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From Generosity to Sustainability: The Austrian Pension System and Options for its Reform

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Abstract

Austria has probably the world's highest pension expenditures relative to its economic size, largely because of the generosity of its pension system. This paper examines the institutional setup of the Austrian pension system and projects its future development based on current policies. The projection results show a swift financial worsening. With the already high level of contribution rates, pension expenditures, and budget transfers, the results underscore the need for reform. Much of this reform can, however, be achieved by maintaining the structure of the system and adjusting some of its key parameters. The paper outlines options for such a reform.

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SUMMARY

Austria is probably the world's leader in pension expenditures—not because of its demographic structure but because of the generosity of its pension system. Contributors can obtain 80 percent of the average of their 15 best years of income as a pension, existing pensions have increased until recently along with gross wages, and disability pensions are allowed liberally so that currently half of all men and one quarter of all women who retire do so on a disability pension. As a result, pension expenditures absorb 15 percent of GDP, and contribution rates are among the highest in Europe, even though substantial budget transfers are needed to balance the system.

This paper analyzes the institutional setup of the Austrian pension system and its current financial situation. It applies a projection model to forecast the financial situation of the present system as a consequence of the imminent aging of the population. The projections are compared to projections for the G7 countries and Sweden. The results show that the financial situation of the Austrian pension system will worsen relatively swiftly compared with the other countries and—like pension systems in France, Germany, and Italy—become unsustainable in the long run. With little room for raising contribution rates or budget transfers, the system can be made sustainable only by reducing the generosity of benefits and thereby containing expenditures.

The paper discusses options for reform. It distinguishes between steps that could be taken immediately—mainly penalizing early retirement; steps that require adjusting key parameters of the system—such as benefit accrual, pension calculation, and annual adjustment; and steps that could be guidelines for further reforms in the medium term—such as increasing the transparency of the system and strengthening the saving function while reducing insurance provisions and hidden redistributory elements.

I. INTRODUCTION

In relation to its economic size, Austria has probably the world's highest level of pension expenditures. It tops the list of 92 countries, comprising OECD countries as well as less developed countries, with 15 percent of GDP spent on pensions (Chart 1).[2] Austria's high spending on pensions is not because of demographics. Although the population structure is unfavorable—with one fifth of the population over 60 years old and an old-age dependency ratio[3] of almost one quarter—it is not exceptional in Europe. Germany, for example, has practically the same population structure and spends considerably less on pensions. Even Sweden, which has the most unfavorable demographic structure in the 92-country sample, spends less on pensions than Austria with just under 12 percent of GDP; the OECD average pension expenditure is about 10 percent of GDP.

What makes Austria the likely world-leader in pension expenditure is the generosity of the system, reflected in two key indicators: the eligibility ratio and the replacement ratio. The eligibility ratio, which measures the share of people in a given age group receiving pensions, is particularly high by international standards for people below the normal pension age, because of widespread use of early retirement. The extent to which Austrians have taken early retirement is remarkable: 85 percent of men and 70 percent of women retire before the statutory retirement age of 65/60 years. The average retirement age has fallen to 58.5 years for men and 57.1 years for women. Of men aged 60-64 years, only 12 percent are still working.[4] Thus, one of Austria's problems is that a large fraction of all pensioners have not yet reached the statutory pension age. Early retirement has served as an escape valve for the labor market, but at a high budgetary cost. Austria's unemployment rate—below 4 percent in early 1996—is the lowest in the European Union, apart from Luxembourg.

The second difficulty for the pension system is the high replacement rate. Pensioners receive a high percentage of their incomes (up to 80 percent of the average of the best 15 years of income). In addition, the level of pensions has for some time risen faster than nominal incomes of those still working. The penalty for taking early retirement, in terms of a lower pension, has thus far been small.

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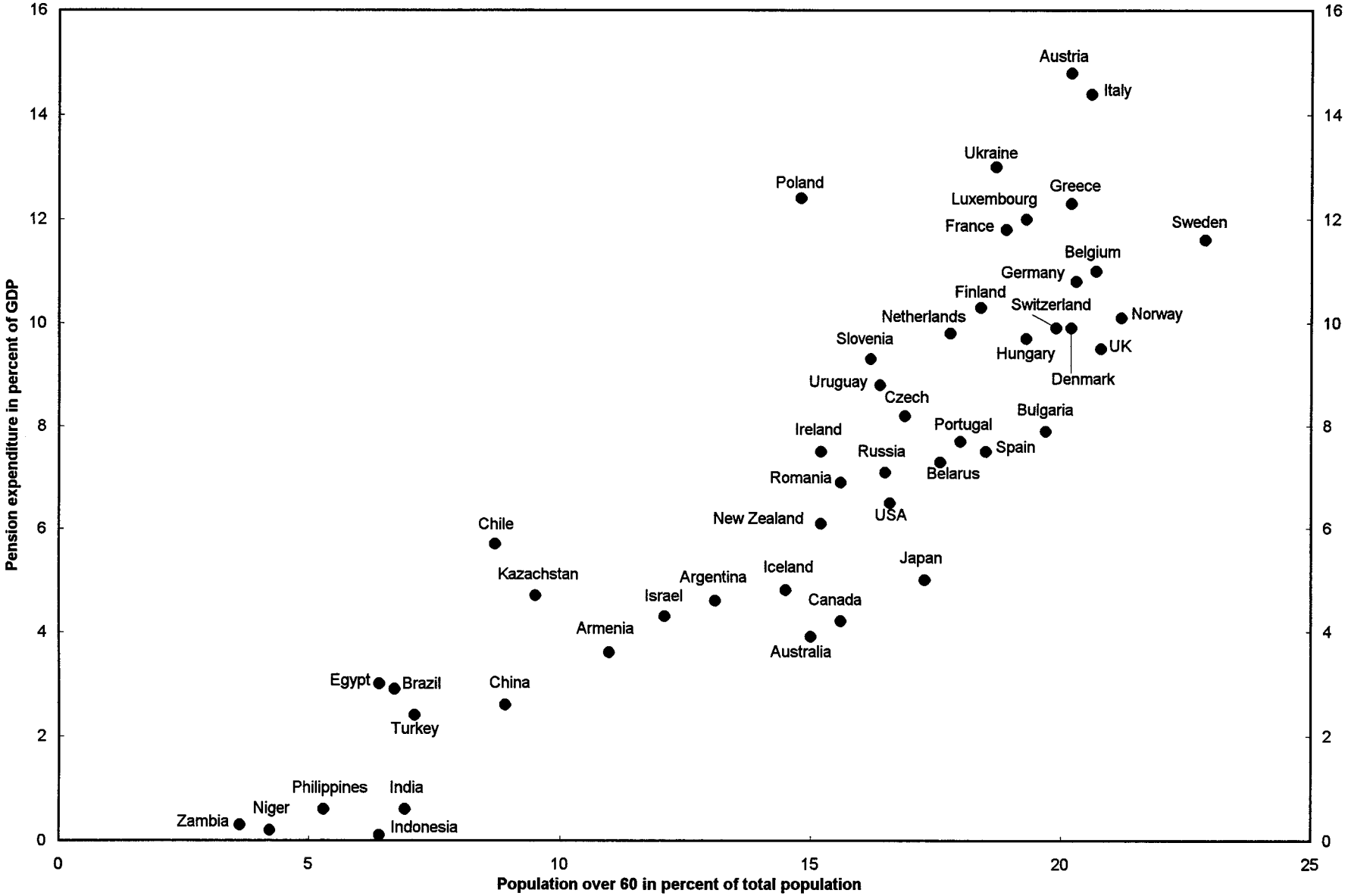
[2] World Bank (1994b), p. 343ff. and p.358ff. Most of the data in Chart 1 refer to the period 1992-94. Recent OECD statistics show Italy slightly ahead of Austria with 15.2 percent of GDP in 1993 (OECD, 1995).

