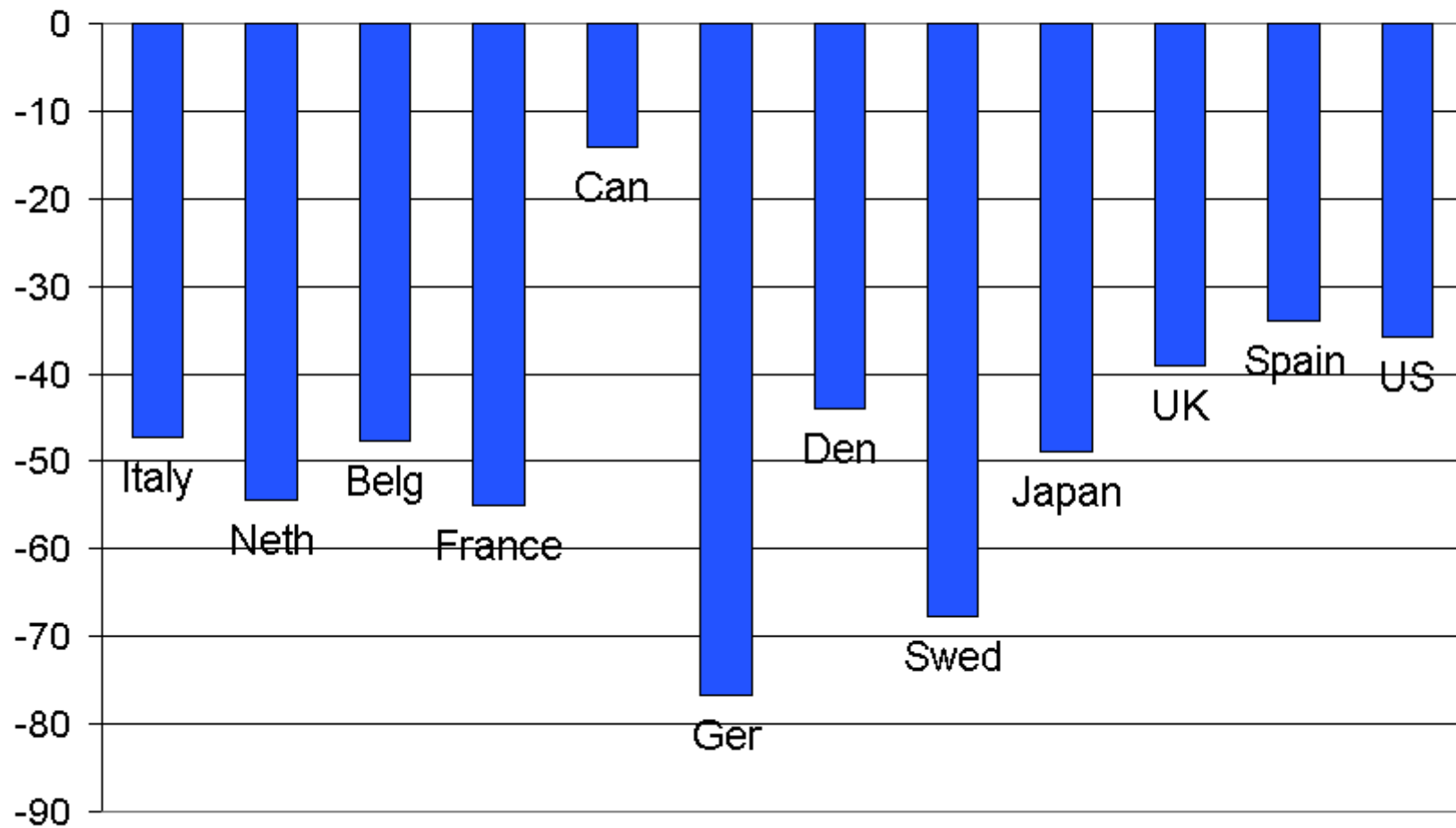
Simulations

- **(1) Three-year increment in eligibility ages:** including the ERA, NRA, and disability & special unemployment programs where important
- **(2) Actuarially fair:** Reduction before the NRA and increase after the NRA
- **(3) Common reform:**
 - Early retirement age 60
 - Normal retirement age at 65
 - Actuarial benefit adjustment by 6 percent
 - Replacement rate at age 65 is 60 % of age 60 earnings

