

# **From Public Pension to Private Savings: The Current Pension Reform Process in Europe**

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## **ABSTRACT**

Reforms of the public pension systems are on top of the European policy agenda. Current costs are high, and the pressures will increase due to population aging and negative incentive effects. This paper describes the causes of the current pension problems and the cures required to make the pay-as-you-go public pension systems in Continental Europe sustainable. There is no single policy prescription that can solve all problems at once. Reform elements include a freeze in the contribution and tax rates, an indexation of benefits to the dependency ratio, measures to stop the current trend towards early retirement, an adaptation of the normal retirement age to increased life expectancy; and more reliance on private savings – elements of a sustainable but complex multipillar system of retirement income provision.

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# **From Public Pensions to Private Savings: The Current Pension Reform Process in Europe**

**by Axel H. Börsch-Supan**

## **1. Introduction**

Public pension systems are the single largest item in the social budget in almost all European countries, and they represent a substantial share of GDP. Austria and Italy are frontrunners with some 14 percent of GDP, and in Germany, France and Spain, this share is about 12 percent, see Figure 1. This is more than 2.5 times as expensive as the U.S. Social Security System (4.4 percent of GDP).

**Figure 1: Pension Budgets in the EU as Percent of GDP, 2000 and 2050**

While the generosity of the European public pension systems is considered a great social achievement, population aging and negative incentive effects threaten the very core of these public pay-as-you-go systems. This paper begins with the causes for reform. Section 2 describes population aging and section 3 the negative incentive effects which threaten not only the stability of pension systems but economic growth at large. Sections 4 and 5 are then devoted to the cures. Setting limits to contribution rates and increasing retirement age will lower the weight of pay-as-you-go financed public pensions. In turn, private saving and longer working lives will have to fill the emerging gaps, obtaining a larger weight in retirement income. Section 6 concludes.

## **2. Causes for Reform: Population Aging**

While all industrialized countries are aging, there are remarkable differences. While Italy, Japan, Austria and Germany will experience a particular dramatic change in the age structure

of the population, such change is much less incisive in Great Britain, Scandinavia and the United States. The severity of the demographic transition in most of Continental Europe has two causes: a quicker increase in life expectancy than elsewhere, partly due to a relatively low level still in the 1970s, and a more incisive baby boom/baby bust transition (e.g., relative to the United States) to a very low fertility rate in some countries (1.2 children per lifetime in Italy, Spain and Greece, 1.3 in Austria and Germany).

Both demographic developments have a similar consequence: the ratio of elderly to working age persons – the old age dependency ratio – will increase steeply. According to the latest projections of the European Union (Figure 2), the share of elderly (aged 65 and above) will exceed a quarter of the population in 2030.<sup>1</sup> The old age dependency ratio will more than double during the next 50 years. In Italy, Spain, Austria and Germany, there will be one person aged 65 and over for every two other persons.

**Figure 2: The Old-Age Dependency Ratio in Europe, 2000 and 2030**

This dramatic change in the age structure of the population is unprecedented in history. While the so-called demographic transition has been a long and slow process in Europe since the turn of the 18<sup>th</sup> to the 19<sup>th</sup> century, it will accelerate dramatically during the – historically seen – relatively short period of 25 years between 2010 and 2035. In Germany, the old-age dependency ratio will most likely reach a relatively stable plafond after 2035, see Figure 3, which depicts the number of pensioners divided by the number of workers, based on three scenarios: the most likely one in the middle accompanied by an extremely pessimistic and an extremely optimistic scenario. On the plafond of the most likely development, every worker will have to shoulder almost the entire benefit burden of one pensioner. Even in the most optimistic of circumstances, it will be 75 percent of this burden, while it will reach 125 percent should the most pessimistic scenario become true..

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<sup>1</sup> Economic Policy Committee (2001)

### **Figure 3: The German System Dependency Ratio, 1995-2050**

It is important to distinguish the two causes for this dramatic demographic change. The sharpness of the change is generated by the first cause, the sudden decline in birth rates during the baby boom to baby bust transition in the 1970s. The number of children born during the baby boom in the 1960s was about 2.4 children per woman and led to the bulge in the age pyramid, see Figure 4. In 1997, these children were about 35 years old. The baby bust started with a sudden decline to 1.3 children per woman, visible in the much smaller number of persons aged below 35. 30 years from now, the numerous baby boomers will be pensioners, and the much smaller baby bust generation will have to finance them.

### **Figure 4: Baby Boom to Baby Bust Transition in Germany**

The second cause for the demographic transition is the secular change in life expectancy. This is a more steady development, and it is likely to persist after 2035. Figure 5 shows that since 1970, the remaining life expectancy of German men and women at age 65 has increased by 4 years. It is projected to increase another 3 years until 2030. This implies that a pension in 2030 will be paid 7 more years than in 1970.

### **Figure 5: Life Expectancy at Age 65, German Men and Women, 1970-2040**

Since the average length of pension receipt was about 15 years in 1970, the increase in life expectancy represents an expansion of pension benefits by almost 50 percent. In fact, retirement age decreased since 1970, hence increasing the life-time value of pension benefits even more. Quite clearly, public pension systems cannot maintain stable contribution rates, when the number of beneficiaries increases but the number of financiers decreases, and at the very same time the volume of life-time benefits also vastly expands.

### 3. Causes for Reform: Negative Incentive Effects

Demography is not the only reason to reform the ailing pay-as-you-go public pension systems in Europe. A third cause for financial trouble, alluded to earlier, is the decreasing retirement age, leading a dramatically lower labor force participation among elderly workers. Figure 6 shows that especially in Belgium, France, the Netherlands, Germany and Italy, very few workers aged 60-64 are still in the labor force. This is quite different from what it was in the 1960s, in spite of a lower life expectancy and a higher prevalence of illness at that time.<sup>2</sup>

#### **Figure 5: Labor force participation among men aged 60-64.**

This decline is not a “natural trend” tied to secular income growth. It did not occur, for example, in Japan and Sweden. Rather, there is convincing evidence that this decline has been largely “engineered” by the incentive effects that are intrinsic in some of the public pension systems, in particular by an incomplete adjustment of benefits to retirement age.<sup>3</sup> Germany is a striking example. The German public pension system with its “flexible retirement” introduced in 1972 tilted the retirement decision heavily towards the earliest retirement age applicable because the annual benefit was essentially independent of the retirement age. Hence, retiring earlier gave a worker essentially the same pension for a longer time. At the then prevailing generous replacement rates, this was a pretty good deal. The 1992 reform, in force after 1997, has diminished this incentive effect, but pension benefits are still not actuarially neutral at conventional interest rates.

The retirement behavior of entrants into the German public retirement insurance system reflects these incentive effects quite clearly, see Figure 7. Immediately after the introduction of “flexible retirement” in 1972, the average retirement age declined dramatically by more than 3 years. We interpret this as a clear sign of a policy reaction. The most popular retirement age switched by 5 years from age 65 to age 60.

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<sup>2</sup> Cutler and Sheiner (1998)

<sup>3</sup> Börsch-Supan and Schnabel (1998), Gruber and Wise (1999)

### **Figure 7: Average Retirement Age in Germany, 1960-1995**

The combination of a lower birth rate, a higher life expectancy and an earlier retirement age has dramatically increased the dependency burden as we have seen in Figures 2 and 3. This has immediate consequences for the budgets of the pay-as-you-go financed public pension systems in Europe because fewer workers have to finance the benefits of more recipients.

We have seen one consequence in Figure 1: The share of GDP that must be devoted to pensions will increase dramatically if current legislation prevails. The pension budget is typically financed by a mixture of taxes and contributions. They will have to rise in all EU countries, unless legislation is changed. The pension contribution rate for German workers, for example, was 19.5 percent of gross income in 2003. It was projected at the end of the 1980s to exceed 40 percent of gross income at the peak of population ageing in 2035 if the accustomed generosity of benefits were maintained. Moreover, taxes used to subsidize the public pension system increased dramatically since 1993, such that the overall financial burden per worker is now close to 30 percent of gross income, see Figure 8.

### **Figure 8: Financial Burden of the German Public Pension System, 1965-1999.**

These 30 percent are a substantial part of total labor compensation. Taxes and social insurance contributions add up to more than 50 percent of total labor compensation and make West German labor more expensive than in any other EU country, see Figure 9.

