

Social Security Reform, with a focus on Sweden

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Social security reform is a hot topic in many countries around the world, allowing benefits from cross-country perspectives. The ongoing reform in Sweden has many good features, particularly the change to basing pension benefits on the entire history of earnings of a worker, rather than the old reliance on earnings levels in just 15 years. Naturally, this essay focuses on features that may not be so beneficial. After general discussions of funding and some of the differences between defined benefit and defined contribution systems, it focuses on two issues – income distribution and access to the capital market for the funded accounts.

Social security debates center on two issues that are economically unrelated, although sometimes politically related. One is the level of social security funding. The policy analysis community generally favors more funding. Sweden is seeking more funding eventually by dedicating 2.5 percentage points of the payroll tax to funded individual accounts, while cutting back on the partial funding of the rest of the system. The second central issue is the extent of the use of defined contribution (DC) as opposed to defined benefit (DB) accounts. On this issue, the policy analysis community is divided, with disputes centering on the political implications of the alternative approaches. Along with the 2.5 percent funded DC accounts, Sweden will use 16 percentage points of payroll for a very interesting DB variant - one that has more automatic adjustments than is standard and moreover is couched in the vocabulary of a DC system. Indeed, it is referred to as a notional defined contribution (NDC) system.

Funding

Populations are aging. Without large changes in retirement ages, there must be a trend of rising taxes and/or declining annual benefits (relative to earnings). More funding can reduce this trend, although politically plausible levels of funding do not reverse its direction. Increased funding can finance part of benefits out of the excess of the rate of return over the rate of growth

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times the level of funds. This helps to lower future taxes for any level of benefits (or vice versa). But funds must come from somewhere - from currently raising taxes, cutting benefits or finding some other source of revenue (which would have an alternative use). So the purpose of more funding is to increase the burden on current generations in order to lower the burden on future generations. This is similar to a decision to raise taxes or cut spending in order to decrease the public debt. (Provided, of course, that the cut in spending is not a cut in public investment.) Economists see advantages in smoothing tax rates and foresee large tax increases in the future and so generally favor more funding, although there is considerable disagreement on how much.

Economists recognize that the real gain from funded DC accounts is a change in intergenerational distribution; that a widely-made argument of higher returns from funded DC accounts is not a legitimate argument. Let me present and correct that argument. Some analysts and politicians compare the long-run return on assets with the long-run return in a pay-as-you-go (PAYG) system, which, as is well known, is the rate of growth. Since long-run rates of return exceed rates of growth, this is sometimes presented as a pure gain. But it is wrong to analyze policy by considering only the long run, not including the short-run costs and benefits. It would be wrong to say that having the rate of interest exceed the rate of growth implies that a funded system is better. A full analysis shows that there is no gain available for everyone from funding per se, but an intergenerational redistribution.

This correct argument can be seen by considering the infinite-horizon present-discounted-value (PDV) budget constraint for social security. Basing benefits on individual accounts does not change this constraint per se - taking some social security revenues and moving them into funded individual accounts leaves behind a revenue gap. Combining the need to fill this revenue gap with the other effects of creating the accounts leaves the PDV constraint roughly unchanged. The overall rate of return, which equals the rate of interest on assets, minus the extra taxes needed because of the revenue gap, is equal to the rate of growth, just as before. In contrast, raising revenues or lowering benefits do change the future PDV constraint.

There are two aspects to increased funding, both of which matter. One is the growth of national capital and the other is the fiscal (or accounting) position of social security. More

National Academy of Social Insurance (Diamond, ed., 1999). The views expressed are my own.

growth of national capital increases resources available in the future; a stronger fiscal position for social security affects the political process that allocates costs and benefits in the future. So, economists tend to favor funding that increases national savings, not funding that is merely relabeling or shuffling of liabilities. To this end, increased funding within social security should not be offset by larger government deficits outside social security.