[3] Population over 64 years in relation to population 15-64 years.

[4] Bundesministerium für Arbeit und Soziales (1995a), p. 106.

Chart 1. Public Pension Expenditure and Demographics in 46 Countries



Source: World Bank, *Averting the Old Age Crisis*, Washington 1994, pp. 343-348 and 358-360. (Of the total sample of 92 countries, many of the developing countries with low pension expenditures and a young population are not shown for legibility reasons.)

The financial situation of the Austrian pension system is, however, not as critical as one might suspect, given the problems outlined above. Budget transfers needed to balance the system are high but not exceptional in Europe. What sustains the Austrian system is a high contribution rate of 22.8 percent of gross wages (paid jointly by employee and employer),[5] compared, for example, with 20.3 percent in Germany. However, this is also part of the medium-term problem: since international competition will pressure Austria to reduce labor costs, raising contribution rates may not be an option to meet the challenge of an aging population. The impending deterioration of old-age dependency ratios will thus have to be dealt with by budget transfers if the system's balance were not improved. Without a decisive change of policies, these transfers will soon have to increase sharply.

This paper analyzes the medium- and long-term outlook of the Austrian pension system, provides comparisons with other industrial countries, and discusses the scope and possible steps for reform. Section II provides an overview of the pension system with a description of past trends in its key parameters; Section III presents a projection model and applies it to the Austrian case. Section IV discusses the policy implications and reform options, and Section V concludes the paper.

II. The Austrian Pension System

A. The Institutional Setup

The Austrian pension system is a pay-as-you-go type. It covers practically the entire workforce, since it is mandatory for all employees and for a large number of the self-employed. It provides old-age, disability, and survivor pensions. Old-age pensions can, under some circumstances, be paid in the form of early retirement pensions. Disability pensions, which account for a large fraction of all pensions, have been used increasingly to grant early retirement in cases where the conditions for old-age pensions on an early retirement basis (e.g., sufficient number of contribution years) were not met.

The tendency toward early retirement has altered the composition of new pensions dramatically: in 1994, only 13 percent of the new pensions for men were regular old-age retirement pensions, about half the rate prevailing in 1970. The remainder were either early retirement pensions in the form of early old-age pensions (34 percent) or disability pensions (53 percent). For women, the decline in regular old-age pensions as a share of all new pensions has been similar (Table 1).

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[5] They have to pay 10.25 percent and 12.55 percent, respectively.

Table 1. Composition of New Pensions,[1] 1970-1994
(In percent)

	Men			Women		
	1970	1980	1994	1970	1980	1994
Regular old-age pensions	25	10	13	62	40	28
"Early" old-age pensions	43	51	34	13	31	49
Disability pensions	32	39	53	25	29	23

Source: Bundesministerium für Arbeit und Soziales, *Bericht zur sozialen Lage 1994*, p. 104.
[1] Excluding survivor pensions.

As a consequence of the extensive use of early retirement, the actual retirement age has declined significantly below the statutory pension age of 65 for men and 60 for women. In 1994 men took (regular and early) old-age pensions on average at 60.8 years and disability pensions at 50.4 years. Weighted by the relative size of both groups, men retired on average at the age of 58.5 years. For women the difference between the statutory and actual pension age is smaller than the difference for men because the statutory retirement age is 5 years lower for women than for men, and, due to a generally shorter employment history, they reach full eligibility later. On average in 1994, women retired at the age of 57.1 years (Table 2).

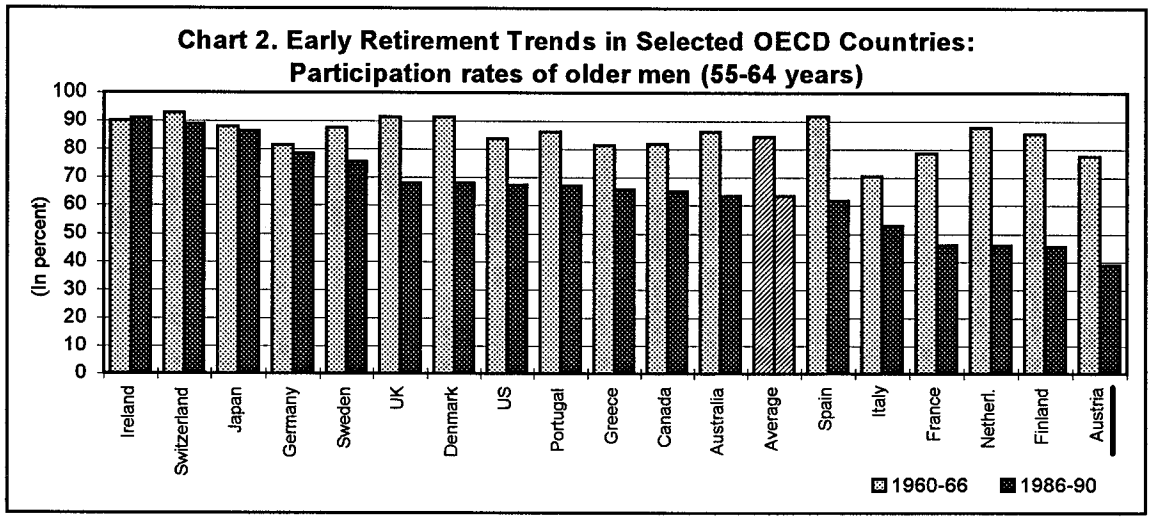
Table 2. Average Retirement Age, 1970-1994
(In years)

	Men			Women		
	1970	1980	1994	1970	1980	1994
Old-age pensions	64.2	62.5	60.8	61.5	59.5	58.4
Disability pensions	56.6	53.9	50.4	56.6	55.1	49.5
All retirement pensions	61.9	59.2	58.5	60.4	58.3	57.1
Expected pension duration[1]	13.0	15.3	19.0	18.8	20.8	24.5

Sources: Bundesministerium für Arbeit und Soziales, *Bericht über die soziale Lage 1994*, p.89; Hauptverband der Sozialversicherungsträger, *Handbuch zur Sozialversicherung 1995*, p. 63.
[1] Difference between life expectancy at retirement and retirement age for the average of all retirement pensions.

The average duration of pensions has increased by even more than the falling retirement age would suggest, due to a simultaneous increase in life expectancy. For men taking old-age pensions, for example, pension duration has increased by almost one half since 1970, from 13 to 19 years (Table 2). The major risks of early retirement for the sustainability of the pension system thus stem from the fact that early retirement has two effects: first, it reduces the number of contributors while at the same time increases the number of pensioners, thereby tilting the pensioner/contributor ratio from both sides; and second, since early retirement takes place while life-expectancy rises, it increases the ratio of pensioners over contributors by even more.[6]

Although there are trends towards increased early retirement in most industrial countries, Austria's practice of early retirement is still remarkable. In the late 1980s, only 40 percent of men aged 55-64 in Austria were working. This is the lowest participation rate of older men in the OECD (Chart 2). The average participation rate of older men in the OECD at that time was 63 percent.