### **Figure 9: Total hourly labor compensation in the EU, 1981-2001.**

Many economists regard the high total labor costs as the main reason for the low demand for labor, thus high unemployment and low economic growth.<sup>4</sup> Reducing the pension burden is therefore not only important for the long-run stability and sustainability of the pension system

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<sup>4</sup> Kommission für die Nachhaltigkeit in der Finanzierung der Sozialen Sicherungssysteme („Rürup-Kommission“)

itself, but for economic performance at large. It is important to keep both in mind, since economic growth is an important source to finance future pensions.

#### **4. Curing the Problems: Adapting the Public System**

There is no single reform measure that can lead to a stable and sustainable system of old-age provision. Reform requires an overhaul of the existing pay-as-you-go systems as well as the re-introduction of private saving as a major source of future retirement income. Neither can the public pension systems alone provide a sufficient retirement income at reasonable tax and contribution rates, nor can private savings fully substitute for pay-as-you-go pensions.

Public pensions alone will not suffice since the resulting tax and contribution rates from maintaining the current generosity will suffocate economic growth – not necessarily now, but certainly in the thirties and forties of our century; we have seen this in Figures 1 and 8. Further increases of the tax and contribution rates are not a policy choice in those EU countries that have high total labor costs, in particular Germany, Austria, Denmark and Sweden.

Transiting pensions entirely to private saving is not a policy option either. One fatal reason against such an option is simply that it is too late. Saving requires time, and there will not be sufficient time until 2030 for the baby boomers to accumulate funds in the order of magnitude required to finance a full pension. Time and history is of the essence in pension reform. The baby boom/baby bust transition dictates the time schedule and makes reforms impossible which were thinkable 25 years ago – such as a complete transition to a fully funded system.

There are other reasons to advocate a more subtle but also more complex multipillar system rather than a pure pay-as-you-go or a pure fully funded system. An important reason is diversification. Pay-as-you-go systems carry large demographic and political risks, while fully funded systems carry large capital market risks. Since these risks are not perfectly correlated, diversification is always better than monolithity.

A credible reform strategy has thus two reform elements: adapting the public system to demographic change under the restriction that taxes and contributions cannot increase much further, and strengthening private savings under the restriction that not much time is left until 2035. This section addresses the first, the following section the second element.



Stabilizing tax and contribution rates implies expenditure cuts if and when at the same time demographic change reduces the number of contributors to, and increases the number of beneficiaries from, the pay-as-you-go pension systems. Pension expenditures have two dimensions: the level and the duration of benefits. Expenditure cuts are easier to shoulder if they involve both dimensions.

Both dimensions are politically difficult. Fortunately, the demographic change, while dramatic, is of a magnitude far from absorbing all available resources. The dependency ratio deteriorates the financial basis of the pension system at a rate of about 0.2-0.5 percent per annum. This is much less than the long-run averages of productivity growth which is about 1.5 percent per annum. Hence, population aging absorbs between a seventh and a third of future productivity growth but leaves the bulk for real income growth. Pension benefits can therefore rise in real terms in spite of population aging, and all what is required is a growth rate of benefits that remains below the growth rate of wages.

How much benefit increases have to be dampened depends on the speed and the extent of demographic change in each country. France and Sweden, for example, will need less adaptation than Italy and Germany. Some countries have formalized this link between demographics and benefit level. Sweden and Italy have introduced so-called “notional contribution systems” which compute benefits on the basis of the accumulated contributions plus some fictitious interest which depends on demographic essentials such as life expectancy and dependency ratio. Figure 1 shows the success of these measures in the long run.<sup>5</sup>

Germany has taken a slightly different approach. A recent reform commission, the so-called Rürup commission, has proposed to extend the benefit indexation formula by a new factor, the so-called “sustainability factor”.<sup>6</sup> This factor reflects the development of the relative number of contributors to pensioners, the system dependency ratio, which is the most important long-term determinant of pension financing. The annual benefit changes are then proportional to two factors: changes in gross earnings minus contributions to the pension system (positively related), and changes in the system dependency ratio (inversely related), see Figure 10. The

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<sup>5</sup> This figure masks many important problems in the short run 2020-2040, especially in Italy.

<sup>6</sup> Börsch-Supan, Reil-Held und Wilke (2003), Börsch-Supan (2004).

latter element is appropriately weighted to achieve the contribution rate targets put by the then labor secretary Riester into German law: a contribution rate under 20 percent until 2020 and under 22 percent until 2030.

**Figure 10: The “Sustainability Factor”**

The new pension formula will lead to decreases in pension benefit levels vis-à-vis the path of wages, see Figure 11. Currently, gross benefits are about 48 percent of gross earnings. This corresponds to a net pension level of about 70 percent of net earnings. In 2035, when the plafond of population aging is reached, the gross pension level will be about 40 percent.

**Figure 11: Projected Retirement Income Components, Germany, 2002-2040**

The other dimension of pension expenditures is the duration of pension benefits, determined by the difference between retirement age and life expectancy. As pointed out earlier, life expectancy is projected to increase by about 3 years between now and 2030. This increase is expected to be about the same for all European countries. Quite clearly, stopping the trend towards early retirement is one policy necessity; adapting the statutory retirement age to increased life expectancy is another one.

Both steps are extremely unpopular throughout Europe. In Germany, the 1992 reform has succeeded in abolishing most early retirement pathways without actuarial adjustments. This law became effective in 1997, but it has a transition period until 2017, see Figure 12.

**Figure 12: Projected Retirement Age, Germany, 1997-2035**

In addition, the Rürup-Commission has proposed an increase of the normal retirement age from 65 to 67 years. However, while the proposed increase is slow and gradual, starting in 2011 with monthly steps such that the retirement age of 67 will be only reached in 2035, and while this increase corresponds to only two-thirds of the projected change in life expectancy, it did not

become part of the “Agenda 2010” reform package that was passed by the German parliament in 2003. Further steps, such as making benefits fully actuarial at conventional interest rates, failed to even pass the internal discussions of the Rürup-Commission. Quite clearly, more work has to be done to convince the public and the legislators that such steps are necessary.

## **5. Curing the Problems: The Role of Private Saving**

Reducing the first pillar of pay-as-you-go financed public pensions creates a gap in retirement income relative to what workers have become accustomed to. There are only two mechanisms to fill the gap: working longer and saving more. A reasonable approach is of course to exploit both mechanisms, in spite of the unpopularity particularly of the first mechanism. Figure 11 shows how this can work, again using the recent German reform proposals as example. Taking account of the increase in the normal retirement age to 67, which increases pension benefits according to the German benefit formula, and adding income from private retirement savings, the reform proposal manages to deliver an income level for retirees that is comparable to today’s income level. This projection assumes a private retirement saving rate of 4% from 2009 on. These 4% are the current limit of tax-subsidization, if either occupational pensions (“second pillar”) or private savings (“third pillar”) are used to finance additional retirement income. Under many circumstances, both subsidies can be combined such that 8% of gross income can be tax-privileged.

This is important for the early baby boomers. Figure 11 quite clearly shows the crux of all transition schemes to more funded pensions via private saving: the transition generation will have to pay extra in order to maintain their total retirement income when the income from pay-as-you-go pensions is reduced. For the younger generation, born after about 1980, 4% is sufficient to maintain or even to obtain higher retirement income levels than today, but a saving rate of 8% is required for the cohort with the highest transition burden, the early baby boomers born in the 1950s and early 1960s.

**Figure 13: The Three Pillars of Retirement Income**

Such high saving rates are feasible, but they of course hurt consumption. They are the price for reforming too late. Figure 13 shows the weight of the three pillars in selected European countries.<sup>7</sup> Those countries, which have reformed their pension systems in the 1980s by transiting to multipillar systems (Switzerland, the Netherlands, Great Britain), have succeeded in lower contribution rates; they also need lower private saving rates because they have saved for a longer time, accumulating more capital and enjoying higher compound interest. The latecomers in this process (Spain, Germany, France and Italy) still have dominant first pillars and need to save much more and much quicker, if they want to alleviate the tax and contribution burden and at the same time maintain their accustomed retirement income levels.

## **6. Conclusions**

The generous pension systems in Europe, massively expanded in the 1970s, generated early retirement ages and high replacement rates, but at high costs to society in form of large cost percentages of GDP and high contribution rates. These systems now suffer from financial insustainability through population aging and negative incentive effects.