If more funding is wanted, there are multiple alternatives. Funding can be in government bonds or in a diversified portfolio. Funding can be in a central fund controlled by a government agency or in individual accounts controlled by individual workers. The central gain from funding, that of accumulating resources to benefit future cohorts, is similar whichever route one takes. While portfolio diversification can be done with or without individual DC accounts, putting the choice of portfolio in the hands of workers makes little sense unless workers bear a large fraction of the consequences of such choices.

Having multiple alternatives for a diversified fund is not just a theoretical option, since different countries have chosen differently. Funding with a central diversified portfolio within a DB system has been done here in Sweden for years (and will continue in a buffer stock), is being done in Canada and Switzerland and has been proposed by the finance minister in Ireland and the Clinton administration in the US. Funding with a central fund within a DC system has been done by the provident funds of Malaysia and Singapore. And funding can be done with worker choice over portfolios made available by private providers within a DC system, as was pioneered in Chile and followed in other Latin American countries, implemented in the UK, and on track here in Sweden. Thus, the level of funding and degree of portfolio diversification are economically unrelated to the choice between DB and DC systems.

DB and DC

Let me start with definitions of DB and DC systems. A defined benefit (DB) system has a benefit formula that relates annuitized benefits to the history of earnings covered by social security (with uniform benefits as a special case). Allowing a lump sum to replace some or all of the annuitized benefit is a minor wrinkle from this abstract perspective. The annuitized benefit might be a single-life annuity or joint-life. Indeed, how alternative systems would treat women is

a significant part of the debate in the US. Very significant historically is that DB systems have based benefits on earnings subject to tax, not taxes paid. Since tax rates have tended to increase significantly, this has been part of the mechanism for large transfers to early cohorts. For mature systems that may not increase taxes much more, this aspect is of much less importance today.

A funded defined contribution (DC) system is one that mandates contributions, accumulates funds in individual accounts based on actual returns on portfolios, and then converts account accumulations into benefits through some combination of annuitization, lump-sums, and restricted monthly withdrawals. There are a host of differences between well-designed examples of the two types of system, but one of the important ones is the focus of attention - DB systems focus attention on benefits relative to the history of earnings; DC systems focus attention on taxes paid, and so also on redistributions. In democratic societies, this difference in focus, in framing in the vocabulary of cognitive science, can affect political outcomes.

I want to digress for a moment to relate pensions to Erik Lindahl's important analysis of benefit-based taxation. From this perspective, DC accounts without any redistribution are an example of benefit-based taxation, except for the redistributions inherent in uniform annuitization. That is, during the accumulation phase, the future recipient of a DC pension pays for the financing of the account. However, when an accumulation is converted into an annuity with a conversion factor that does not vary with individual life expectancy, then a DC pension ceases to be an example of benefit-based taxation. Since higher earners tend to live longer than low earners of the same gender, this phase of a DC system tends to redistribute from low earners to high earners. Of course, the redistribution in a pension system needs to be viewed within the context of the entire system. Entire systems may also contain taxation above the level that is credited for benefits, a flat DB benefit to supplement the DC, or a minimum benefit provision. It is also important to remember that, like Wicksell, Lindahl considered benefit-based taxation to be just only if income distribution were just. Since government can not improve income distribution without causing economic distortions, I approach social security recognizing the inevitable intertwining of incentives, insurance, and redistribution.

The distinction between DB and DC systems relative to income distribution is primarily one of politics not economics. One can set up a DB system with little ex ante income

redistribution (apart from that inherent in uniform annuitization). Conversely, one can build redistribution into a DC system. But the key political question is whether the choice of approach will affect the degree and method of redistribution. Some have argued that DC systems are more transparent than DB systems and therefore more democratic. However, in contrasting DB and DC systems generally, it seems to me that the right vocabulary is that of framing, not of transparency. DB and DC systems vary in the focus of what is transparent, not in the presence or absence of transparency. As we know from cognitive psychology, framing has a very powerful effect on thought. It is not surprising that it also has a powerful effect on political outcomes.