Source: World Bank, *Averting the Old-Age Crisis*, 1994, p. 322.

The basic formula for calculating old-age pension levels is based on three parameters: the retirement age, years of contribution, and the level of income (where the average of the best 15 years is taken). Years of contribution are all periods of employment and certain other periods such as unemployment, military service, and years spent at home raising children. For each child, one parent is given credit for 4 years of contribution. Contribution years can also be purchased retroactively for periods spent in higher education or vocational training. The

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[6] Earlier studies of the detrimental effects of early retirement on the finances of the Austrian pension system include Busch (1986 and 1992) and Butschek (1991).

maximum replacement rate is 80 percent. It is reached for men at age 65 if the would-be pensioner has accumulated 40 contribution years, or earlier in case of a longer contribution period. For each year of retirement earlier or each year less of contributions, the replacement rate is lowered by 1.9 percentage points for the first 30 years of contributions, and by 1.5 percentage points thereafter.[7] If early retirement takes place on the basis of a disability pension, however, the replacement rate is lowered by less.

To put the Austrian institutional setup into perspective, Table 3 provides the main characteristics of public pension schemes in selected industrial countries. The countries are the G-7 countries plus Sweden. The latter was included because of its large public sector and mature demographic situation.

The main characteristics of the public pension schemes in Austria and the other countries differ markedly. This international comparison underlines the generosity of the Austrian system: at 80 percent, the maximum replacement rate is the highest in the sample and on a par with that in Italy; earnings are assessed on the basis of the best 15 years rather than the entire career as in most other countries; and pension benefits are indexed to net wages so that pensioners participate in productivity growth and receive increases that are at times significantly higher than inflation rates.

In the past, pensions have often increased faster than wages and often far ahead of the price level. From 1965 to 1995, pensions increased by 465 percent, compared with an increase in the price level of 260 percent.[8] This has led to pensions which are not far below average net earnings (i.e., incomes net of contributions and taxes): in 1994, the average old-age pension for men was S 13,400 ($1,340) a month. The rate structure of the tax code implies that the average tax rate on this pension, after deductions, is approximately 15 percent, resulting in an average net old-age pension for men of S 11,400 per month. This compares with the average net earnings of men of S 14,900, implying an average replacement rate of 76 percent. Much of the relatively high level of pensions can be explained by the fact that until 1993 pensions were adjusted according to the growth in gross wages. Since the 1993 pension reform, pensions have been adjusted in line with the growth in net wages. However, "net wage" adjustment in the Austrian case means wages after social security contributions but before taxes. Due to the progressivity of the tax system this implies higher increases than in other countries where the pension adjustment is made according to wages net of contributions *and* taxes.

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[7] In the 1996/97 fiscal consolidation package, the second factor has been increased to 2 percentage points in an effort to increase the implied penalty for early retirement and thereby raise the actual pension age towards the statutory one.

[8] Bundesministerium der Finanzen (1995), p. 99.

Table 3. Characteristics of Public Pension Schemes in Selected Industrial Countries

Country	Financing 1/	Retirement Ages 2/ (Men/Women)	Contribution Period for Full Pension	Benefit Accrual Factor 3/	Assessed Earnings	Maximum Replacement Rate	Indexation of Benefits
Austria	PAYG	65/60	40	4/	Best 15 years	80.0	Net wages
United States	PF	65/65	35	5/	Career	41.0	Prices
Japan	PF	60/55	40	0.75	Career	30.0	Net wages
Germany	PAYG	65/60	40	1.50	Career	60.0	Net wages
France 6/	PAYG	60/60	38	1.75	Best 12 years	50.0	Prices/Gross wages
Italy	PAYG	62/57	40	2.00	Last 5 years	80.0	Prices
United Kingdom	PAYG	65/60	50	0.40	Career	20.0	Prices
Canada 7/	PAYG	65/65	40	0.50	Career	25.0	Prices
Sweden 7/	PF	65/65	30	8/	Best 15 years	60.0	Prices

Sources: Van den Noord and Herd (1993), Table 1.1; Chand and Jaeger (1996), Table 3; and authors' calculations.

1/ PAYG = Pay-As-You-Go. PF = Partially Funded.
2/ Statutory retirement ages as of 1995.
3/ Benefit accrual factor per year of contributions, in percent of assessed earnings.
4/ Benefit accrual factor declines from 2.11 to 1.6 as the number of contribution years increases.
5/ Benefit accrual factor increases as assessed earnings decline.
6/ The basic scheme is indexed to prices, while the earnings-related schemes are indexed to gross wages.
7/ For earnings-related scheme only.
8/ Benefit accrual factor declines as number of contribution years increases.

In Austria, the workforce is grouped in different pension schemes, depending on employment type and sector. The two main schemes are those of employees and the self-employed. The first covers all blue- and white-collar workers; the second covers most of the self-employed (e.g., business owners, auditors, journalists, dentists, and farmers). Remaining groups of the self-employed (e.g., physicians, notaries) have separate schemes, which are, however, small. When the two main schemes are taken together, over 80 percent of the workforce is included.

The only major group left out of the two main pension schemes are the civil servants. In 1994 there were slightly more than 300,000 civil service pensioners and survivors (including those who had worked in public enterprises) who received benefits of roughly S 95 billion, or 4.2 percent of GDP.[9] These pensions are paid directly out of the federal and state budgets and there exists no contribution scheme. Since they are not financed through an insurance-type scheme, these civil service pensions are not dealt with in this study.

Table 4. Size of the Two Main Pension Schemes, 1994
(In thousands of persons)

	Employees' Pension Scheme	Self-employed Pension Scheme	Total
Contributors	2,813	416	3,229
Pensioners[1]	1,034	238	1,272
Ratio of contributors/pensioners	2.7	1.7	2.5

Source: Hauptverband der Sozialversicherungsträger, *Statistisches Beiheft 1994*, Table 5.21.
[1] Excluding recipients of survivor pensions.

The employees' scheme has a relatively healthy ratio of contributors to pensioners of 2.7; the self-employed scheme, in contrast, has only 1.7 contributors per pensioners (Table 4). The implications of this difference on the equilibrium contribution rate can be seen from a back-of-the-envelope calculation. Let revenues be given by the contribution rate c times the average wage level and the number of contributors C; and let expenditures be given by the

[9] Austria's total pension expenditures of roughly 15 percent of GDP in 1994 consist of 10.2 percent of GDP for the two main pension schemes of employees and the self-employed, 4.2 percent of GDP for the civil servants, and approximately 0.5 percent of GDP for accident-related pensions paid by the accident insurance.

replacement rate r times the average wage level and the number of pensioners P.[10] Thus, without budget transfers, the contribution rate balancing revenues and expenditures is $c=r\cdot(P/C)$. If the average replacement rate for direct pensions were targeted at 75 percent, the equilibrium contribution rate for the employees' scheme would be 28 percent, and it would be as high as 44 percent for the self-employed—compared with the actual rate of roughly 20 percent for both schemes.