Reform processes are under way in almost all European countries. Some countries reformed early in the 1980s, most countries much later, some not at all. Typically, we have experienced “reforms in installments”. These reforms have combined “parametric” elements (introducing actuarial adjustments, changing the benefits indexation formula, increasing the retirement age) with “fundamental” elements (moving substantial parts of retirement income from public pensions to private savings). The major European pension systems (France, Germany, Italy, Spain) still have some ways to go in order to become financially sustainable. This presentation has shown that this goal is achievable with a combination of reasonable policy steps. These steps, however, need to be taken soon. Time is of the essence, since the demographic process of population aging has a fixed clock, and reforms take time both due to the political process and the slow process of accumulating savings.

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<sup>7</sup> Börsch-Supan and Miegel (2001).

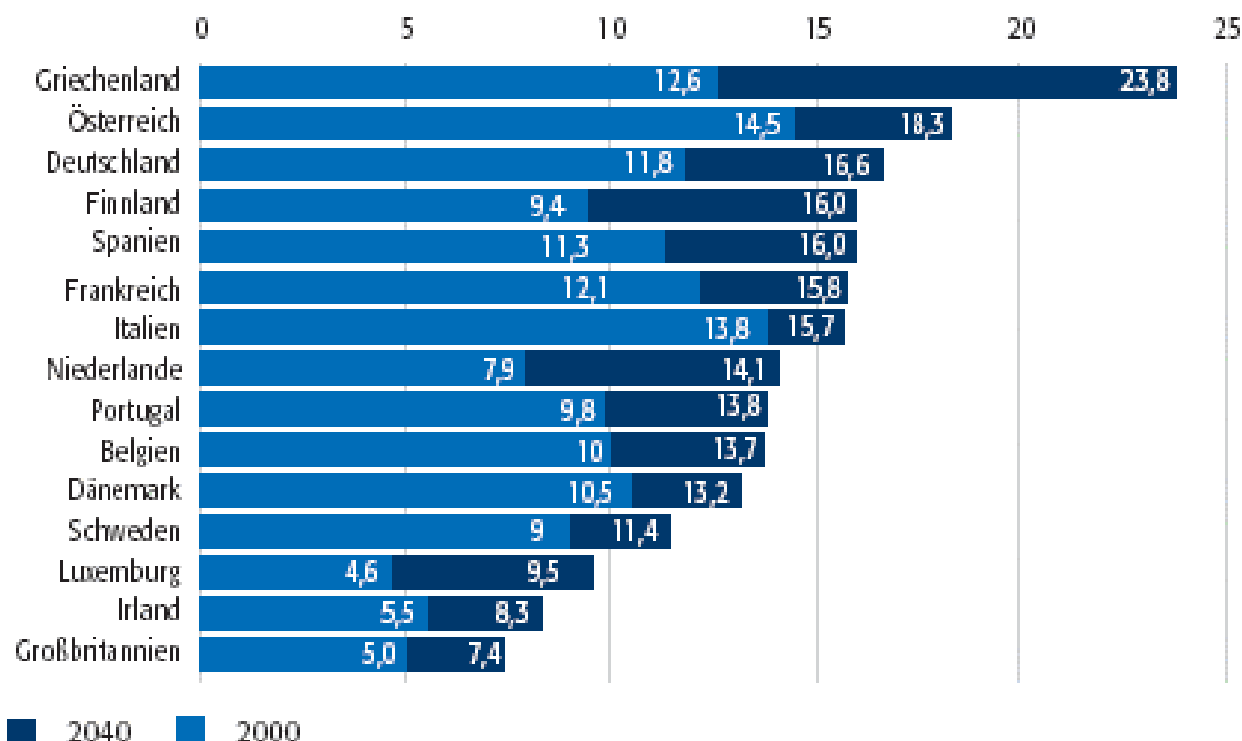
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# Figure 1

## Reformdruck in den gesetzlichen Rentensystemen.

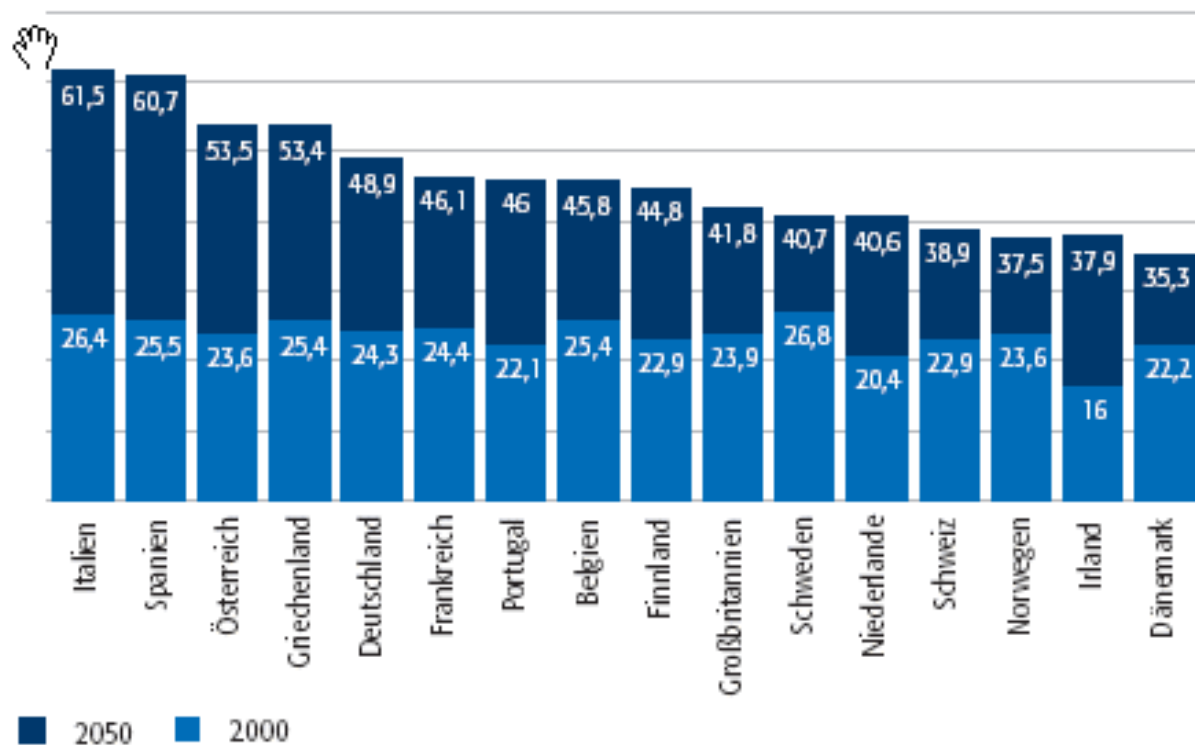
Pensions- /Rentenausgaben der Staaten, in % des BIP.