Figure 9. Germany: base, 3-year increment, actuarial, common



**Figure 10. OLF Change 25% Age + 4 Yrs
Base versus 3-Year Delay: OV-S3**



**Figure 11. OLF Change 25% Age + 4 Yrs
Base versus Common Reform: OV-S3**

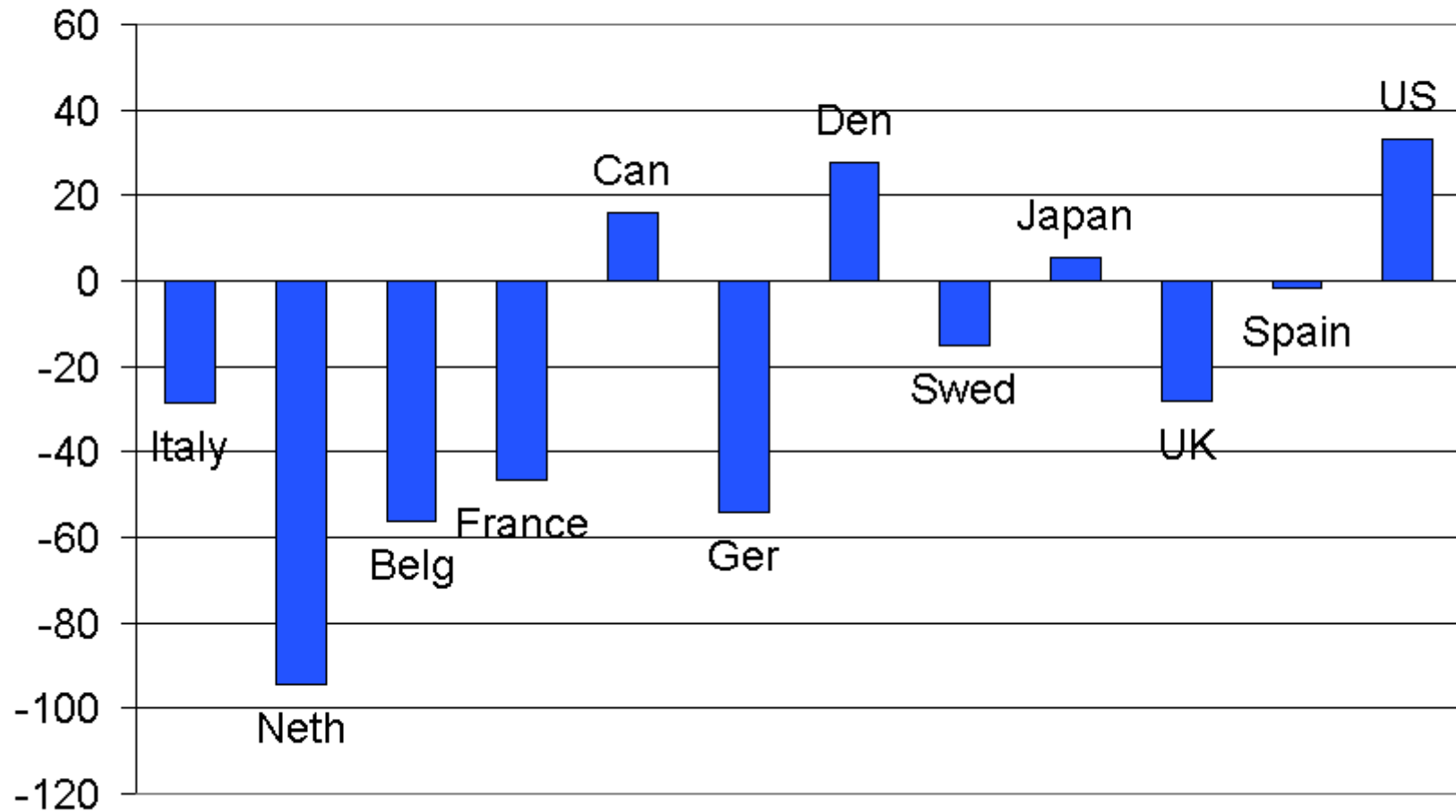


Table 1. German Illustration: Effect of Actuarial Reduction in Benefits on Retirement Age for Men and Women (Based on OV Model)