Some people think that there should be no overt redistribution within social security, with that left for annual tax and transfer mechanisms. I believe that is the wrong approach. First, social security includes redistributions that are not overt, as I have just described. Annual taxes and transfer are not well tailored to offset such lifetime effects. Second, measures based on annual income naturally look to total income (or at least both earnings and asset income). Social security looks only to earnings. Thus it is a tool that can avoid directly distorting savings decisions. Moreover, we are concerned about the lifetime poor and the temporarily poor differently, a distinction lost in annual measures. And we should remember that the purpose of social security is to have appropriate floors on replacement rates, while recognizing that income in retirement also comes from other sources. The appropriateness of such floors naturally varies with earnings levels. That is, concerns go beyond helping to reduce poverty and include the adequacy of replacement rates at different levels of income and different stages in post-retirement family structure. The Swedish Ministry of Health and Social Affairs has recognized both issues, recognizing two separate goals of pension policy - to alleviate poverty among the elderly and to reduce the decrease in living standards as people age. It is important to recognize that these are different objectives, both of which are espoused by governments. Framing redistribution in terms of appropriate replacement rates across earnings levels is a different framing from asking how much income to provide this year to the poor elderly. These different frames are likely to result in different political outcomes. In the absence of lump-sum taxation to provide a just income distribution, and in the absence of any other practical fiscal tools that relate to an entire history of earnings, it is important to do a good job of incorporating income distribution concerns into social security systems.

The Swedish NDC and DC accounts are converted into annuities using factors that depend on age and cohort but not gender or earnings level. Yet, on average, women live longer than men. And, on average, high earners live longer than low earners. Thus, a mandatory DC or NDC system without explicit redistribution will redistribute from men to women, on average, and within each gender, from low earners to high earners, on average. While there is considerable awareness of the difference across men and women, the difference by earnings level does not generally receive as much attention. This pattern was present in the old Swedish system, along with the further redistribution to high earners from the use of a short (15-year) averaging period. Basing benefits on all of earnings is an improvement. In the US, the differences in life expectancy are seen as part of the justification for a progressive benefit formula for balance. Argentina combines individual accounts with a DB system giving flat benefits, similar to the basic pension in the old Swedish system. By switching from a flat benefit approach in the old system to a guaranteed minimum in the new system, Sweden is changing this aspect of the nature of redistribution. The poorest are protected by the guaranteed minimum benefit, and the richest are subject to some payroll taxes that do not increase benefits, but in the middle the redistribution within each gender is from low earners to higher earners. This change in the system appears to be a change in the nature of redistributive intent, and one that is without any necessary ranking on efficiency grounds. It is not clear that this change in redistributive intent is an improvement.

DB and DC systems also differ in their natural responses to economic and demographic changes. In addition, there are differences in how they generate political forces that can affect future legislation. Let me give an example of the latter affecting DC accounts. The clear message to individuals about these accounts is that the resources in an account belong to the worker. The worker controls how it is invested, with very little apparent restriction, possibly little different from voluntary accounts. The worker receives all of the benefits financed by the accounts, provided the worker survives. Will this mind set about these accounts lead to objections to the restrictions that are placed on the accounts? The primary restrictions are on the necessity of annuitization, the form of annuitization, and the need to survive to retirement age (or transfer the money earlier) in order to receive anything from the account. All of these could well be questioned by workers who prefer to leave the money to an heir, who prefer lump sums, or who want alternative forms of annuitization, all of which may not work as well from a social point of view. So, there is concern about the political sustainability of the restrictions on DC accounts to

the extent that workers come to think of the accounts as belonging to themselves. A similar issue arises for NDC accounts to the extent that they are described in similar terms.

