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THE SWEDISH PENSION REFORM

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There is growing concern that the U.S. Social Security System will be unable to provide income to retirees in the future in the manner it does today. Similar fears prevail across the globe as many developed nations worry that their public pension systems are not sustainable. The trend is primarily a result of increases in the proportion of the population eligible for benefits. Some nations have already implemented reforms to deal with this problem, and it seems practical to examine their experiences.

The public pension system in Sweden was reformed through a series of legislative decisions starting in 1994. The reform was a response to changing economic and demographic conditions that had threatened to necessitate unacceptably high contribution rates from the nation's labor force. Advocates of the reform claim that the new system is capable of enduring severe financial downturns and unforeseeable fluctuations in the population; however, most would acknowledge that it has its downsides.

In the following analysis, I describe Sweden's old system and examine why it needed to be overhauled. I then discuss the new system's characteristics and assess how successful the reform has been, noting who the real winners and losers are.

The Old System

Benefit Evolution

The system that has been replaced dates back to 1913. Although it has been described as the origin of Sweden's universal welfare protection, it originally provided only means-tested benefits that excluded portions of the population. It was not until 1946 that the system became truly universal, offering benefits of equal amount to all individuals of pension-receiving age. (Palme, p. 1) This flat-rate benefit was equal to 96 percent of a *base amount*. One base amount was approximately one-fifth the average earnings of a full-time worker and was 36,400 SEK ($4,652) in 1998.[1] In order to maintain its financial viability, the base amount was indexed to changes in the cost of living. (Scherman, p. 4)

In 1960, the universal benefit was com-

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[1]Using an exchange rate of 7.825 SEK/U.S. $, the rate prevalent on June 1, 1998.

bined with an earnings-related supplement. Individuals who had worked for at least 30 years were guaranteed an annual pension based upon their best 15 years of employment, adjusted for inflation. (Sundén, p. 2) In 1998, the average earnings of a full-time worker was about 182,000 SEK. (Scherman, p. 4) Taking into account that this value does not represent a worker's average earnings over his best 15 years, a very crude estimate of the average earnings-related supplement is about 109,200 SEK ($13,955). The value of this supplement was capped at 7.5 times the base amount ($34,890). (Scherman, p. 4) Together, the universal benefit and earnings-related supplement were designed to replace 60 percent of income.

Shortly after the first earnings-related pensions were distributed, those not entitled to them began lobbying for increased benefits. Another supplement, approximately half the size of the flat-rate benefit, was guaranteed for individuals ineligible for a significant earnings-related benefit. Individuals who typically received this supplement included the disabled and the long-term unemployed. The old system contributed to Sweden's relatively equal income distribution and lack of poverty among the elderly.

Pension Plan Design

The flat-rate and earnings-related schemes within the old system were *pay-as-you-go* and *defined benefit*. The government financed the flat-rate benefit (and the supplement typically received by the poor) with general revenues and payroll taxes on employers. The earnings-related supplement was financed by payroll tax contributions on employers and employees; however, until the mid-1990s, financing was done entirely by contributions from employers on the total wage bill and without any ceiling, even though pension benefits were capped. (Scherman, p. 5)

When the earnings-related supplement was designed in 1960, contribution levels were intentionally set higher than necessary to cover benefits. This was done in order to create a safeguard against fluctuations in the contribution rate and to offset the macroeconomic downside of decreasing incentives for private savings. The excess funds were invested by the state under certain rules. Specifically, 85 percent of the funds were restricted mainly to government bonds and housing bonds, traditionally assets with low risk and long duration; it was not until 1974 that the funds were allowed to be invested in stocks. At the end of 1998, these excess funds amounted to about 40 percent of GDP. (Sundén, p. 3)

Problems with the Old System

The old system was not free of equity issues. For example, the design of the earnings-related supplement calculation had a regressive impact, and the design of the flat-rate minimum supplement provided incentives for some low-income workers to avoid work and live off welfare. Nevertheless, the driving force for reform was the anticipated rise in contribution rates necessary to cope with an aging population and potential economic downturns.