Model	Men	Women
Sample frequencies	61.91	61.73
Base simulation	62.05	62.01
Actuarially fair simulation	65.18	64.57

Figure 12. Germany: Distribution of Retirement Ages: Actuarial Fair Reform, OV

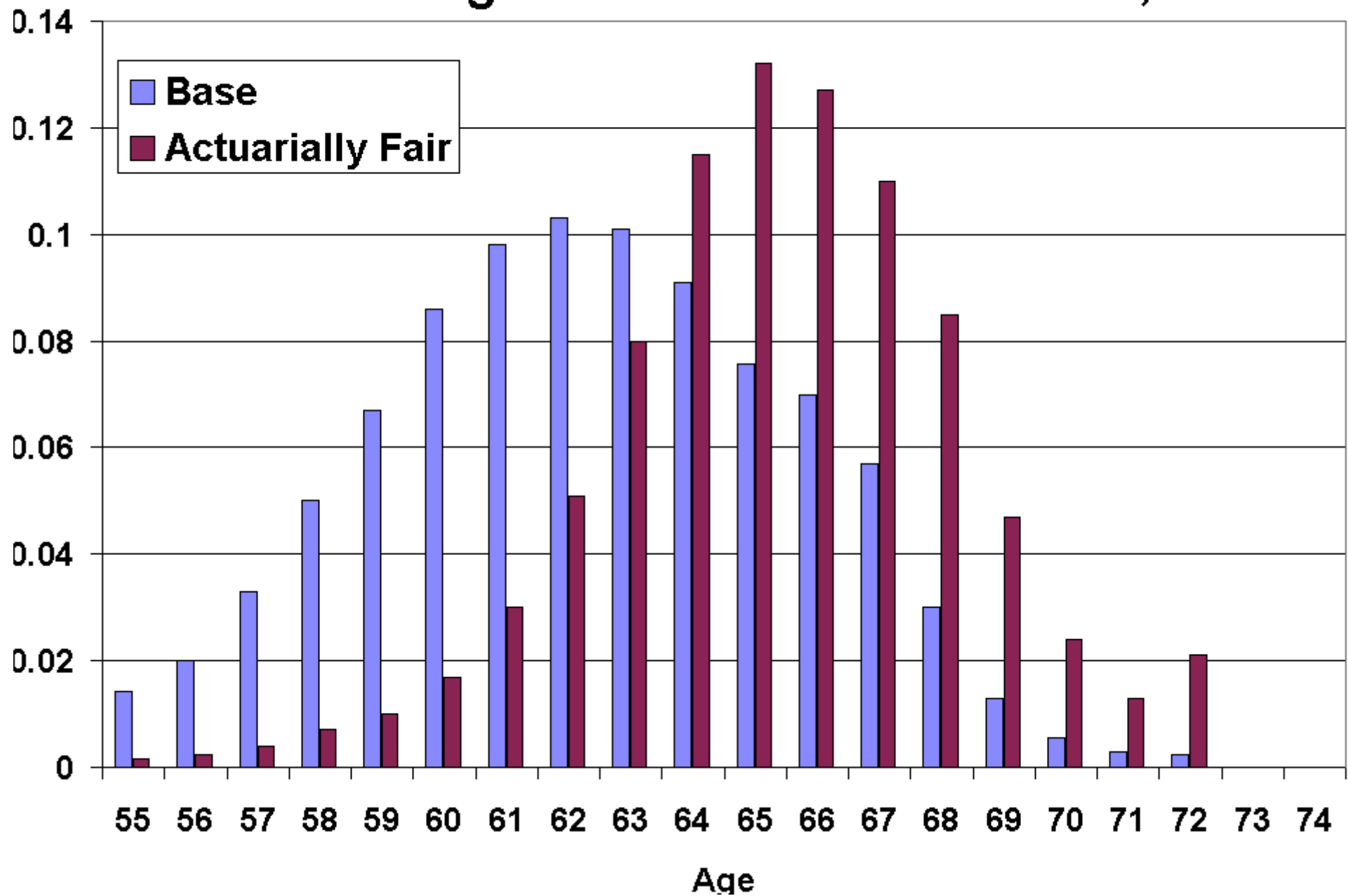


Table 2. German Illustration: Fiscal Implications of Actuarial Fair Reform: Change in Present Discounted Value, Euros per Worker (Based on OV model with dummies shifted)