Notional Defined Contribution accounts

The notional defined contribution (NDC) system in Sweden is partially funded (a buffer stock of assets) and uses automatic adjustments to preserve financial stability, rather than relying on future legislative actions. Social security systems are typically indexed to prices and/or wages, to decrease the frequency of legislative interventions and to fix expectations that will affect the interventions that do occur. The NDC approach goes further by also adjusting benefits for changes in cohort life expectancy and by indexing both the accumulation factor before retirement and the growth of benefits after retirement to earnings growth, since earnings growth is central to the financing of the system. Recognizing that labor force growth as well as average earnings growth are important for financing, there is also a fallback adjustment, if needed, to the growth of total, rather than average, taxable earnings. The use of a wage growth index before retirement is common in DB systems and will not be discussed. I will consider the adjustment of initial benefits for life expectancy and the adjustment of benefits in payment by a wage index.

The NDC system adjusts benefits for life expectancy at the time a cohort reaches the age when benefits can be claimed (without disability), using the actual (period) mortality table, not a projected (cohort) table. A standard DC system would use projected mortality when determining benefits, thereby reducing annual benefits with increases in expected length of life. By using a period mortality table, the NDC system sets benefits higher than if a projected cohort table were used in the same formula. Nevertheless the relative decline in benefits with life expectancy is roughly parallel to that if a cohort table had been used. Indeed, in a simple example, benefits, though higher, fall more rapidly in percentage terms than if a cohort table were used. A standard DB system would use a benefit formula that is not related to life expectancy, although the benefit formula could be legislated to change over cohorts to reflect anticipated life expectancy. This was done in the US in 1983 legislation that slowly phased in cuts in annual benefits by increasing the “normal retirement age” from 65 to 67. The idea of lowering benefits for longer-lived cohorts as a way of limiting cost does seem appropriate. However I question the approach

of the NDC system that, like a DC system, does 100 percent of the automatic adjustment to longer lives on the side of benefits and zero on the side of taxes.

The trend to longer lives requires some adaptation inside and outside social security. Unless workers save more or retire later, they will have less per month in retirement. A sensible adaptation would have some of all three - more savings, longer work and lower retirement spending. Social security itself does not require anyone to retire at any age. After eligibility to claim benefits at age 61, a worker can wait and receive larger benefits that start later. Thus, social security allows workers to adapt by working longer for larger monthly benefits. But of the other two adaptations - lower monthly benefits and higher savings, the automatic adaptation is completely on lower benefits, without any currently legislated increases in future payroll tax rates. Indeed the NDC approach seems to take avoidance of increased taxes as the single overriding goal of system design. It seems to me that this approach loads too much of the response to increased life expectancy onto benefit cuts.

The use of a wage index for benefits in payment (wage growth minus 1.6 percent) places some of aggregate wage growth risk on retirees. Use of a price index, or a combination of the two indices, would place less risk on retirees. Finance principles suggest that retirees should bear some of wage growth risk. This is reinforced by relative income concerns, since some retirees will live a long time. But, retirees are less able to bear risk than younger workers, suggesting that the NDC rule may involve too much risk on retirees. A different index, such as an average of wage and price growth, could change the risk. This can be done while preserving revenue neutrality and the expected growth of benefits after retirement. Less indexing of benefits to wages, and so less correlation with revenues, implies a higher likelihood of a need for further legislation. But avoiding new legislation is not an absolute and should be balanced against the risks falling on the elderly.

Workers' questions about the differences between the NDC and DC accounts could generate political pressures. From a worker's point of view she is paying for both of them. Why does one pay a higher rate of return than the other? Why is one subject to more restrictions than the other? Could this be handled differently? Yes. The restrictions on the two could be made the same. And the rates of return could be changed. The NDC system is paying a lower rate of

return because earlier generations of retirees received higher benefits than was financed by the taxes they paid. Much of this implicit liability to the continuing social security system is history and can not be reversed. The question now is how to pay for the implicit liability, just as future cohorts must pay for the national debt. The current design allocates none of this liability to the DC accounts; all of the liability left on social security falls on the NDC accounts. One approach to encouraging better understanding of implicit liability would be to equalize the taxation of the two kinds of accounts. A portion of the 2.5 percent earmarked for DC accounts could be transferred to the NDC buffer stock, thereby lowering the apparent return on the funded accounts and increasing the return on the NDC system. To reflect the incompleteness of the asset value of the NDC buffer stocks, both types of accounts could be "taxed" at the same percentage rate.