The Threat of Demographic Changes

As in many industrialized nations, the life expectancy of the average citizen in Sweden has increased due to technological advances in health-related fields. As Swedes live longer, pension beneficiaries will receive their benefits for a longer span of time unless the retirement age is increased. (See Table 1.) Holding all else constant, this alone would require the contribution rate of the workforce to increase in the old system.

Table 1
Projected Average Retirement Period by Gender

Year	2000	2010	2030
Males	18.7	19.4	20.6
Females	23.2	23.9	25.4

Source: "Living Happily Ever After…," p. 7.

Meanwhile, however, the nation's population growth rate and immigration rate have been declining. Sweden has experienced a birth rate of just under two children per woman during most of the past century. This rate is slightly below that necessary for reproducing the population and significantly below that needed for increasing the labor force enough to support the predicted increase in longevity. (Palmer, n.d., p. 2) In the past, net immigration has helped make up for the gap created by increases in lifespan and decreases in natural population growth; however, a seemingly unattainable multiple of 3.9 times current immigration levels is necessary in order to offset just the extent to which fertility has fallen below population replacement levels. ("Living Happily Ever After…," p. 20) Consequently, the portion of the population that is retired and eligible for pension benefits is expected to increase as the portion of the population responsible for paying the benefits is expected to decrease. (See Table 2.)

These facts, when combined with a sociably accepted tendency for aging Swedes to retire earlier, as reflected in the last column of Table 3, create a second significant threat to the financial stability of the old system. As more aging Swedes exit the workforce earlier, not only are more pensions expected earlier, but there is also downward pressure on the tax base that supports these pensions.

The Threat of High Unemployment

The old system required increases in the contribution rate whenever the proportion of the population employed decreased, whether it was due to demographic changes or economic downturns. One can think of the contribution rate as the percentage of everyone's paychecks taxed to provide pensions to retirees. As fewer individuals worked, the tax base decreased. Since benefits were guaranteed and financing was pay-as-you-go, the contribution rate imposed on remaining workers was increased to compensate. For example, during Sweden's recession in the early 1990s, the contribution rate used to fund disability and survivors' pensions grew from 24.5 percent to 30 percent as a result of decreased employment levels. (Scherman, p. 10)

If pensioners tend to spend less than contributors, the old system may have had an adverse effect on the nation's economy during recessions. At such times, Keynesian economic theory suggests that governments should lower taxes through fiscal policy in order to increase consumer spending and stimulate the economy. *Ceteris paribus*, however, the old system required the government to raise its taxes during recessions in order to meet its obligations. Since these taxes were, in effect, being transferred from the labor force to pensioners, the aggregate effect on the economy depended

Table 2
Projected Retiree Populations as a Percentage of the Total Population

2000	2010	2020	2030	Percent Growth in Percentage Retired 2000–2030
20.5%	23.8%	27.7%	31.0%	51.2%

Source: "Living Happily Ever After…," p. 7.

Table 3
Percentage of Different Age Groups in the Labor Force

Age	16–19	20–24	25–34	35–44	45–54	55–64
Women	28.2	58.8	78.7	86.0	86.7	63.3
Men	25.1	66.5	87.0	89.7	89.7	70.8
Women and Men	26.6	62.7	83.0	87.9	88.2	67.0

Source: "The Swedish Labour Market — Facts and Figures," p. 14.

upon the relative propensity of contributors and pensioners to consume. Thus, the old system may have had a contractionary effect on GDP growth.

The Threat of Decreasing Real Wage Growth

Another problem with the design of the old system was that contribution rates were dependent upon real wage growth. Consider the differences between the system's revenues and expenditures. On the one hand, revenues were collected as a percentage of current wages. On the other hand, expenditures were a function of previous years' wages adjusted for inflation. In effect, revenues were wage indexed and expenditures were price indexed. (Palmer, 2000, p. 24) Therefore, if everything else were held constant, the relative cost of financing pensions from year to year increased if nominal wage growth was less than inflation (i.e., if the real wage growth was negative).