	Mechanical Effect	Behavioral Effect	Total Effect
Benefits	-37,056	19,632	-17,423
Contribution	0	16,766	16,766
All taxes	-1,558	50,608	49,049
Net change	-35,497	-47,741	-83,238
% Change	-18.27%	-24.58%	-42.85%

Figure 13. Fiscal Implications of Actuarial Fair Reform (net): % of GDP 2001

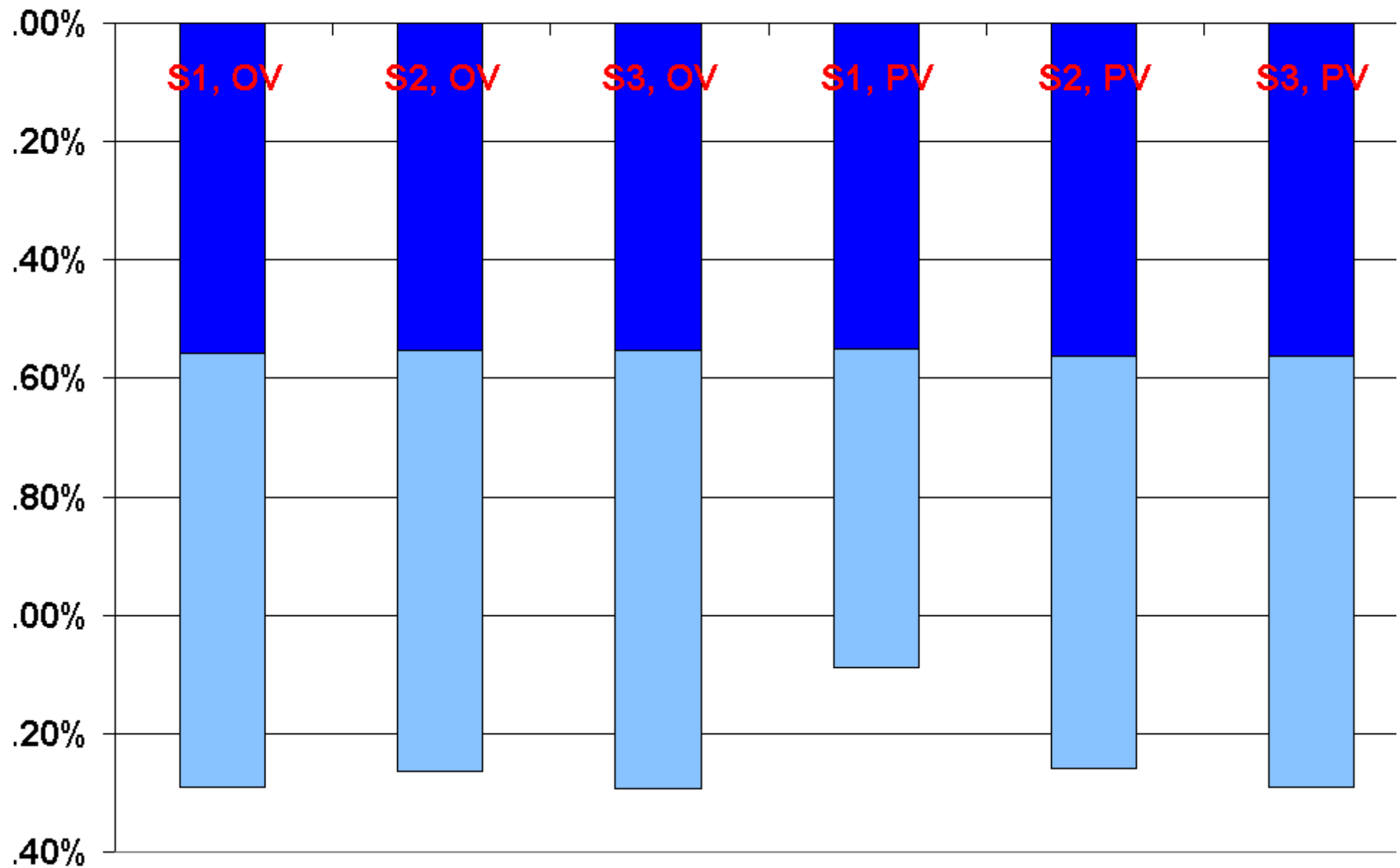
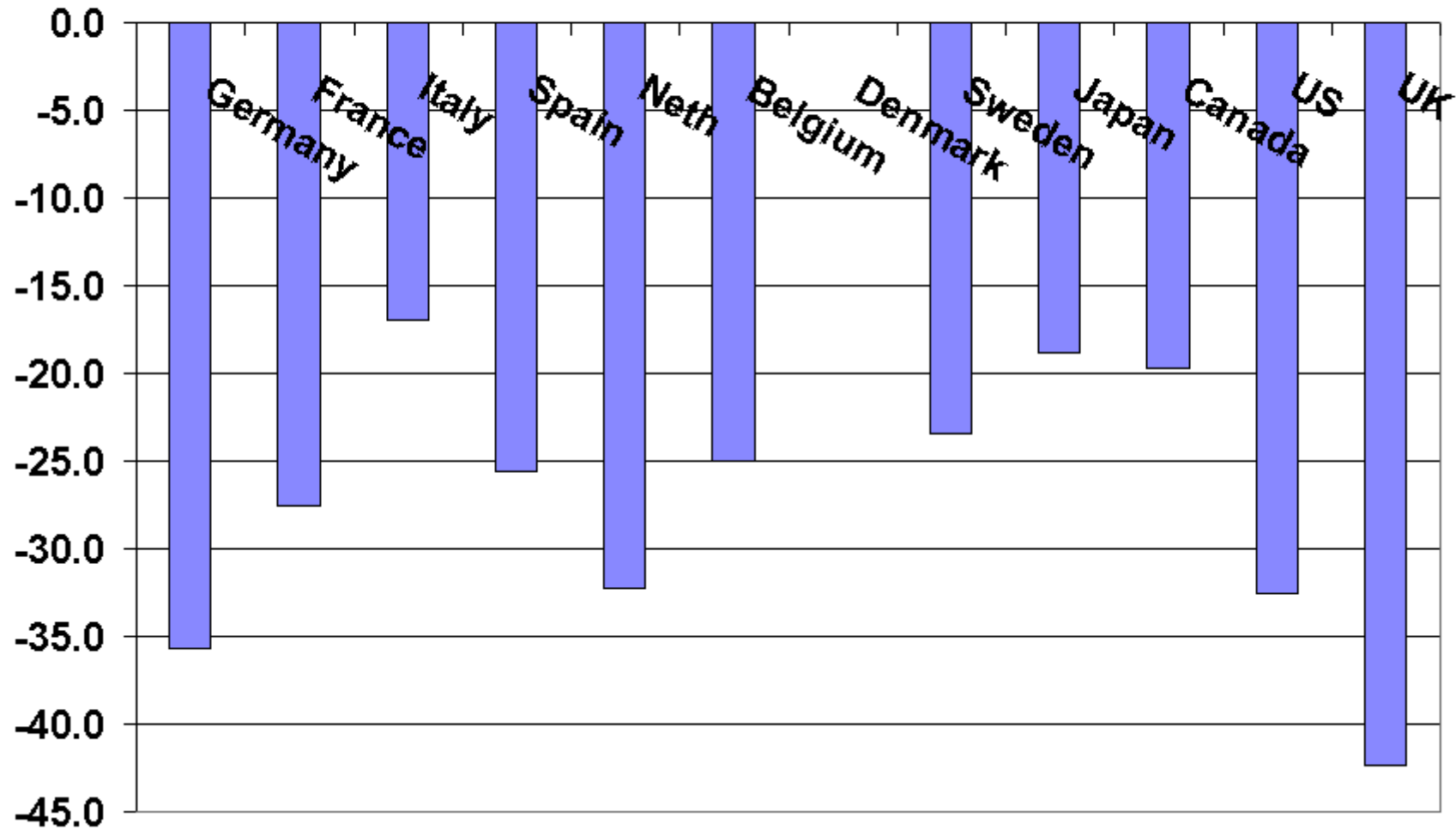