Benefits

Benefits can first be claimed at age 61 and this age is not scheduled to change. This strikes me as a reasonable balance between the likely ability of workers to work longer as health improves in the future and the likely desire of workers to retire earlier as they become wealthier. The structure of actuarial adjustment of benefits after age 61 allows workers to work longer for higher benefits. But that does not mean the minimum age for retirement benefits is irrelevant, since life expectancies vary by person and since some people will not do a good job of planning for a potentially long future. With the ability to time annuitization, those with shorter life expectancy will have an incentive to claim early, while those with longer life expectancy will have an incentive to delay claiming. Nevertheless, the availability of some choice is good provided the actuarial adjustments reflect life expectancies of those making different choices.

Also important is the treatment of a survivor relative to the treatment of a couple. There are economies of scale in the cost of living of couples. This is recognized in the guaranteed pension by setting the guarantee at 2.13 base amounts for a single person and 1.90 base amounts each for members of a couple. The ratio of .56 for a single person relative to a couple seems low compared with studies of economies of scale, which suggest that a survivor needs roughly 70 percent to maintain the living standard. For US Social Security, the typical couple has between 1/2 and 2/3 going to the survivor (subject to further complications related to age at claiming). Of course, people can take advantage of the economies of scale in living without marrying. In the

US, panel data show that income relative to need tends to drop considerably when women are widowed (Holden and Zick). It would be interesting to see such a calculation done in Sweden.

Economies of scale in living suggest that a survivor should have more than one-half of the couple's pension income, as would happen if husband and wife had the same earnings. This issue is of further concern since there is diversity in incomes of spouses. Insofar as a lower earning spouse is the survivor, there is a further fall in the standard of living. This may be further exacerbated if husband and wife chose to retire at the same time even though the wife may have been younger, and so had a larger actuarial divisor in determining her pension. The funded DC accounts allow joint-life annuitization (with spouses or children) and transfers of pension rights between spouses earlier. But these are not allowed in the NDC accounts. More choice permits a couple to adapt to differing needs when both are alive relative to their needs when just one might be alive. However, allowing choice is an opportunity to gain financially if one of the couple is in poor health. There is always an issue of greater choice having both positives and negatives when pricing is not ideal, as it never can be. This suggests that there should be limits on joint-life annuitization. But limiting this opportunity only to the funded DC accounts seems arbitrary. And I am surprised at this lack of intervention within the family. Sweden, like the US, provides protection for the claims of surviving spouses in estates. I wonder if there should be similar protection for mandatory pensions.

Organizing DC accounts

The accumulation phase of funded DC accounts can be organized in different ways. The simplest is for the government to select the portfolios for the individual accounts. Everyone could be given the same portfolio, as was done in Singapore and Malaysia. While this would minimize administrative costs, consideration of risk bearing suggests that different people should hold different portfolios. The importance of this issue varies with the size of the portfolio and the extent of savings outside the system, since many people could offset shortcomings in the balance between stocks and bonds in the social security portfolio by complementary changes on the balance of their portfolios. In theory, and I suspect in practice, one could do better by having the government vary portfolios based on age – for example, with a balance between stock and bond index funds shifting toward less risk as people age.

While analysts disagree on the economic importance of a wide array of choices for workers, the heart of the debate in the US is on the politics of portfolio choice - how well the government would select a portfolio. The widely read World Bank book, *Averting the Old Age Crisis*, highlighted the poor performance of some governments in investing centralized funds. However, many of the countries cited had governments that didn't function well on many dimensions and capital markets that offered poor choices to everyone. So one needs caution in deciding for which countries this message is important. Moreover, there has been progress in the ability of governments to invest well. In the US, the evidence is that state and local governments are doing better than earlier with their diversified portfolios. Recently, they have done as well as privately managed portfolios, and, in the past, the magnitude of the problems was not enormous. More generally, one would expect the use of index funds to make this problem much easier to deal with. However, the feasibility of heavy reliance on index funds depends on social security funds not being too large relative to the capital market.