Consider the following example. Imagine a system with just one pension beneficiary and one contributor. Assume that nominal wages increase by $1 per year. Also, assume that the pension is $0.60 and that it increases with inflation at 33.33 percent per year. When the contributor's earnings rise at any rate lower than inflation, the portion of the contributor's wage necessary to pay the beneficiary's pension increases as shown in Table 4. Note that until

year 4, nominal wage growth is higher than inflation, and the contribution rate decreases; however, as soon as real wage growth becomes negative in year 5, the contribution rate begins to rise.

The Issue of Regressive Redistribution

The three problems just discussed — demographic changes, high unemployment, and decreasing wage growth — were of concern to policy makers because they directly affected the labor force contribution rate and the financial stability of the system. In contrast, the regressive nature of the old system was more of an equity problem than a stability concern.

In a nation with a socialist ideology such as Sweden, an attitude exists that favors labor over capital. Nevertheless, the rules of the old pension system redistributed income from workers whose earnings did not vary much, typically blue-collar workers, to individuals whose earnings were distributed unevenly over their lifetimes, typically white-collar workers. (Sundén, p. 4) This redistribution occurred because workers paid contributions as a percentage of earnings across their lifetime but received benefits based upon their 15 years of employment with highest earnings.

To illustrate, consider the following example. Suppose that Person A works for 50 years and earns 15,000 SEK/year, while Person B

Table 4
Illustration of Old System's Dependence on Real Wage Growth

(1) Time Period (t)	(2) Nominal Wage (NW)	(3) Nominal Wage Growth Rate (NWGR)	(4) Inflation (I)	(5) Real Wage Growth Rate (RWGR)	(6) Real Wage in Year 1 Dollars (RW)	(7) Benefit (B)	(8) Necessary Contribution Rate (CRt)
1	$1.00	—	—	—	$1.00	$0.60	60.00%
2	$2.00	100.00%	33.33%	66.67%	$1.67	$0.80	40.00%
3	$3.00	50.00%	33.33%	16.67%	$1.94	$1.07	35.55%
4	$4.00	33.33%	33.33%	0.00%	$1.94	$1.42	35.55%
5	$5.00	25.00%	33.33%	−8.33%	$1.78	$1.90	37.92%
6	$6.00	20.00%	33.33%	−13.33%	$1.54	$2.53	42.13%
	$NW_t =$ $NW_{t-1} + \$1$	$NWGR_{t-1} =$ $\dfrac{NW_t - NW_{t-1}}{NW_{t-1}}$		$RWGR_t =$ $NWGR_t - I_t$	$RW_t = RW_{t-1}*$ $(1 + RWGR_t)$	$B_t = B_{t-1}*$ $(1 + I_t)$	$CR = \dfrac{B_t}{NW_t}$

works for 30 years and earns 20,000 SEK for 15 years and 30,000 SEK for 15 years. Assuming a contribution rate of 20 percent and ignoring discounting, both individuals will contribute 150,000 SEK in social security taxes over their work lives. Nevertheless, Person A will be entitled to a pension of 9,000 SEK/year while Person B will be receiving 18,000 SEK/year. Although this imbalance posed no threat to the financial stability of the system, many saw this phenomenon as a serious inequity.

Other Problems

Additional problems with the old scheme included its impact on the incentive to save and the indexation of the earnings-related benefit ceiling to consumer prices instead of to wages. In general, there was a growing belief, particularly among younger workers, that the system was poorly designed and would be unable to fulfill its "promises" in the future. (Palmer, 2000, p. 1)

The New System

Given the design of the old system and its various problems, the motivation for reform is clear. As such, many features have been changed. Sweden's new public pension system is divided into three parts: the guaranteed pension, the income pension, and the premium pension.

The Guaranteed Pension

The guaranteed pension provides a minimum allowance for pensioners and replaces the old system's flat-rate minimum universal benefit. It is a *defined benefit* pension plan funded on a *pay-as-you-go* basis. It is estimated to be equivalent to about $10,000 annually on a before-tax basis ("The Swedish Pension Reform"), and it is indexed to the consumer price index so that individuals dependent upon this minimum benefit are protected from inflation. After taxes, it is roughly equivalent in value to the flat-rate universal pension of the old system plus the supplement for individuals with low income. (Palmer, 2000, p. 21)

All individuals above age 65 living within

Sweden at least 40 years are entitled to the full guarantee. Since life expectancies have increased, the retirement age probably could have been set higher than 65 (Palmer, n.d., p. 12), assuming individuals are remaining physically fit longer than before. The benefit is reduced by 1/40 for each year of residence less than 40.