# Figure 2

## Demographie: Altersquotient.

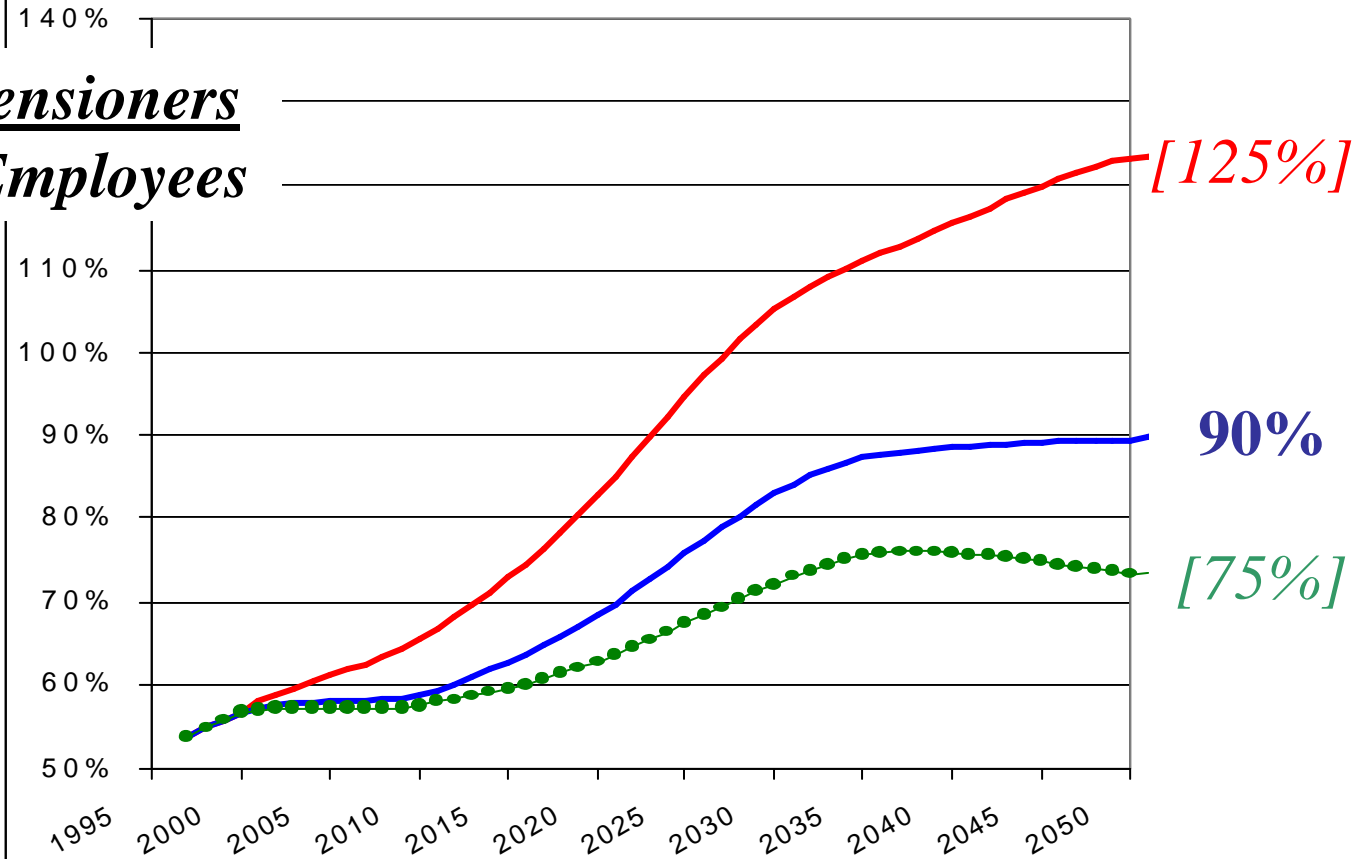
Verhältnis von 65-Jährigen und Älteren zu 15 - 64-Jährigen.



Quelle: Demographic forecast of EU Economic Policy Committee, 2001

# Figure 3

Pensioners  
Employees



50%

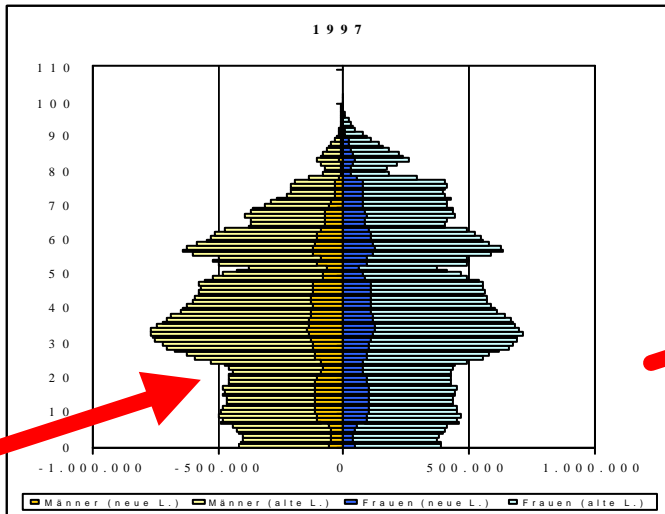
Example: Germany



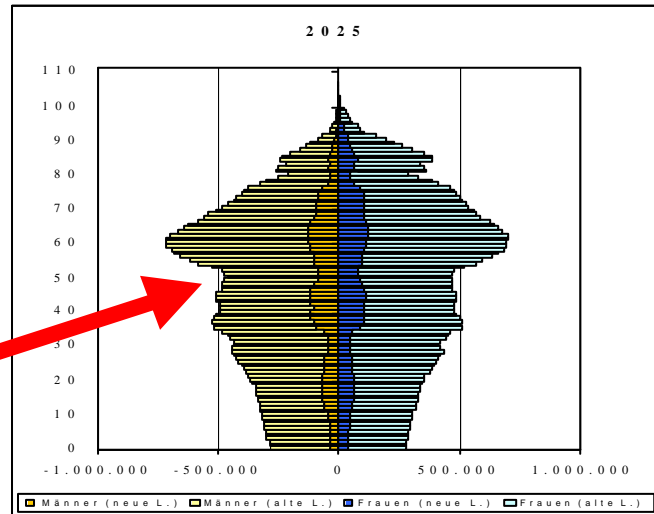
# Figure 4

Schaubild 1.6  
Entwicklung der Altersstruktur der Bevölkerung in den alten und neuen Bundesländern