There are various ways to move portfolio choice away from the government and to individuals. Before turning to different approaches, let me comment on allowing choice at all. An obvious economic disadvantage to worker choice is that administrative costs go up. I will say more about this as we consider the costs with different organizational modes. In addition, individual choices will vary in a way that a centralized formula would not duplicate. Is this good or bad? My answer is some of both, with the balance waiting to be better informed by more research on individual portfolio choice. That is, some individuals will choose well (in an *ex ante* sense) given their degree of risk aversion and given the risk-return frontier that is made available. Others will choose badly - choosing points that are not on the frontier or choosing points that are not appropriate given their risk aversion. After all, understanding the principles of finance is not simple. The advantages of diversification, the concept of a risk-return tradeoff, the difficulty of inferring underlying stochastic structures, and the risks from attempting to time markets are not intuitively simple concepts. Indeed cognitive psychology tells us that statistical properties generally are not intuitive, even much simpler concepts than those needed to understand portfolio choice. Moreover, given the noise in returns, it is difficult for anyone to tell good portfolio managers from bad ones. Studying Swedish mutual funds, Dahlquist, Engström and Söderlind "find little evidence of persistence in performance." And with some organizational structures,

efforts to prevent fraud and mis-selling will be extremely important. The need for such efforts was highlighted by the "mis-selling scandal" in the UK, when many workers lost by being induced to give up defined benefits and switch to funded accounts. Choices will be regulated and one needs to recognize that like the politics of direct government portfolio choice, the politics of portfolio regulation has its own potential shortcomings.

We know some, but not as much as I would like, about individual choice. There have been studies of the choices in employer-provided DC plans in the US, called 401(k) plans. The simple summary is that broad averages tend to move in the directions that finance theory suggests is sensible, but considerable numbers invest nothing in stocks and some invest completely in stocks, and it is likely that a significant fraction are not making really good choices. For example, many people invest heavily in the stock of their own employer - suggesting limited understanding of the advantages of diversification - both across stocks and across the combination of earnings and asset returns. In addition, many people who choose individual stocks appear to trade too much - lowering the point on the risk-return frontier after trades, on average, as well as incurring trading costs. There is suggestive evidence that individuals do less well than the mutual funds in which they invest by trying to time the market, moving between classes of assets in a way that increases risk relative to expected return and indeed seems to lower expected return on average as well. As in consumer markets generally, people choose products at higher costs than seemingly identical products also available in the market. So there is lots of reason to be skeptical about the gains from individual choice per se in mandatory accounts. Will learning-by-doing take care of that? The evidence suggests not. US experience with worker education in 401(k) plans shows that substantial and expensive worker education is needed to have a noticeable effect on workers' investment choices.

Deciding to have individual choice still leaves different approaches to organizing the market. Individual choice from a limited menu of alternatives can be done cheaply by having the government organize the accounts. That is, the government can select a limited set of alternatives and organize bidding by providers for this limited number of places in the set of alternatives. This approach of government-organized accounts is done best with a separation of management of investment from record keeping and communication, as is being done here. This approach is in sharp contrast to having a privately-organized market, where a wide array of private providers

determine what is available in the market (subject, of course, to regulation) and individuals choose providers, not just portfolios.