The guaranteed amount is reduced by about 11 percent for a married pensioner. Presumably the cost of living for two married individuals living together is lower than that of two separate individuals. Although this seems logical in theory, this policy unintentionally provides a financial incentive for older, more financially sensitive Swedes who would normally marry to enjoy the benefits of sharing costs through means other than marriage.

The Income Pension

The amount of Sweden's income pension is calculated as a function of lifelong contributions to the system. These contributions come in the form of a 16 percent tax on pensionable earnings.[2] Each individual has an "account" which is credited with the amounts one contributes to this pay-as-you-go system.[3] These accounts are referred to as "notional" because they only have value on paper; there is no special trust fund backing the full value of the accounts. The value of one's notional account simply represents what one has contributed so that one can receive an appropriate level of benefits when one retires. The values of the notional accounts increase each year by an interest rate equal to the growth rate of real wages. The National Income Index (NII) is used to measure this growth rate. ("The Swedish Pension Reform")

In *The Financial Stability of Notional Account Pensions*, Salvador Valdés-Prieto discusses the financial stability of Sweden's system. For the sake of simplicity, he considers a

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[2]Pensionable earnings are defined as all annual income exceeding the minimum taxable income (approximately SEK 9,000 or $1,154) and below the ceiling defined within the pension system (SEK 290,000 or $37,178).

[3]Credits are also awarded to individuals having children under the age of four, those doing military service, and students at universities.

system without any reserves where individuals live for two periods. During the first period of one's life, each individual works and contributes a portion of his earnings to the pay-as-you-go system. During the second period, he retires and collects benefits. Mathematically, Mr. Valdés-Prieto shows the relationship between benefit levels, pension taxes, and some important economic and demographic variables in the following identities:

$$E_{(t+1)} = \sum_{i}^{N_t} (1 + p_t) * C_t * Y_t^i =$$

$$\left[\frac{\frac{1}{N_{t+1}} * \sum_{k}^{N_{t+1}} Y_{t+1}^k}{\frac{1}{N_t} \sum_{i}^{N_t} Y_t^i} \right] * C_t * \sum_{i}^{N_t} Y_t^i =$$

$$\left(\frac{C_t}{C_{t+1}} \right) * \left(\frac{N_t}{N_{t+1}} \right) * R_{t+1}$$

At a given time, the system's expenditures, $E_{(t+1)}$, are equal to the sum of average wage growth $(1+p_t)$ times (*) the previous period's contribution rates, C_t, times the period's aggregate income, Y_t, for all individuals. Average wage growth can be rewritten as the change in average earnings from period to period,

$$\left[\frac{\frac{1}{N_{t+1}} * \sum_{k}^{N_{t+1}} Y_{t+1}^k}{\frac{1}{N_t} \sum_{i}^{N_t} Y_t^i} \right]$$

where N is the size of the population,

$\sum_{i}^{N_t} Y_t^i$ is the wage fund in period t, and

$\sum_{k}^{N_{t+1}} Y_{t+1}^k$ is the wage fund in period t+1. Today's revenues, R_{t+1}, must be equal to the sum of today's pensionable earnings times today's contribution rate due to the pay-as-you-go nature of the system's financing. Therefore, R_{t+1}/C_{t+1}

can be substituted for $\sum_{k}^{N_{t+1}} Y_{t+1}^k$.

As these identities show, the government can choose to finance pensions by either shifting contribution rates or adjusting benefit levels, assuming it does not want to tamper with the size of the workforce. If the contribution rate is varied according to changes in the population so that $C_{t+1} = C_t * (N_t/N_{t+1})$, automatic financial balance is achieved, since mathematically R_{t+1} equals E_{t+1}. (Valdés-Prieto, p. 404) However, allowing the contribution rate to fluctuate creates undesirable intergenerational transfers of income. As a result, Sweden has opted to allow pension benefits to fluctuate and to maintain constant contribution rates.