B. Institutional Shortcomings

In its early days, the pension system was mainly an insurance scheme to cover a worker (mostly male) and his family in case he lived beyond his working career and to cover his survivors in case of his death. The necessity to transfer income from people's working years to the years of retirement (i.e., the saving or wage replacement function of pension schemes) was less relevant. Thus, the most important part of the system was to insure against the event that a worker lived beyond the statutory retirement age. This event was far from certain since life expectancy exceeded the retirement age by just a small margin. Today, the economic environment is fundamentally different: the probability that a contributor lives beyond the statutory retirement age is practically unity and there are fewer dependents to take care of (fewer children; spouses have own entitlements). At the same time, average pension duration is more than twenty years. Thus, the insurance element is negligible and the saving element dominates. Furthermore, there is competition for the public savings scheme: workers on average have significant net wealth, and financial markets exist which provide a large number of saving instruments.

In this new environment, the optimal pension system might look very different from the one designed one hundred years ago. In Austria, as in many other industrial countries, the necessary adaptation of the system did not take place and left the system with some institutional shortcomings. These shortcomings—which are by no means unique to the Austrian pension system—have in a systematic way contributed to the system's difficult financial situation as well as to the difficulty of its reform (see also OECD, 1994, p. 76). The main institutional shortcomings of the Austrian pension system in its present form are (i) the multiobjective approach of the system; (ii) the institutional split between design and financing responsibilities; (iii) the inclusion of large non-contribution related claims, and (iv) the possibly long lag between the time when political decisions affecting the structure of the system are made and when their financial implications materialize.

Like many other single-pillar pension systems that rely entirely on pay-as-you-go transfers between generations, the Austrian pension system seeks both to generate savings for old age provision (by accumulating pension claims) and to cover the risk of poverty in case of

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[10] Since pensions are indexed to (net) wages, the average wage level on both sides is roughly the same.

disability and unexpected longevity.[11] These two objectives are, however, in conflict. A saving mechanism that is actuarially fair requires a close link between contributions and benefits because the value of the savings is measured by the rate of return on contributions. In generating savings, the pension system competes against pension saving plans offered by private financial institutions. The volume of such plans has grown rapidly in the past, indicating the success of private compared with public pension saving. This trend will be aggravated to the extent that slower population growth causes the rate of return in the pension system to fall further below the long-term interest rate in private schemes. The second aim of the pension system, to provide resources for early disability or unexpected longevity, calls for an insurance arrangement since both events are unpredictable at an individual level. As an insurance arrangement, it displays only a loose link between contributions and benefits. Like many other systems, the Austrian pension system tries to achieve both the saving and the insurance objectives, but it faces dwindling returns and increasing costs; furthermore, it suffers from a lack of transparency because of various elements of cross-subsidization and from the fact that it is used as a vehicle to reduce unemployment through early retirement schemes.

A second institutional shortcoming of the Austrian pension system is the split of responsibilities between the social partners and the federal government. The social partners are representative bodies of employers and employees; they are non-governmental and thus independent institutions. They administer the pension system and manage the pension insurance bodies. Since the pension system provides benefits to both employees and employers but also levies contributions from both of them, they have a joint interest in increasing benefits while keeping contributions low. In the case of Austria, there is not necessarily a tradeoff between these interests because the federal government has the obligation, by law, to make up for the difference between the annual contributions collected and pension benefit expenditures, and there is no arrangement or cap limiting this obligation.

The financing obligation on the side of the government has mainly been justified by politically desired non-contributory elements, of which the Austrian pension system displays many: there is a minimum level of pensions even for those whose contributions would otherwise imply a lower entitlement, and there are periods during which individuals pay no contributions—such as unemployment, sickness, maternity, or military service—and which nevertheless count as contribution periods and increase the individuals' pension claims. Since it is not clear who pays for these non-contributory elements, there has been constant pressure to extend them. This has led to the opening-up of the Austrian pension system to new groups and has led to higher entitlements for existing groups, even though the system lacks an actuarially sound footing.

The fourth shortcoming concerns the time lag between system changes and the materialization of the costs. It is part of the nature of a pension system that the full costs of any increases in entitlements materialize only with a time lag. Such increases—for example

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[11] See among others Glismann and Horn (1995), p. 311, and Schwarz (1995).

through a more generous provision of non-contribution periods—may seem feasible under immediate financial conditions but become increasingly burdensome over time, especially with the aging of the population. Thus, an immediate comfortable financial position may create the tendency to increase entitlements and pension benefits beyond the level which would be sustainable in the future.[12] This problem of the Austrian pension system will be quantified in the projections.

C. The Financial Situation

Revenues and budget transfers

The primary source of revenues for the Austrian pension system are contributions from the workforce. However, for the past 20 years, these pay-as-you-go contributions have not fully covered pension outlays; a significant fraction of outlays—around 20 percent on average—was covered by budget transfers.[13] The rate of increase of contributions was, however, roughly equal to that of expenditures. Consequently, the fraction of budget transfers did not increase significantly during this period. This has come about also because contribution rates have more than doubled since 1960 and are now among the highest in Europe.

The contribution rate is currently 22.8 percent of gross wage income, paid jointly by the employee (10.25 percent) and the employer (12.55 percent).[14] In 1995, contributions covered 80 percent of total pension expenditures. For the employees' scheme, they covered 87 percent of pension expenditure. For the self-employed pension fund, however, contributions (at an average level somewhat above 20 percent) covered only 32 percent, leaving almost 70 percent of the total outlays to be covered by budget transfers. For each pensioner in the self-employed scheme, the average budget transfer is S 100,000 ($10,000) per year. Even though the scheme is of the pay-as-you-go type technically, it comes close to the civil servants' scheme, which is fully covered by the budget.

Since the contribution rate is high by international standards, competitive pressure against the background of a strong currency limits any further increase. But also domestically,

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[12] The problem of short-sighted policy measures could be particularly relevant in the Austrian case since there is no independent body which provides analysis and assesses the current and future actuarial status of the system without making policy recommendations—like the "Government Actuary" in the United Kingdom or the "Board of Trustees" in the United States.

[13] Bundesministerium für Arbeit und Soziales (1995a), p. 77.

[14] Contribution rates differ slightly for a few small groups (e.g., miners), but the differences are negligible. Cf. Hauptverband der Sozialversicherungsträger (1995c).

in view of rising unemployment, any increase to unit labor costs or disincentives to work by increasing non-wage labor costs would be inadvisable. Therefore, if the imbalances in the system worsen due to aging, the federal government, which is required by the Constitution to cover gaps in the finances of the pension schemes, will have to increase its transfers. But even a constant share of budget transfers would actually indicate a worsening of the schemes' imbalances because the main justification for government transfers in the first place—to make up for war-related periods of non-contributions by older generations—has lost its significance and will disappear soon.

Pension expenditures

From an economic point of view, both the level and the determinants of pension expenditure are of interest. Among the major determinants are the number of persons receiving pensions, the average pension per pensioner, and the adjustment of pensions to developments in the economy. The level of pension expenditure is of interest because of its role in the allocation of resources in the economy and because it redistributes incomes between and within generations.

Total pension expenditures in Austria in 1994 amounted to S 340 billion or 15 percent of GDP. Austria's pension expenditures have traditionally been high compared to those of other countries, and they have also risen in terms of GDP. In 1970, Austria spent 11.5 percent of GDP on pensions, more than any other OECD country at that time (for example, Germany spent 10.5 percent, Denmark 7.2 percent, and Sweden 6.2 percent), and since then the spending on pensions has risen faster than that of the other OECD countries.[15]

The two main groups covered in this paper, the employees and the self-employed, accounted for S 236 billion or 10.2 percent of GDP in 1994. The remainder are civil service pensions and accident-related pensions paid by the accident insurance. In its 1996/97 fiscal consolidation package, the government decided to exclude its new staff from civil service pensions and required them to join the general pension system. This will increase the system's contribution coverage in the short run. The immediate effect on the budget, however, is less clear, since the fact that new civil service staff have to pay contributions may imply higher gross wages in the public sector. In the long run, federal transfers to the pension system may also have to increase when the new staff draws pensions that exceed contributions.