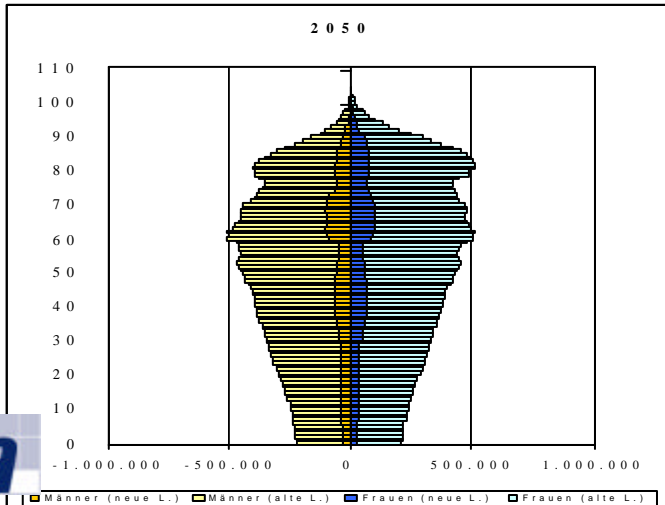
1997



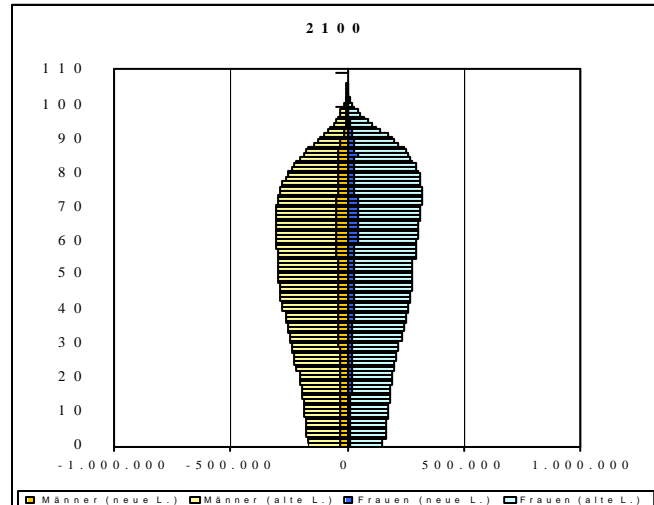
2025



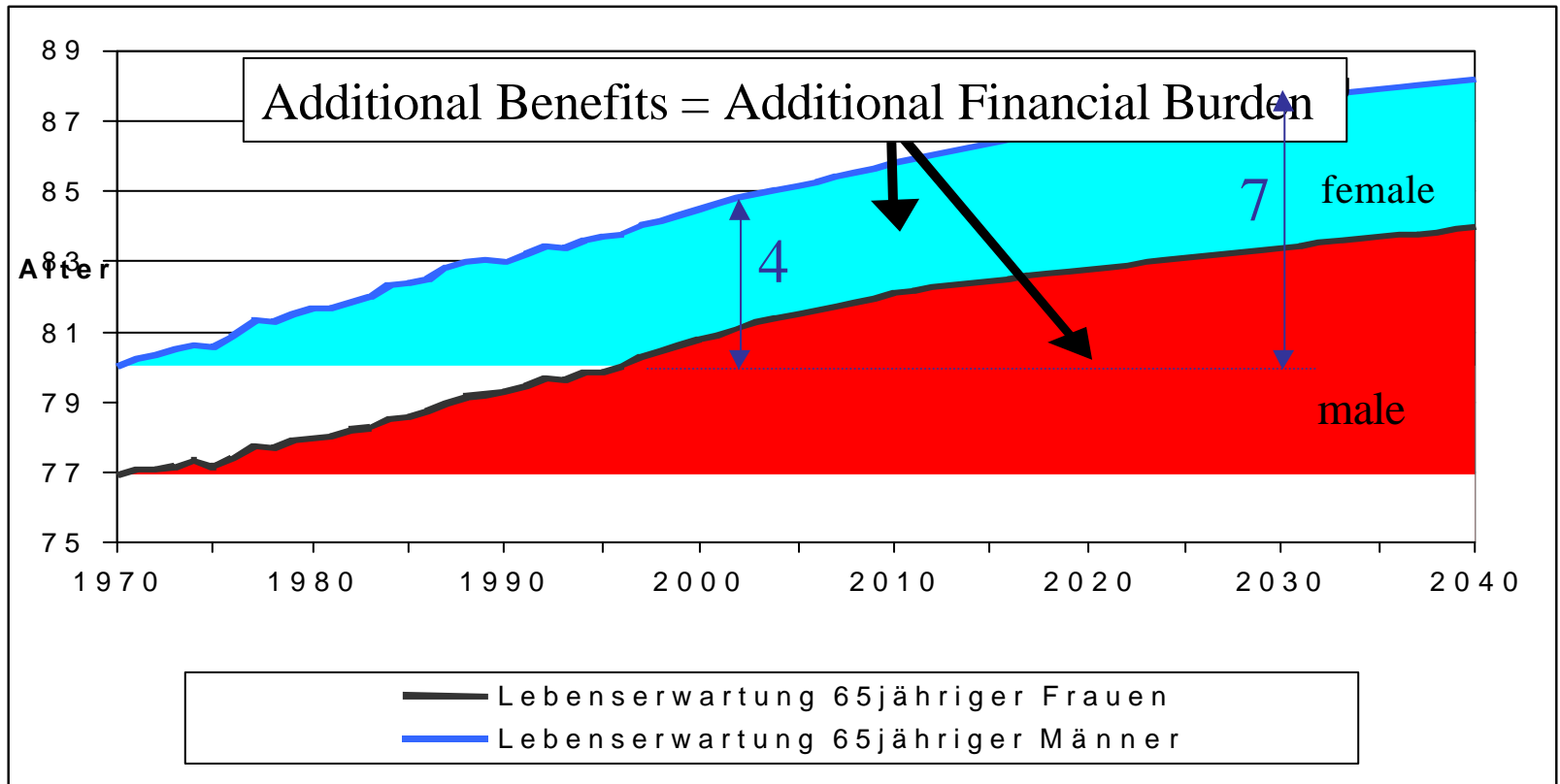
2050



2100

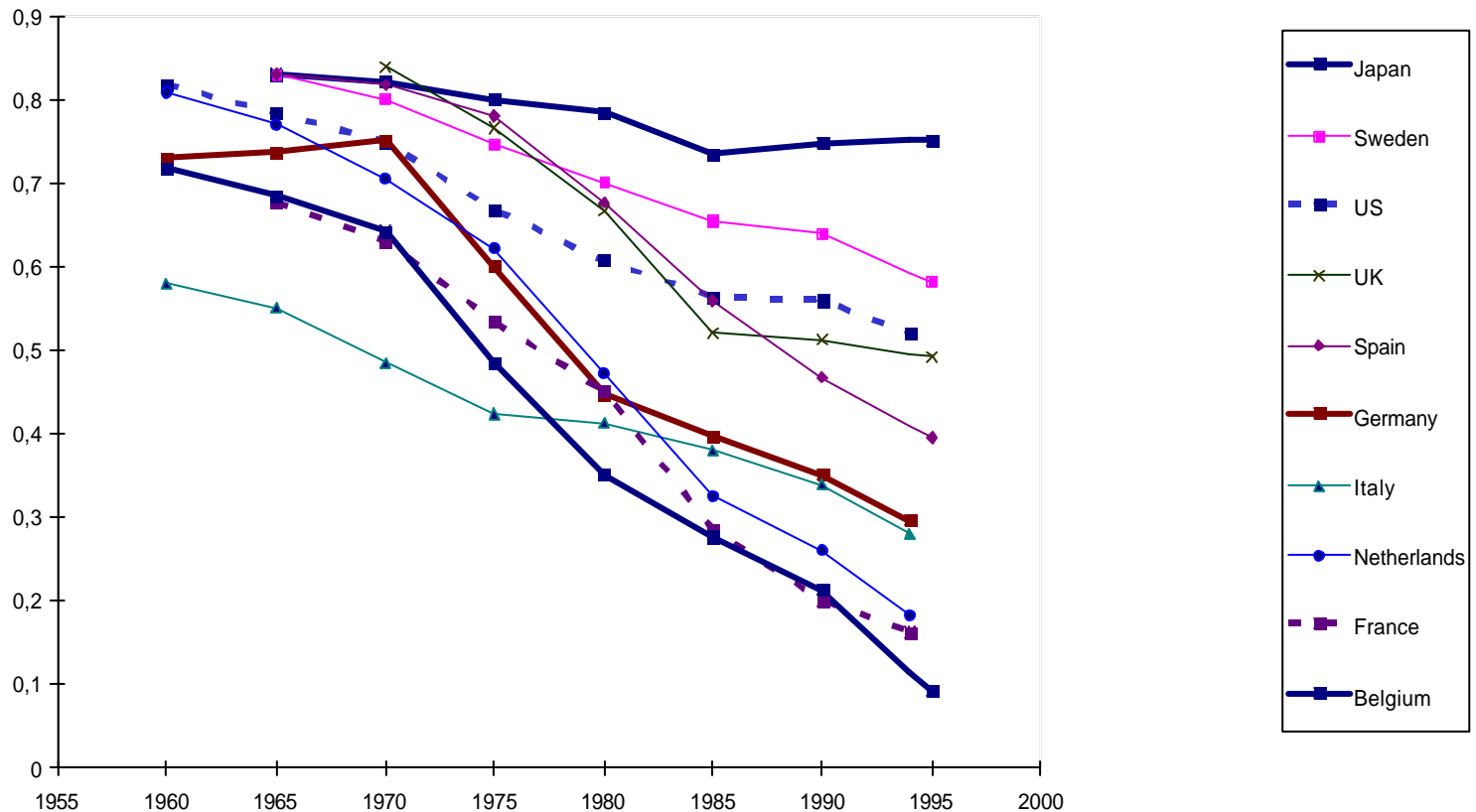


# Figure 5

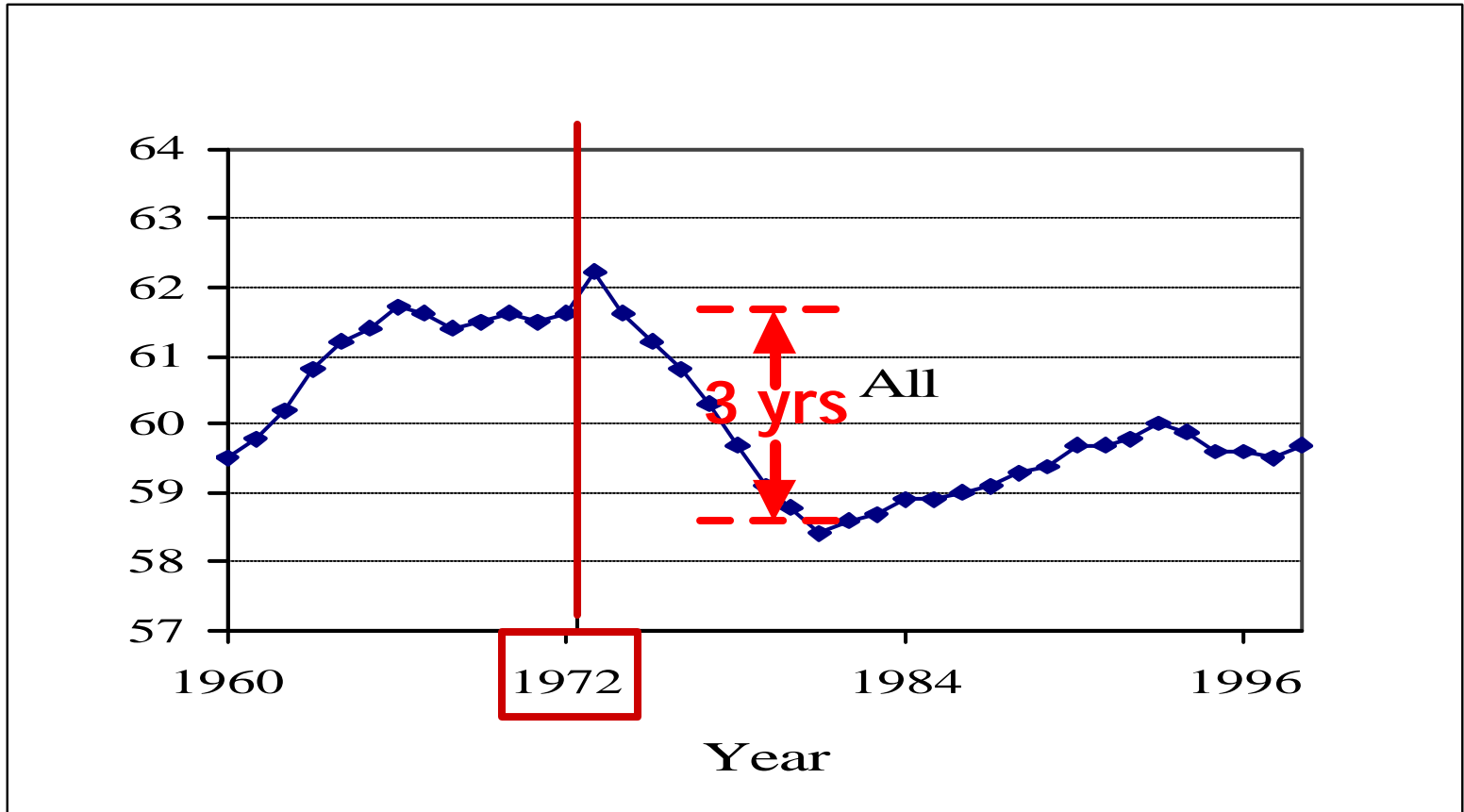


# Figure 6

Labor Force Participation Trends: Men, Age 60-64

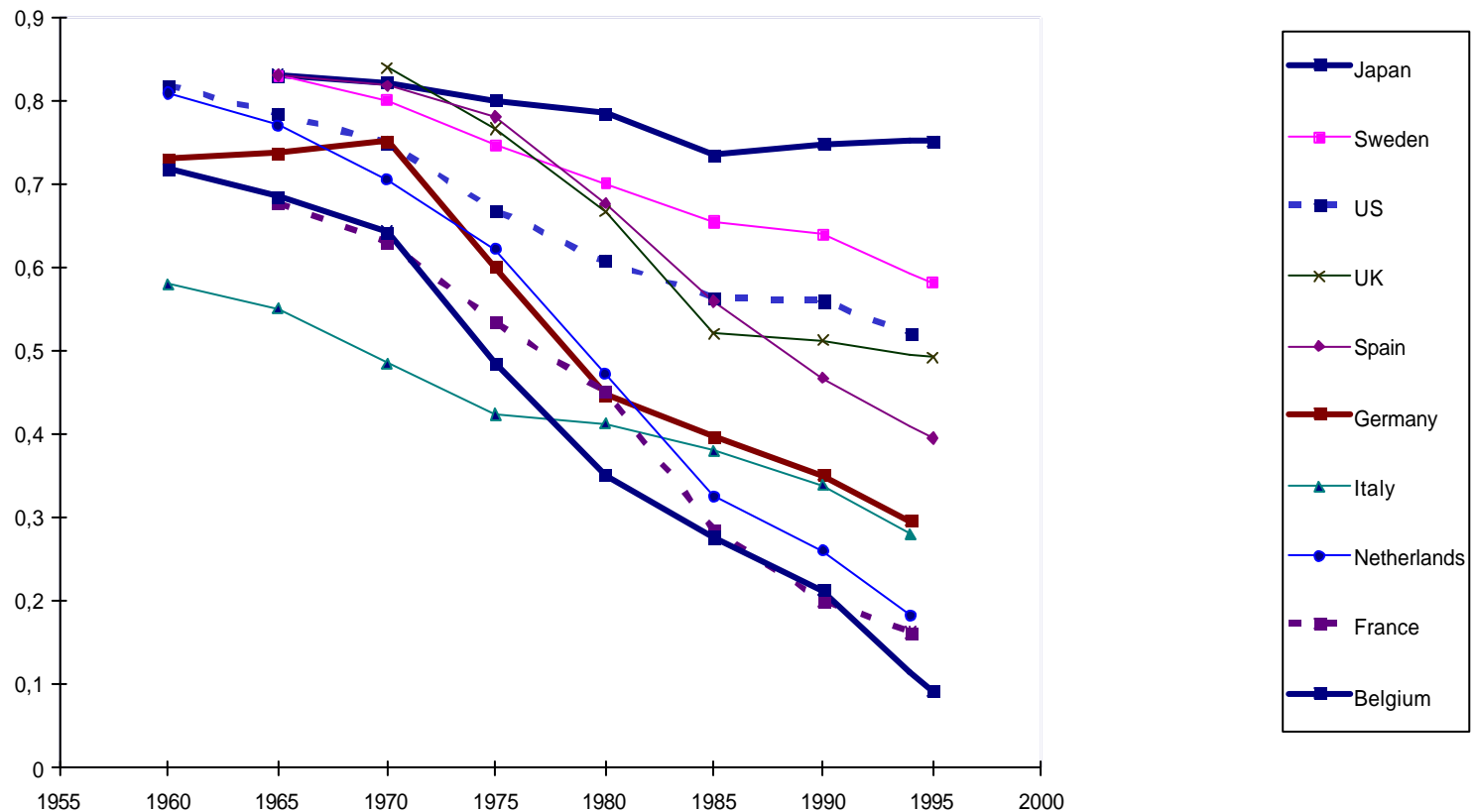


# Figure 6

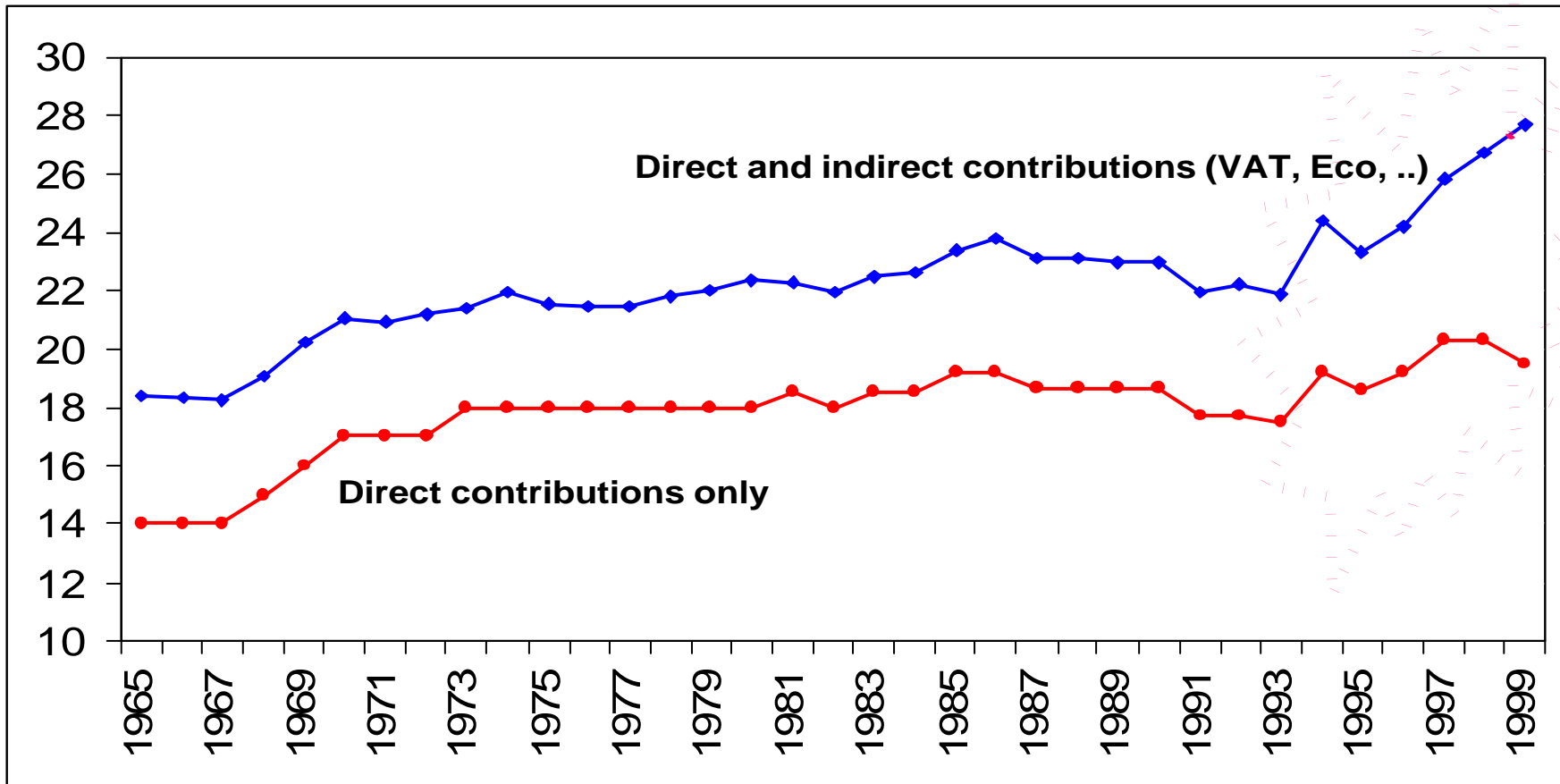


# Figure 7

Labor Force Participation Trends: Men, Age 60-64