Once an individual decides to retire, which can occur at any time after turning age 61, the individual's annual benefit is determined by dividing the value of his notional account by an annuity factor. This annuity factor is a function of life expectancy and future wage growth, and its main purpose is to ensure that the system meets its obligations without increasing the contribution rate of the workforce. As life expectancies increase, pension benefits will therefore decrease in order to maintain constant contribution rates. One may choose to retire early and receive lower pension levels for a longer period of time, or one may choose to delay one's retirement in order to obtain higher benefits for fewer years.

Ole Settergren, a researcher at the Swedish National Social Insurance Board, has developed an *automatic balance mechanism* (ABM) to guarantee the income pension system's financial self-sufficiency. The system's assets must remain greater than its liabilities if the system is to survive in the long run. Therefore, each year, planners examine the relationship between a buffer fund[4] and the sum of contributions on the one hand and the system's liabilities on the other. This relationship is referred to as the *balance ratio*.

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[4]Money in the buffer fund comes primarily from the old pension system's excess funds. In 2000, it was estimated that the fund was capable of paying over five years of benefits. (Palmer, 2000, p. 31) In 2001, the fund's value was estimated to be SEK 550 billion. (Settergren, p. 10) This is the equivalent of about $50.69 billion.

Mathematically:

$$\text{Balance Ratio} = \frac{\text{Pension System Assets}}{\text{Pension System Liabilities}} = \frac{\text{Contribution Assets} + \text{Buffer Fund}}{\text{Pension System Liabilities}}$$

Changes in the value of this ratio can signal the effects of several economic and demographic concerns that were previously ignored (for example, changes in the size of the labor force and returns on the buffer fund).

In "The Automatic Balance Mechanism of the Swedish Pension System…," Mr. Settergren explains how the ABM works. When the value of the balance ratio is greater than one, the pension system is more than capable of meeting its obligations; however, when the value of the ratio is less than one, the system is financially imbalanced. If such a situation were allowed to persist, the buffer fund would be depleted over time and the system would be unable to meet its obligations. Consequently, if the balance ratio falls below one, the ABM is activated. This switches the rate at which pensions and notional accounts grow from the National Income Index, which is (1+p) in the Valdés-Prieto model, to a *balance index*. The balance index is calculated as the product of the wage growth index and the balance ratio. When the balance

ratio is below one, pensions of those already retired and notional accounts of those still working will grow at a slower rate than average wage growth. On the other hand, when the balance ratio exceeds one, pensions and notional accounts will increase at a faster rate than average wage growth, until the time when the balance index returns to the same level as the income index. At that point, the system's liabilities will return to indexation solely via wage growth.

Figure 1, provided in Mr. Settergren's work, summarizes how indexation moves from one method to another and back again. The darker line plots a hypothetical index level over time if pensions grow continuously at the same rate as wage growth. Alternatively, the lighter line plots a hypothetical path that the index level could follow over time if the ABM is activated during year 5. Note that pensions and notional accounts would grow at a slower rate than average wage growth from year 5 to year 9, presumably the period through which the

Figure 1
Potential Paths of the Income Index and Balance Index
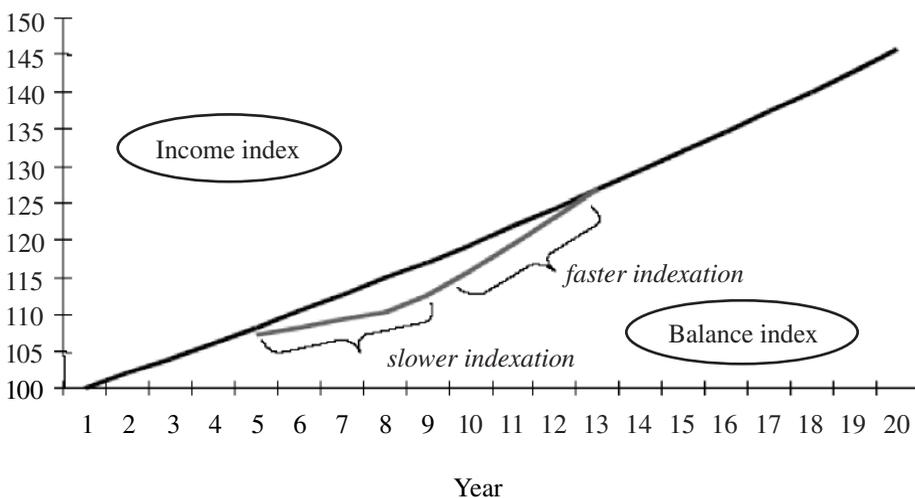
Source: Settergren, p. 12.