In the 1990s, pension expenditures increased by 4.8 percent in nominal terms per year on average; in the 1980s the average annual increase was 7.0 percent. An increase in pension expenditures can be attributed to three reasons: population aging, increases in the real values of pensions, and the extension of the system to new groups, including an increasing share of the workforce opting for early retirement. According to an OECD study, of the increase in pension expenditures in Austria between 1960-85, 26 percent is traceable to population aging,

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[15] OECD (1989), p. 65.

and 33 percent to increases in the real value of pensions. The major driving force, accounting for 41 percent of the increase, was the extension of the system to new groups and early retirement.[16] Given the estimates of the Council for the Adjustment of Pensions, the total number of early retirees will further increase considerably until 1999.[17]

On average, a male old-age pensioner received in 1994 S 13,400 a month; a female old-age pensioner received S 7,600. Interestingly, the 1994 average pension of all male pensioners was slightly higher than the average pension of new male pensioners. The opposite is true for female pensioners; new female pensioners receive higher pensions on average (S 8,300) because of increases in allowances for child-raising.

III. Medium- and Long-Term Outlook

A. The Projection Model

This section shows how the Austrian pension system will be affected by the impending demographic changes if it maintains its present institutional setup—including its present contribution rates, replacement rates, and eligibility ratios. The development of the pension system is thus projected on unchanged policy assumptions. In principle, since the federal government has the legal obligation to cover any deficit arising from the pension system, the system will always be balanced. In the projections, however, we define "unchanged policies" to mean that all parameters of the system remain fixed and the budget transfers in relation to GDP remain at the present level. Therefore, the additional deficit (or the increase in the budget transfer that would be necessary to continue to balance the system) will indicate the worsening of the financial situation of the system in the projection.

The macroeconomic framework in the projection model consists of the main macroeconomic aggregates such as capital stock and labor force and a number of key economic variables.[18] The model used for the projection is a partial equilibrium model in that there are no repercussions from the demographic changes on economic behavior. Its core is the pension system, which includes all employees and the self-employed, but excludes civil servants. The base year is 1994, and the time horizon goes through 2050. In the short run, the growth projection follows closely the IMF's *World Economic Outlook*; in the long run, growth is determined by technological progress and employment growth.

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[16] OECD (1989), p. 67.

[17] See Lehner (1995), p. 758; and also *Beirat für die Renten- und Pensionsanpassung* (1995).

[18] See Chand and Jaeger (1996, Appendix I) for a technical description of the model. Since the schemes for employees and the self-employed vary in their setup, they were treated separately in the model and the results were subsequently aggregated.

The main quantitative assumptions are as follows: until 2000, real GDP growth is 2.5 percent per year on average, attributable to capital deepening and exogenous labor-augmenting technical progress (1.5 percent per year); due to aging, employment is declining marginally. After the year 2000, GDP growth is 1.5 percent per year on average and employment is declining by 0.04 percent per year on average. The real interest rate is 3.5 percent throughout. The inflation rate is 2.5 percent.[19]

In the model, the entire population is broken down by sex and age groups in five-year age cohorts. For each cohort, the relevant variables—participation rate, unemployment rate, share of pensioners, and average wage level—are based on actual figures for the base year.[20] This breakdown provides the wage bill of all contributors and thereby the basis for contributions. Multiplied by the contribution rate this yields the amount of contributions. The breakdown also provides the cohorts of pensioners, broken down by sex and age cohorts with their average pension benefits, and thus the total volume of pension expenditures. The gap between expenditures and contributions is covered by budget transfers, which equal the actual figure for the base year.

The projections are made keeping most of the present structure of the economy fixed. On the side of the labor force, the structure is reflected in participation rates, unemployment rates, and relative wage levels of each age cohort. On the side of the pensioners, it is reflected in eligibility ratios, replacement rates, and contribution rates. To be specific, for the group of males aged 50-54 for example, wages compared to the economy average are 142 percent; the participation rate, 49 percent; the unemployment rate, 6 percent; the share of pensioners in this age group, 6 percent; and their pension relative to the average pension, 117 percent. These rates are kept fixed during the projection period. The driving force behind the changes in the pension system are demographic developments, which change the relative sizes of each cohort and thus the financial balance of the pension system.

The demographic projection is taken from World Bank (1994a) and is practically identical to the population projections made by the United Nations (Table 5).[21] The projection reflects assumptions on future trends in fertility, life expectancy, and immigration flows.

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[19] The macroeconomic framework for the projections of the other countries is similar; see Chand and Jaeger (1996) for details.

[20] The main sources are: Hauptverband der Sozialversicherungsträger, *Statistikdatenbank: Statistische Daten aus der Sozialversicherung*; Österreichisches Statistisches Zentralamt, *Sozialstatistik*; and Bundesministerium für Arbeit und Soziales (1995a,b).

[21] Data on future demographic trends in the selected industrial countries are taken from the World Bank's *World Population Projections 1994-95*. The World Bank population projections for Austria are also similar to Austria's official demographic projections.

Table 5. Demographic Trends in Selected Industrial Countries, 1995-2050

	1995	2000	2010	2020	2030	2050
Austria						
Population (1995=100)	100.0	101.1	100.1	99.9	99.4	98.4
Elderly dependency ratio	22.5	23.3	27.7	32.6	44.0	49.3
Very elderly ratio	40.8	46.0	45.2	48.5	45.1	60.6
United States						
Population (1995=100)	100.0	104.8	113.0	119.8	124.7	127.2
Elderly dependency ratio	19.2	19.0	20.4	27.6	36.8	38.4
Very elderly ratio	42.7	46.3	45.8	40.5	45.8	55.6
Japan						
Population (1995=100)	100.0	101.3	102.2	100.6	97.6	91.6
Elderly dependency ratio	20.3	24.3	33.0	43.0	44.5	54.0
Very elderly ratio	37.8	38.3	44.5	47.2	56.3	58.1
Germany						
Population (1995=100)	100.0	100.0	97.2	94.2	90.6	81.2
Elderly dependency ratio	22.3	23.8	30.3	35.4	49.2	51.9
Very elderly ratio	40.7	42.7	41.8	48.3	44.1	59.7
France						
Population (1995=100)	100.0	102.2	104.9	106.9	107.8	106.1
Elderly dependency ratio	22.1	23.6	24.6	32.3	39.1	43.5
Very elderly ratio	39.2	43.4	49.6	41.9	48.8	56.6
Italy						
Population (1995=100)	100.0	100.1	98.2	95.3	91.9	82.6
Elderly dependency ratio	23.8	26.5	31.2	37.5	48.3	60.0
Very elderly ratio	38.5	42.8	47.9	48.4	48.0	60.9
United Kingdom						
Population (1995=100)	100.0	101.0	102.2	103.5	103.9	102.0
Elderly dependency ratio	24.3	24.4	25.8	31.2	38.7	41.2
Very elderly ratio	42.9	46.3	46.3	44.5	45.8	57.2
Canada						
Population (1995=100)	100.0	105.0	113.2	119.7	123.1	122.7
Elderly dependency ratio	17.5	18.2	20.4	28.4	39.1	41.8
Very elderly ratio	39.9	43.3	44.6	40.2	44.4	55.8
Sweden						
Population (1995=100)	100.0	101.8	103.8	105.7	107.0	107.0
Elderly dependency ratio	27.4	26.9	29.1	35.6	39.4	38.6
Very elderly ratio	46.6	50.8	46.7	45.8	52.2	58.8

Source: World Bank. *World Population Projections,* 1994.