Figure 14: Total fiscal effect of 3-yr increment, as % of base cost



**Figure 15: Total fiscal effect of
3-yr increment, as % of GDP**

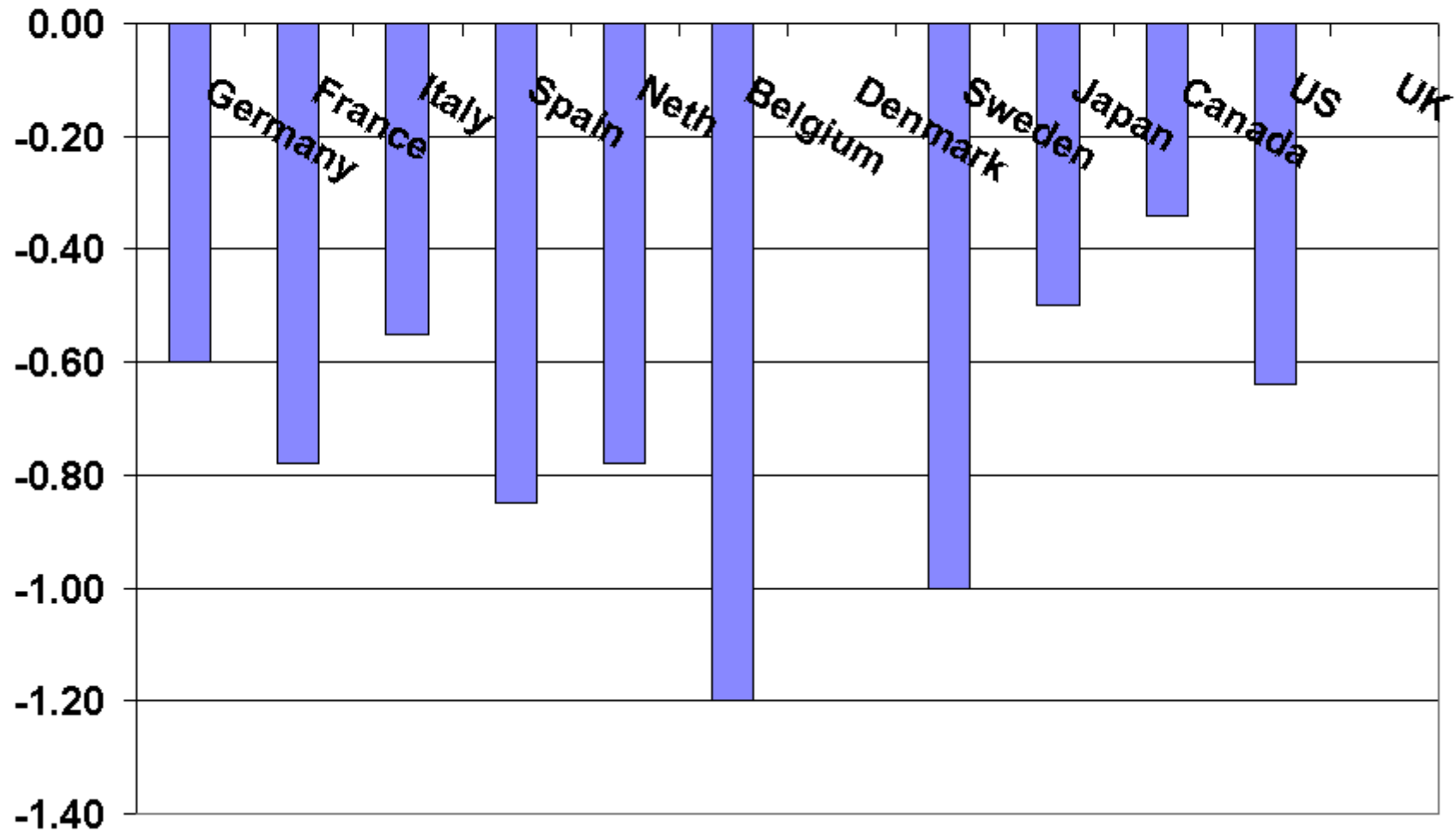


Figure 16. Total fiscal effect of actuarial reform, as % of base cost