pension system's liabilities outweigh its assets. Once the system's assets outweigh its liabilities again in year 9, however, the indexation of pensions and notional accounts would grow more quickly than average wage growth until the two hypothetical index levels were equal again, as in year 13. From that point forward, indexation would continue solely via wage growth.

The Premium Pension

The third part of the new pension system is the premium pension. This benefit differs in form and design from the guarantee and income pensions. It is a traditional defined contribution plan and is therefore fully funded. Contributors are taxed at two-and-one-half percent of pensionable earnings each year, which public and private fund managers invest. (Sundén, p. 9) Individuals may choose from a long list of registered domestic and international managers, each of whom has negotiated an agreement about fees and agreed to reporting requirements with the Premium Pension Authority, a government-run agency set up through the reform.

Upon retirement, pensioners may choose between two types of annuities. The first type has a guaranteed amount. If chosen, one's accumulated assets are transferred to the Premium Pension Authority. The second type of annuity, referred to as unit-linked, does not guarantee a benefit level. If chosen, one's funds are kept with fund managers, and one's pension is recalculated each year by dividing the value of one's funds by an annuity factor. ("The Swedish Pension Reform") A choice must be made between receiving a guaranteed amount or risking this guarantee in hopes of higher returns from fund managers.

There has been much debate about why the pension reform should include the premium pension and whether or not the premium system should be privately or publicly managed. Arguments concerning whether or not to have such a funded system range from concern over its impacts on savings, investment, and the growth of the economy to the potential for a new source of capital for private business. Nonetheless, some believe that, because the debate continues as to whether pay-as-you-go or fully funded systems provide the best protection against diverse economic and demographic risks, it is wise for the Swedish state to diversify its risk through a mix of the two approaches. (Scherman, p. 26)

Assessment of the Reform

From the viewpoint of Swedish society as a whole, the new system is superior to the old system in terms of sustainability and equity. Nevertheless, certain groups may be disadvantaged as a result of the reform. In the remainder of this article I focus upon the winners and losers in the reform by looking at various design changes.

The most important part of the reform is undoubtedly the move from a defined benefit system to a system characterized by fixed contribution rates. The new system guarantees a fixed contribution rate of 18.5 percent to support earnings-related pensions indefinitely, no matter how demographics change and no matter how the economy fares. The primary goal of the reform, financial sustainability through fixed contribution rates, seems to have been achieved; however, it should be noted that the cost of the guaranteed pension could still fluctuate.

The obvious downside of abandoning the defined benefit system is the potential for the benefit level to decrease. During prosperous economic times, the system will meet its obligations and enlarge its buffer fund; however, during economic downturns, the system may be forced to lower its level of benefits. For example, when unemployment is high, the decreased tax base will provide decreased net benefits for retirees. The automatic balance mechanism will slow benefit growth rates when tax revenues are low, whereas the old defined-benefit system avoided such sensitive actions by lifting contribution rates to provide for guaranteed benefit levels. This change benefits the current labor force at the expense of pensioners who now face an element of uncertainty in calculating their pension income.

Furthermore, the regressive redistribution that resulted from the old system's earnings-related benefit has been eliminated. The size of one's benefit is now a function of net

contributions over one's entire lifetime; therefore, those working more years at lower incomes are not penalized in comparison to those working fewer years at higher incomes. If the assumptions described earlier are correct, this benefits blue-collar workers at the expense of white-collar workers.