Notes: The elderly dependency ratio is defined as population aged 65 and over as a percent of the population aged 15-64. The very elderly ratio is defined as the population aged 75 and over as a percent of the population aged 65 and over.

Austria's population will increase by 1 percent until 2000, but shrink in the long run, to be 1½ percent smaller in 2050 than it is today. In the sample of the countries the Austrian pension projection will be compared with in the remainder of this section—the G7 countries and Sweden—the Austrian demographic projection takes a middle position.

The population in the United States and Canada will grow significantly, and somewhat less in Sweden, France, and the United Kingdom. The rapid population growth in the US and Canada is due mainly to large immigration flows; net immigration flows for the European countries are projected to fall to zero after 2005. In Japan, Italy, and Germany the population will shrink due to very low fertility rates; these are not offset by the increase in life expectancy of some five years until 2050.

The elderly dependency ratio, an indicator of the pensioners' share in the population, is similar in Austria (22.5 percent) to that in Germany, France, Italy, and the United Kingdom. This ratio is significantly lower in the United States and Canada, but considerably higher in Sweden, reflecting its mature demographic situation. The Austrian elderly ratio rises relatively faster than the sample average until 2010 but more slowly thereafter. It increases by almost one quarter within the following 15 years and more than double by 2050 (Table 5).

This sharp increase reflects both the achievement of retirement age of relatively large age cohorts and the increase in life expectancy. To single out the effect of greater life expectancy, the "very elderly ratio," which captures the share of the very old (over 74 years) among the elderly, is useful. This ratio is also a proxy for the length of pension payments. In Austria, currently 40 percent of the elderly are older than 74 years, and this rises to over 60 percent in 2050. Again, the Austrian aging process is somewhat faster in the early years but slows down thereafter, relative to the other countries in the sample. For example, until 2000 the very elderly ratio rises by 5 percentage points in Austria, compared with only 1.5 percentage points in France, 2 in Germany and 2.5 in Italy. From 2000 to 2030, however, the very elderly ratio falls in Austria, whereas it continues to rise in the three other countries. Thus, the Austrian demographic trend is slightly worse for the pension system in the short run, but somewhat better in the long run.

B. Projection Results

The Austrian pension system

The projection results show that, due to the imminent aging of the population, the financing situation of the Austrian pension system would worsen rather swiftly if the system were to maintain its present structure. Pension expenditures relative to GDP would increase by 10 percent (to 11.1 percent of GDP) until 2000 and by 25 percent (to 12.7 percent of GDP) until 2010 (Table 6). Contributions, which under current policies converge to the steady-state level of 8.4 percent of GDP for both funds, fall more and more short of expenditures. Thus, the budget transfer of 2 percent of GDP, which in 1994 was still sufficient to cover the expenditure-contribution gap, already in 1995 leaves an additional deficit of 0.1

percent of GDP.[22] This additional deficit would increase to 0.7 percent of GDP in 2000 and to 2.3 percent in 2010. To continue to balance the system, budget transfers would have to increase to 4.3 percent of GDP in 2010. Otherwise, the system would accumulate debt (i.e., negative net assets) amounting to 19 percent of GDP by 2010. If budget transfers remained fixed at 2 percent of GDP, the total uncovered balance of the system in 2010 would consist of a primary deficit of 2.3 percent of GDP in 2010 plus interest payments of 0.9 percent of GDP on the accumulated debt.

The medium-term outlook differs markedly between the two schemes of the system. The employees' scheme, even though it is currently on a relatively sound footing, accounts for the bulk of the worsening of the overall system. Expenditures increase from 8.7 percent of GDP in 1995 to 11 percent in 2010, thus increasing the gap to contributions of 7.9 percent of GDP from roughly 1 percent of GDP to over 3 percent of GDP. This means that the present level of budget transfers of 1 percent of GDP would eventually only cover one third of the primary deficit. If transfers did not increase from its present level, the scheme would accumulate debt of 18.4 percent of GDP by 2010 and the overall annual deficit—including interest payment on the debt—would then be 3.0 percent of GDP.[23]

The self-employed scheme shows much less adverse dynamics in the medium term. Expenditures would rise slightly, from 1.5 percent of GDP in 1995 to 1.7 percent in 2010, so that contributions (0.5 percent) plus the present level of the budget transfer (1.0 percent) would largely continue to balance the system. The debt the system would accumulate if budget transfers remain at their present level would be rather small (0.6 percent of GDP).

The reason for the different outlook for both schemes is largely due to the adverse contributor/pensioner dynamics the schemes are subject to: for the employees' scheme, the contributor-pensioner ratio of 2.7 in 1995 is still relatively high and contributions cover 87 percent of expenditures so that the required budget transfers are relatively small. However, the demographic change affects the scheme rather swiftly. Already by 2010, the number of contributors per pensioner falls to 2.1 and, at present contribution rates, contributions would then cover only 72 percent of expenditures (Table 6, bottom). Thus, budget transfers would have to more than double in relation to GDP.

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[22] In order to balance the system, the budget transfer in 1995 already increased to 2.1 percent of GDP.

[23] A study of the Austrian Council for Pension Adjustment of 1991 (with 1988 as the base year) also showed a long-term deterioration of the financial situation of the pension system, but no significant deterioration in the short and medium term (*Beirat für die Renten- und Pensionsanpassung,* 1991). Since the early 1990s, however, eligibility and transfer ratios have increased and worsened the outlook significantly.

Table 6. Medium-Term Projection of the Austrian Pension System, 1995-2010
(In percent of GDP)

	1995	2000	2005	2010
Both pension schemes				
Expenditures	10.2	11.1	11.9	12.7
Contributions	8.1	8.4	8.4	8.4
Primary balance	**-2.1**	**-2.7**	**-3.5**	**-4.3**
Primary balance after transfers 1/	-0.1	-0.7	-1.5	-2.3
Balance after transfers 1/ 2/	-0.1	-0.8	-1.8	-3.2
Net assets	-0.1	-2.3	-6.9	-19.0
Employees' scheme				
Expenditures	8.7	9.5	10.3	11.0
Contributions	7.6	7.9	7.9	7.9
Primary balance	**-1.0**	**-1.6**	**-2.4**	**-3.1**
Primary balance after transfers 1/	-0.1	-0.7	-1.4	-2.1
Balance after transfers 1/ 2/	-0.1	-0.8	-1.8	-3.0
Net assets	-0.1	-2.4	-6.8	-18.4
Self-employed scheme				
Expenditures	1.5	1.6	1.6	1.7
Contributions	0.5	0.5	0.5	0.5
Primary balance	**-1.1**	**-1.1**	**-1.1**	**-1.2**
Primary balance after transfers 1/	0.0	0.0	-0.1	-0.2
Balance after transfers 1/ 2/	0.0	0.0	-0.1	-0.2
Net assets	0.0	0.1	-0.1	-0.6
Memorandum items:				
Employees' scheme				
Contributors/Pensioners	2.7	2.6	2.3	2.1
Coverage ratio 3/	87.3	82.9	77.0	72.2
Self-employed scheme				
Contributors/Pensioners	1.7	1.6	1.5	1.4
Coverage ratio 3/	32.2	32.4	31.2	30.2

Source: Authors' calculations.
1/ Assuming budget transfers remain fixed in relation to GDP at the present level of 2 percent.
2/ Includes interest on net assets.
3/ Contributions in percent of total expenditures.