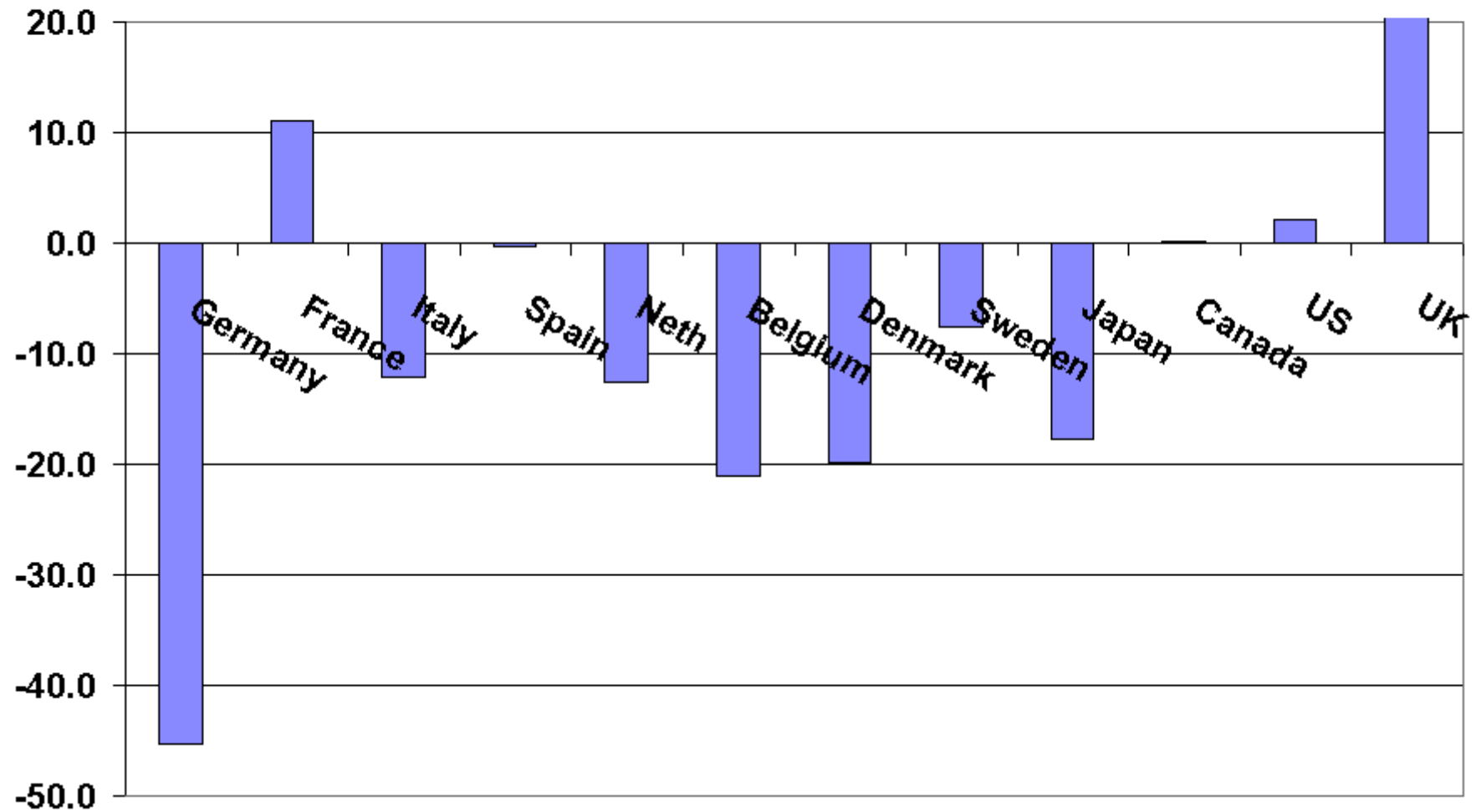
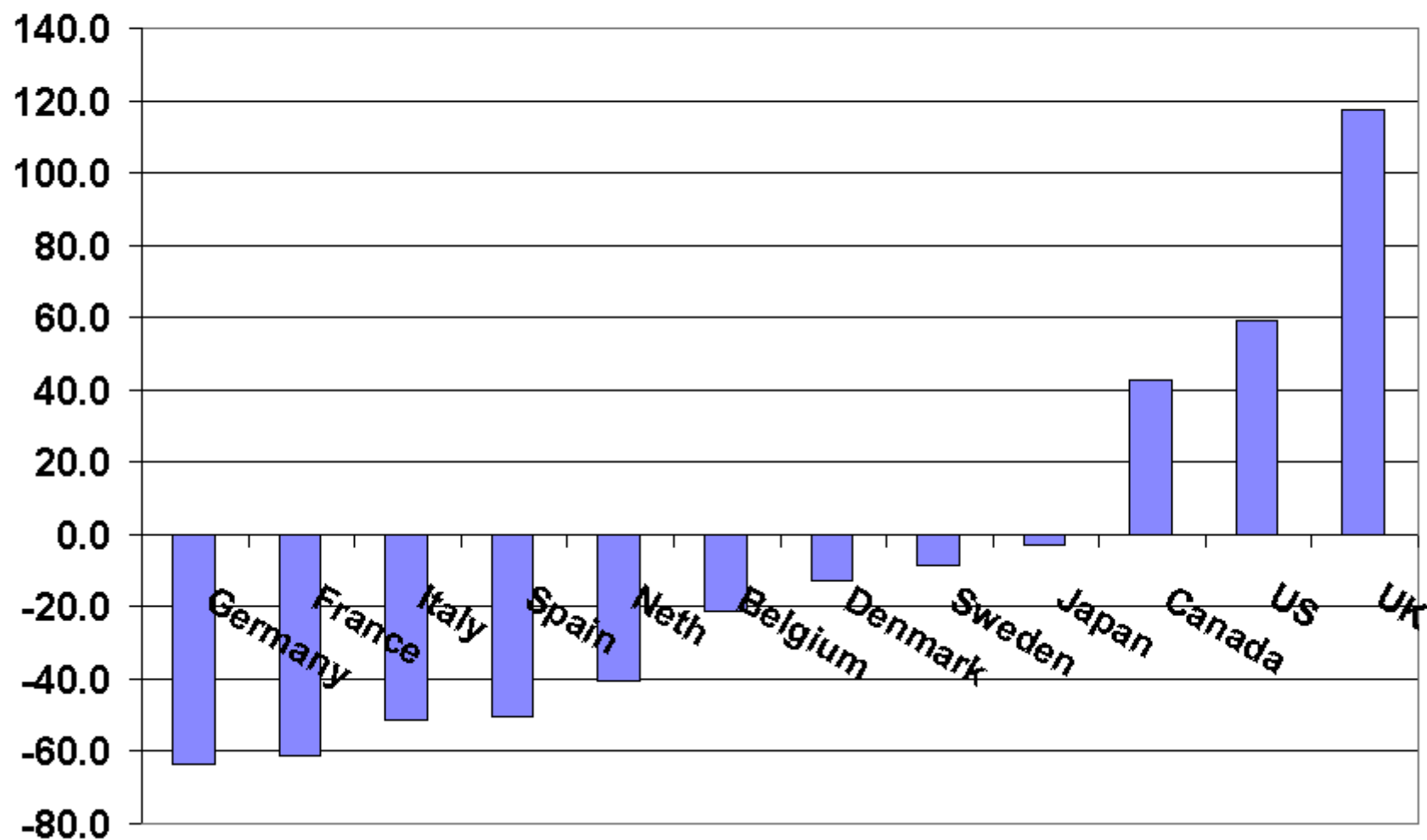


Figure 17. Total fiscal effect of common reform, as % of base cost



Conclude

- Provisions that induce retirement strongly related to “unused labor force capacity”
- Contributes to financial strain on plans
- Change in plan provisions:
 - Could substantially increase LFP of older workers
 - Could substantially improve government budgets