By tying the rate of return on contributions to wage growth rather than the wage bill,[5] it would appear that reformers have created a weakness in the new system.[6] If wage growth increases while aggregate contributions decrease, as could easily be the case given the dynamics of Sweden's changing population, then the system could quickly become unable to meet its obligations. The reformers have anticipated this weakness and created the automatic balance mechanism, in part, to combat it. As a result, the system will remain financially stable, but benefit rates will be unstable. Thus, the reform benefits the young at the expense of the old.

Although the development of the ABM and many other efforts have been made in order to improve financial stability, it is worth noting one area that may systematically continue to be a source of problems. The income pension's annuity factor is calculated once, at the time of retirement, using whatever life expectancy estimate is prevailing at that time; however, life expectancy estimates are likely to change beyond this point in one's life. Assuming that technological advancements and other related factors are likely to increase longevity over time, the new system may consistently underestimate its liabilities. In order to deal with this potential source of instability, it has been suggested that benefit levels be adjusted on a regular basis, as life expectancy changes become known. Another solution, which is probably less accurate but easier to implement, would be to calculate the annuity factor taking into account *expected* future changes in life expectancies. (Palmer, 2000, p. 15) Either solution would pre-

sumably improve the system and benefit the young at the expense of the old.

A noteworthy shortcoming of the new system is that, with the exception of those living off the guarantee, pensioners are no longer fully protected from inflation. This is the result of switching from price indexation to real wage growth indexation. It can be argued, however, that this is a positive development. Whereas the old system's formula was "manipulated" during times of economic recession in order to avoid problems, the new system forces the retired to share the risk of poor economic performance along with the working population. (Scherman, p. 19) Additionally, because the Swedish welfare state provides health care to its citizens, the elderly are not going to suffer setbacks in physical well-being.

All in all, those who were better off under the old system have made sacrifices primarily for the sake of financial sustainability. Nevertheless, the old system will continue to dominate Sweden's pension costs for the next two decades. All individuals born before 1938 remain covered entirely by the old system, and those born between 1938 and 1953 are covered by a combination of the two systems.[7] ("The Swedish Labour Market…," p. 45) As a result, the old system's problems can still impose huge costs on the working population. Edward Palmer, the Head of the Division for Research and Analysis at the Swedish National Social Insurance Board and a Professor of Social Insurance Economics at Uppsala University, suggests that "this may be judged by social and political historians to have been the major failing of the reform." (Palmer, 2000, p. 28)

Has Sweden Improved Its Pension System?

Sweden's public pension reform has achieved its primary goal. Among its advantages, the new system has permanent labor force contribution rates and is financially sustainable. The system's liabilities will now grow with real wages, the source of the system's

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[5]The wage bill is defined as the sum of earnings across the country.

[6]See Andrew Bond's "Crisis, Pension, and Achieving Financial Stability in the Italian Pension System," in Volume 21 of *Perspectives on Business and Economics* for a description of how the alternate approach was implemented in the recent Italian pension system reform.

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[7]These transition rules were adopted in order to be fair to older Swedes who have long planned their retirement years based upon the old system's rules.

assets, instead of with prices. Also, unlike its predecessor, the new system will adjust benefit levels rather than contribution rates in order to cope with a population that is living longer, having fewer children, and retiring earlier. Although benefit levels will be uncertain, slow transition rules allow time for citizens to adjust their savings habits in preparation for retirement.

The winners and losers are clear. Contributors no longer have to worry about escalating contribution rates, but recipients must worry more about their retirement income. Additionally, blue-collar workers gain at the expense of white-collar workers, since the design is no longer systematically regressive.

Despite great advancements in financial sustainability, the new system would be vulnerable to collapse without its automatic balance mechanism. Changes in the size of the labor force and, more specifically, the wage bill may cause the automatic balance mechanism to activate. Similarly, the ABM may be necessary to combat consistently underestimated life expectancies and lingering transition rules.

In short, the reform was necessary, appropriate, and successful, but it has its downside. Other nations facing similar problems can hopefully learn from the Swedish reform.

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