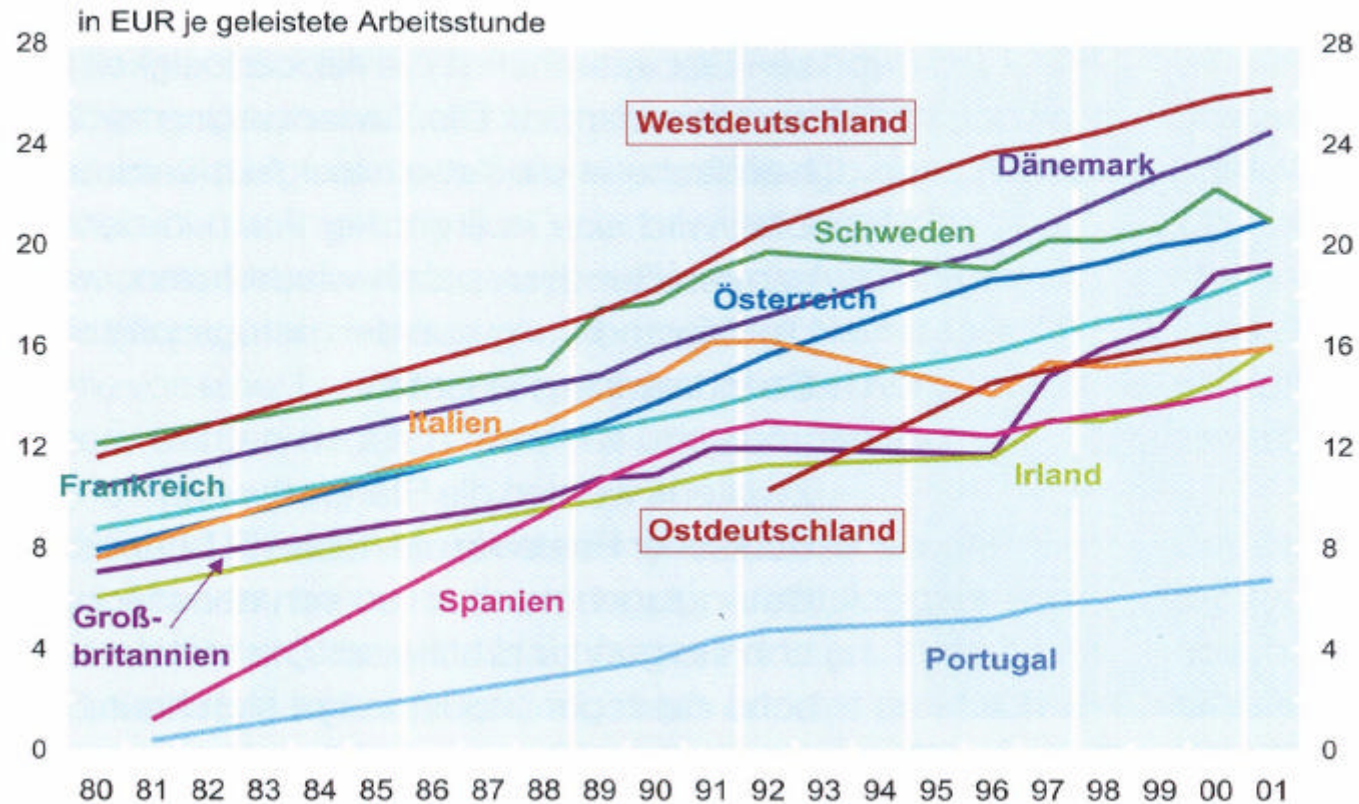


# Figure 8



# Figure 9

**Arbeitskosten je Stunde im Verarbeitenden Gewerbe**  
(weibliche und männliche Arbeiter)



Quelle: Institut der deutschen Wirtschaft.

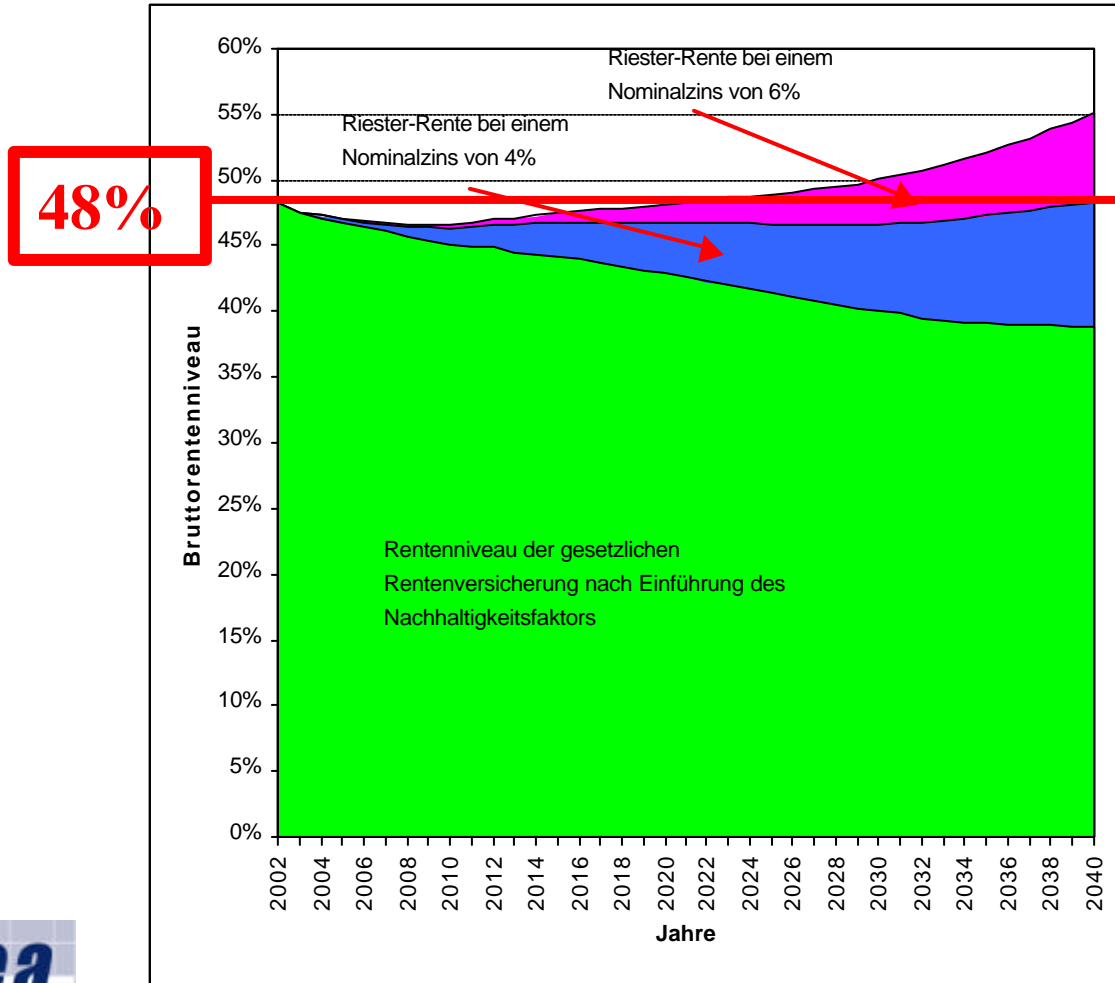
# Figure 10

<p>Annual Pension Increase</p>	<p>Change in earnings, net of contributions (aggregate, lagged)</p>	<p>Change in system dependency ratio („sustainability factor“)</p>
$APV_t = APV_{t-1} * \frac{AGE_{t-1} * \frac{1 - CONT1_{t-1} - CONT2_{t-1}}{AGE_{t-2} * \frac{1 - CONT1_{t-2} - CONT2_{t-2}}{SDR_{t-1}}}}{SDR_{t-2}} * \alpha + 1$		
<p>where:</p> <ul style="list-style-type: none"> <li><i>APV</i> = average pension value</li> <li><i>AGE</i> = average gross earnings</li> <li><i>CONT1,2</i> = contribution to first and second pillar</li> <li><i>SDR</i> = system dependency ratio (number of equivalence pensioners / number of equivalence contributors)</li> </ul>		