In contrast, the financing of the self-employed scheme is less affected by the demographic change because only 30 percent of the revenues stem from contributions. Thus, although the contributor-pensioner ratio falls from 1.7 to 1.4, this has only a small effect on total revenues. Nevertheless, this decline would have to made up by higher budget transfers, if the other parameters of the scheme remained unchanged.

Even though budget transfers to the self-employed scheme would not have to increase dramatically over the medium term, their high level might become an increasing problem from a public policy point of view. If it were a large pension fund, covering a major fraction of the workforce, the existence of budget transfers could be a relatively small distortion since the overlap between contributors and taxpayers would be large. In the case of a small fund—like the self-employed fund, to which less than 8 percent of the working-age population contribute—budget transfers covering 70 percent of the fund's expenditures is, however, effectively a transfer from all employees/taxpayers to the relatively small number of the self-employed. It is unlikely that a transfer of that size could be justified by positive externalities. It could perhaps be justified for a short period, for example, when a fund is newly established, but the self-employed scheme has been severely unbalanced since the 1970s, and the projections show that it will continue to remain severely unbalanced if no policy changes are made.

The results show that the Austrian pension system is bound to display substantial financial gaps in the near future if it were to face the demographic changes under an unchanged setup. To put the findings into perspective, under an unchanged setup, within 15 years the Austrian pension system would accumulate debt equivalent to 20 percent of GDP. Such a debt of the pension system would absorb one third of the maximum "allowed" public debt of 60 percent of GDP in the European Monetary Union (EMU) under the Maastricht Treaty. This raises all the more concerns given the country's present situation with 70 percent public debt and zero pension system debt. The projected deficit of the pension system of 3.2 percent of GDP in 2010 would fully absorb the deficit level member countries are allowed for participation in EMU under the Treaty.

The projection model also provides some insights into the long-term dynamics of the Austrian pension system through 2050 (Table 7). The projections indicate that the imbalances of the system are far from correcting themselves in the long term. Pension expenditures would increase further and stabilize at around 19 percent of GDP. Due to the accumulation of debt and interest payments, the deficit would exceed 30 percent of GDP in 2050 and the debt level would exceed 400 percent of GDP. Naturally, these projections are only illustrative and should only be seen as indicative of underlying trends.

Table 7. Baseline Projections of Pension Expenditure, Balances, and Net Asset Positions of Public Pension Funds in Selected Industrial Countries, 1995-2050 (In percent of GDP)

Country	1995	2000	2010	2030	2050
Austria					
Pension expenditure	10.2	11.1	12.7	18.8	18.7
Balance	-0.1	-0.8	-3.2	-16.3	-32.5
Net assets	-0.1	-2.5	-19.0	-147.7	-429.2
Major industrial countries (G7)					
Pension expenditure	6.7	6.9	7.0	10.7	11.4
Balance	0.5	0.2	-0.3	-6.6	-15.5
Net assets	8.3	5.6	-1.1	-61.6	-209.7
United States					
Pension expenditure	4.4	4.3	4.2	7.4	7.7
Balance	0.8	1.1	1.7	-2.2	-7.2
Net assets	7.0	9.5	17.2	3.0	-66.7
Japan					
Pension expenditure	5.7	6.5	7.5	8.9	10.7
Balance	1.1	-0.4	-4.1	-10.9	-23.4
Net assets	26.5	13.9	-17.1	-144	-399.2
Germany					
Pension expenditure	10.0	11.1	11.0	18.4	18.7
Balance	0.2	-0.9	-1.3	-14.9	-34.7
Net assets	1.1	-0.1	-8.8	-115.6	-431.3
France					
Pension expenditure	12.5	12.0	12.6	19.4	21.3
Balance	-0.5	0.0	-0.4	-13.2	-31.5
Net assets	-0.5	-1.2	0.6	-100.5	-369.6
Italy					
Pension expenditure	16.0	17.1	15.2	23.3	25.7
Balance	0.0	-1.1	-1.1	-8.8	-18.4
Net assets	0.0	-16.9	-29.9	-186.8	-338.2
United Kingdom					
Pension expenditure	4.4	4.3	4.6	4.7	3.4
Balance	-0.2	-0.2	-0.7	-1.1	-0.2
Net assets	-0.2	0.0	-4.3	-10.5	-14.5
Canada					
Pension expenditure	4.4	4.5	4.9	7.5	7.1
Balance	-0.2	-0.5	-1.4	-7.6	-14.7
Net assets	7.0	4.0	-5.1	-67.3	-188.8
Sweden					
Pension expenditure	8.5	8.2	8.1	9.2	7.4
Balance	1.3	0.4	0.2	-3.0	-3.8
Net assets	25.8	21.9	18.3	-16.3	-56.7

Source: Authors' calculations; projections for countries other than Austria are taken from Chand and Jaeger (1996).

An international comparison

To put the projection results for Austria into perspective, this section provides some comparisons with the results for other industrial economies, which were obtained by Chand and Jaeger (1996) using the same projection model. The countries are again the G-7 countries plus Sweden. In Austria, the burden of pension expenditures relative to GDP is projected to grow in the two schemes discussed here, from 10.2 percent of GDP in 1995 to 12.7 percent in 2010 (Table 7). This increase is the second-highest in the sample, exceeded only by Japan where it takes place, however, at a much lower level.

In Germany expenditures are projected to increase from 10 to 11 percent, in France they stay constant at 12.5 percent, and in Italy they even decline from 16 to 15.2 percent (with a peak of 17 percent in 2000).[24] In the long run, however, pension expenditures are projected to increase faster in these countries than in Austria so that, by 2050, France and Italy spend more on pensions than Austria, and Germany will spend roughly as much as Austria.

The overall deficit of the pension system in Austria taken by itself seems low at present, but the comparison shows that the G7 countries as a group taken together currently have a surplus. Austria's pension deficit will reach the highest level in the sample by 2010, with 3.2 percent of GDP, topped only by Japan. The deficit is the overall balance, including interest payments on net debt, after budget transfers, which are assumed to remain at their present levels in relation to GDP. The pension systems of the major industrial countries remain in surplus until 2000 and enter into a slight deficit of 0.3 percent of GDP in 2010. Hence, not only the level of pension expenditures but also the size of the deficit of the pension system in Austria is noteworthy in an international context.

In the long run, however, the Austrian system looks relatively better, mainly because pension expenditures stabilize in relation to GDP. Still, it reaches a level of debt similar to that of the other countries in the sample because the Austrian system worsens early on and—due to the accumulation effect—the debt level continues to rise.

In sum, the international comparison shows that the Austrian pension system faces roughly the same financial difficulties as the pension systems in continental Europe.[25] It worsens earlier than most other countries and accumulates levels of debt which far exceed GDP already by 2030. Early policy action is thus even more important in Austria than in other countries, but—by the same token—any significant timely adjustment would make the long-term outlook relatively favorable.