The German pension indexation formula



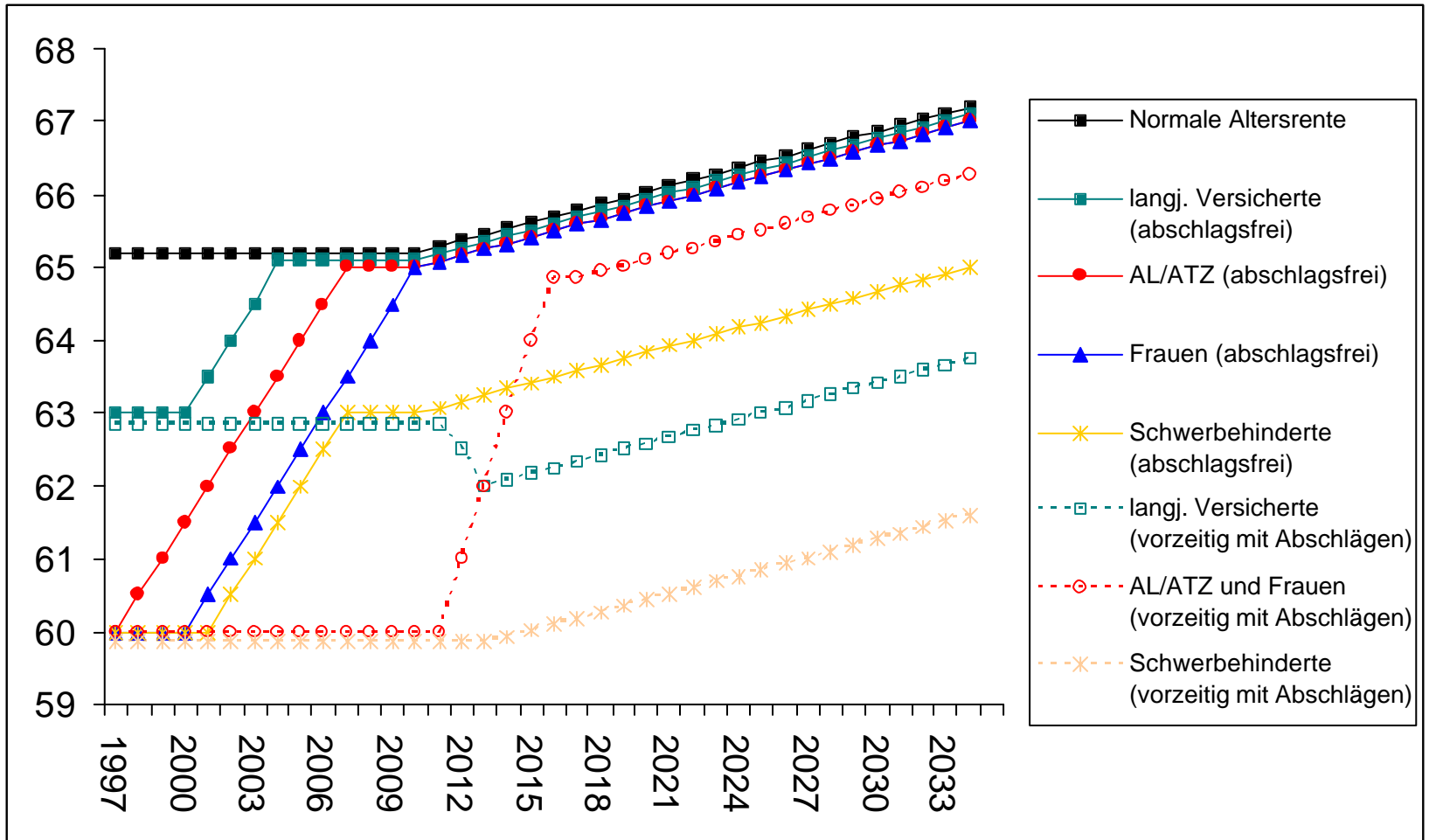
# Figure 11



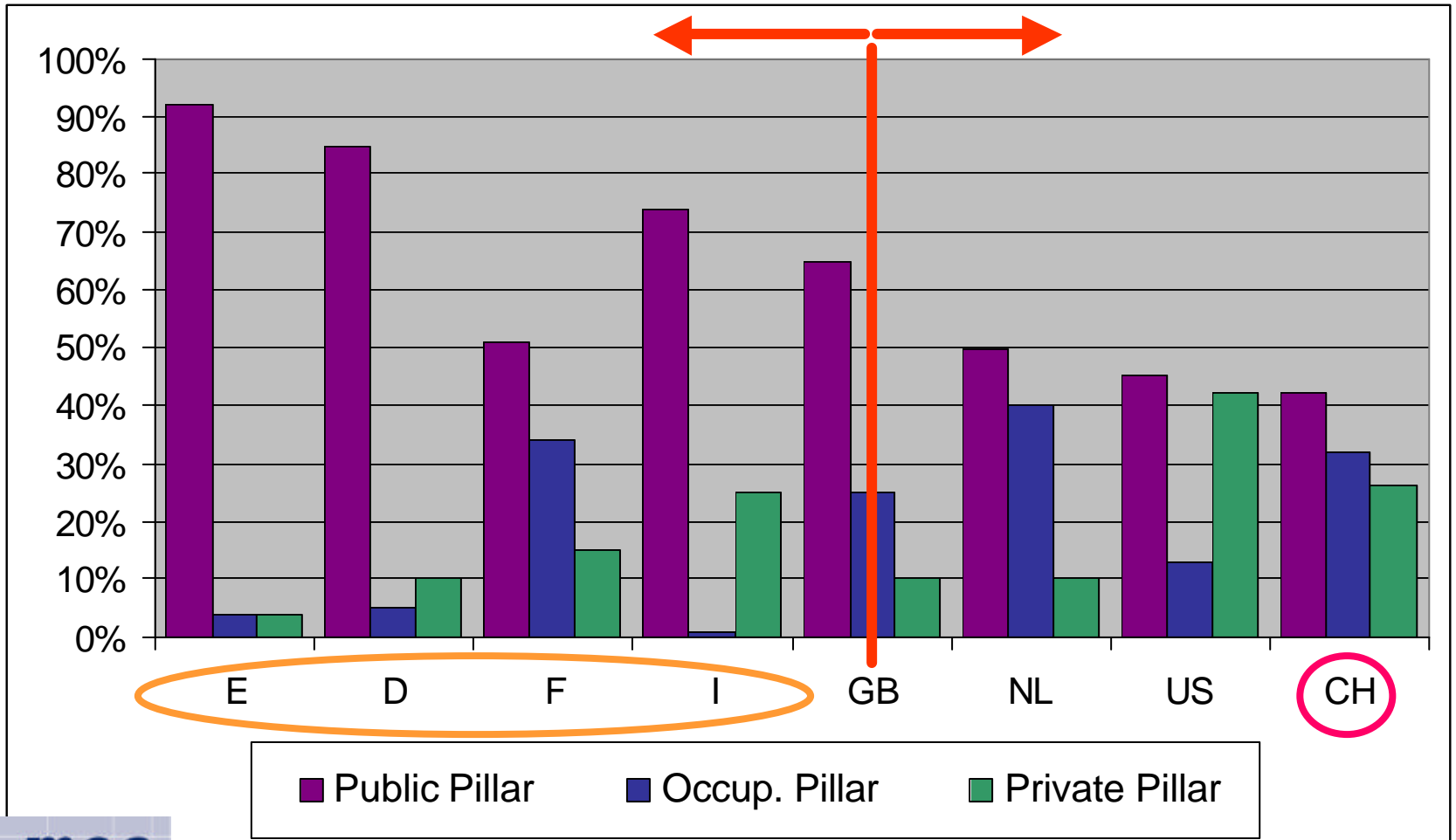
**Funded pillars**  
2 and/or 3 at a  
4% saving rate  
(return = 4% / 6%)

**PAYG pillar 1**  
reduced by  
sustainability  
factor

# Figure 12



# Figure 13



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