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[24] These pension expenditure levels are not directly comparable across countries since some exclude civil service pensions (e.g., for Austria) while others (e.g., for Italy) include them.

[25] See, for example, Holzmann (1993) for a discussion of the issues involved in pension reforms across the European OECD countries.

IV. Policy Implications and Options For Reform

The main driving force behind the worsening of the pension system in Austria is the demographic development in combination with early retirement and a generous pension system. Already in the short term, the revenue-expenditure gap of the system will widen if the parameters of the system remain unchanged, and the resulting deficits and debt levels will become unsustainable in the medium term. This worsening occurs because the older cohorts become significantly larger and life expectancy increases. Early retirement and the fact that cohorts with high non-contribution claims will reach eligibility for retirement soon aggravates this development. Consequently, the number of pensioners, the level of pensions relative to contributions, and the length of pension duration increases.

There will be little room to match the increases in pension expenditures by boosting revenues for the pension system because all three channels through which revenues could be increased are practically blocked: First, contribution rates cannot be raised further because they are already among the highest in Europe, and the Austrian economy suffers from high labor costs. Second, higher taxes to finance higher budget transfers to the pension system do not seem desirable since they would equally add to levy ratios which are already high in an international comparison with distortive effects on production and distribution. Thus, both wage earners and employers would resist further hikes in payroll contributions or taxes. Third, financing the excess expenditures of the pension system via higher public deficits and debt levels would be unacceptable. The pension system is part of the public sector, whose deficit and debt levels are already high, and—with 6 percent and 70 percent, respectively, in 1995—above levels "allowed" for entry into the EMU.

Consequently, the emphasis of adjustment of the pension system must lie on the expenditure side, that is, on pension benefits. Because of its generosity, a number of measures are possible that would bring the system on a sound footing and adjust it to the upcoming demographic changes without giving up its basic structure.

Many authors have called for radical changes in the structure of pension systems in Austria, and more broadly in industrial economies. However, shifting a system radically that covers over 80 percent of the workforce as in Austria and whose contributors hold entitlements that exceed annual GDP several times is difficult if not impossible—due to enormous transition and transaction costs. Therefore, this section focuses on gradual steps of reform; in order for those gradual changes to be effective and avoid radical shifts later, however, such reforms have to come early. Assessments undertaken by many economists suggest that in most countries a combination of "piecemeal" measures, adopted early on, would suffice to restore financial viability.[26]

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[26] See Tanzi (1995), p. 10f. for an overview of this discussion.

The analysis of the paper and the results of the previous section underscore the need for reform, and they also show that reform is possible. In Austria, a first step toward reform has already been taken. As part of the Consolidation Package for 1996/97 a set of measures to raise the *actual* retirement age was implemented. These include increasing the number of months for qualifying for early retirement, requiring retroactive contributions for months spent for education, enforcing stricter deduction rules for double pensions and working pensioners, and introducing contributions for periods spent in spas. These measures are undoubtedly in the right direction, however, they are not sufficient to make the Austrian pension system sustainable. More broadly, there are a number of measures which, if taken early, would help adjust the system to the new economic and demographic conditions. Such a reform ought to address four areas and comprise a large number of steps.

Reduce early retirement: This is the most important area. To the extent that early retirement is caused by a lack of jobs for senior workers and a deliberate policy to cushion unemployment through the pension system, the system should receive additional budget transfers for the prospective early pensioners, to compensate for lower contributions and higher pension payments. To the extent that early retirement is caused by agreements between employees and employers, mirroring common interests, the onus of compensation for the pension system should be on their shoulders. This could imply increased penalties for early retirement pensions or compulsory contribution payments until the pensioners reach the statutory pension age. Furthermore, early retirement should be curbed by tightening eligibility criteria for disability pensions; misuse is evident in that more than half of all men who retire in a given year do so on disability pensions, receiving higher benefits than they would from a regular old-age pension. As a side measure, opportunities for retraining the senior workforce could be improved. From an intergenerational point of view, the government could also consider penalties for existing early retirees who have not yet reached the statutory pension age, for example, a gradually declining early retirement surcharge for pensioners younger than 65 years for men and 60 years for women.

Adjust the key parameters of the system to make it sustainable: Austria's pension system is in many ways more generous than those of its neighbors, who also have systems that will not be affordable in the near future (cf. Table 3). Thus, at the least, Austria should reduce such "excess" generosity. This could entail a number of actions: first, raising the statutory pension age for women to 65 years[27]; second, adjusting the pension age for men and women according to increases in life expectancy and thereby keeping the expected length of pensions fixed; third, adjusting existing pensions not according to wages net of contributions only, as currently, but net of contributions and taxes; or adjusting them by a weighted indexation of consumer price inflation and wage growth, as is done in Switzerland (with one half weight to each); fourth, lowering the accrual factor to yield a maximum replacement rate below 80

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[27] Germany, for example, decided in its 1992 pension reform to gradually increase the retirement age for women from today's level of 60 years to 65 years. In 1996 it was decided that this increase will start in January 2000 and be completed by December 2004.

percent; and finally, taking the entire career as the basis for the pension assessment, rather than the best 15 years.

Increase transparency of the system: Austria's pension system should be reimbursed fully for the provisions it makes towards military service (conscripts), students, and parents. It is a political decision to grant these groups higher pension rights than they otherwise would have. These expenditures should thus be financed through the budget to make the fiscal costs of that decision transparent. The government should pay the contributions for these groups rather than forcing the pension system to increase entitlements without receiving commensurate contributions. This would mean that the burden would be borne by those who receive the externalities—that is, the entire population/taxpayers—rather than by employers and employees only. It would also mean that the burden is spread progressively according to incomes. And finally, this could be linked to a legal change prescribing that the federal government pays only the contributions in these special cases (which are easy to identify and to calculate), but does not cover the general deficit of the pension system.

Improve efficiency of the system: Austria's pension system seems heavily loaded with elements that do not belong to the core functions of a pension system. With more private saving instruments available in financial markets and the preferences of the people to use different saving instruments, the pension system should be organized to reduce the contribution rate and leave room for private provisions.

V. CONCLUSIONS

The Austrian pension system has undergone many changes in the past, but the analysis of this paper suggests that more, and more decisive, steps of reform are needed to ensure sustainability of the system in the medium and long term. The problems the system faces are not uncommon in continental Europe, and many of these countries are undertaking reforms to lower the burden on the economically active and make their economies more competitive. European integration will lead to more competition not only between firms and private agents but also the need for greater harmonization of economic systems. It will therefore be increasingly difficult to maintain an overly generous redistribution system, which adds significantly to non-wage labor costs. But also within Austria, it will become more and more difficult to justify why the young would have to maintain or even increase their contributions, especially since they are themselves followed by smaller generations so that they cannot expect equally generous pension entitlements. Furthermore, the young suffer the most from adverse effects of high levy ratios and non-wage labor costs on the labor market and they—unlike the previous generations—have more attractive savings instruments available.

The results of the paper have shown, however, that the worsening is gradual and that many options for reform exist without abandoning the structure of the pension system. The advantage of incremental reforms is that they can be fine-tuned. Their disadvantage is that they will have only gradual effects on the financial situation since they need time to permeate

through the system. Thus, if the structure of the system is to be maintained, these reforms need to be taken early. The fact that a wide array of options exists—such as penalizing early retirement, adjusting benefit accrual and pension calculations, making the redistributory elements more transparent and the overall system more efficient—should make a comprehensive and balanced reform possible.

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