In the US, the model for this centralized approach is the Thrift Savings Plan (TSP), a defined contribution system that the federal government provides for more than 2 million employees. Let me describe briefly how this works. The TSP has three investment options - an S&P 500 index fund, and two bond funds. Individuals can spread their accounts across these three funds as they wish. TSP is in the process of adding several more options. The fund managers, who were selected in a competitive bidding process, exercise the share voting rights, as do fund managers generally in the US. To date, there has been no political interference in the investment process. The cost of investment management is tiny, about 1 basis point, 1/100 of 1 percentage point, of assets under management each year. Overall costs are also small - on the order of \$20 per person per year, with investment management being roughly 10 percent of costs. However, this low cost is helped by having the monthly deposits come electronically from a single employer and by having the retail level of providing information to workers handled and paid for by the employing federal agencies, not the TSP. Indeed the TSP does not even have a toll-free telephone number. Moreover, on average, federal employees are better educated and with more access to inexpensive communication (the internet) than the American public generally. That is why I estimated that expanding the TSP approach to the entire US population, with a politically plausible level of services, would cost roughly twice as much per person per year as does the TSP.

One advantage of this approach is that it pretty much eliminates profit-oriented advertising to workers. This has a negative potential of providing workers with too little information, as has been the case with Social Security in the US, where annual statements should have been instituted long ago. There is also the issue of how well the selection process for providers will work, how large might be corruption, collusion and rent-seeking. The scope for good selection is helped if this is not the only institutional pricing in the country so that other (private and public) uses of this organizational approach can serve as a benchmark.

In contrast with this centralized approach, a privately-organized market is meant to give workers access to a wide array of choices, with the design of the choices done by the market,

subject to regulation. The basic intent is easy entry for potential competitors, relying on competition, not regulation, to hold down costs and to make choices attractive. This is the approach that was taken by Chile, although they implemented some rate of return guarantees that have had the effect of severely limiting the actual range of choices. It is also the approach that has been taken by the Latin American imitators of Chile.

A market with a wide choice of mutual funds does not behave like an idealized competitive market. Individuals are somewhat responsive to differences in price and quality, but that responsiveness is limited in both size and speed. Thus, the pressure on pricing from consumer responses is present but limited. We would expect to find equilibrium with prices above marginal costs, with advertising to attract profitable customers, and with a wide range of prices for similar or identical products. Indeed these properties hold for all consumer markets, but seem particularly important here. A mandated market aiming at everyone will include a large number of inexperienced investors. It will include a large number of low-earners, with small accounts and so little incentive to monitor closely. Little monitoring will be done by some because of their limited attention to retirement issues, and by others because of the presence of income guarantees once they do retire. This is a setting where procrastination in reconsidering portfolio providers may be particularly rampant - there is little apparent gain from changing providers this month rather than next month, even if one had the ability to tell good providers from bad ones. And the great stochastic variability in returns makes that hard. This is further complicated if the pricing structure for administrative charges is complex.

Without a well-developed industrial organization of such mandated markets, we can turn to existing mandatory and voluntary markets for insight into costs. In Chile, the only allowable cost is a front load, which is roughly 15 percent on average. Thus, benefits are 15 percent lower than they would be if these costs could be avoided. In other Latin American countries, accounts are smaller and the front load is larger in percentage terms. With some costs being fixed costs per account, it is not surprising that costs are higher in percentage terms for smaller accounts, a cautionary point for the accounts here, which are based on only 2.5 percent of earnings.

A measure of total costs needs to reflect charges on annual balances, front-loads and exit fees. Called the charge ratio, this can be calculated as the percentage loss in accumulations at

retirement (compared with an account with no charges) for a worker who has a 40-year career and faces the "average" structure of charges (including the costs from the typical pattern of switching among providers). For the UK, Murthi, Orszag, and Orszag estimate the charge ratio to be above 1/3 for the accumulation phase, not counting annuitization costs. That is, benefits are 1/3 lower in the UK than if these costs were avoided.

In the US, there are analyses of the voluntary mutual fund industry. For 1998, Rea, Reid and Lee find charges of 109 basis points for bond mutual funds and 135 basis points for equity mutual funds on average. This includes annual fees and an annualization of front loads but not brokerage charges for transactions by the funds. Nor does it reflect the fact that many US investors pay separately for investment advice, sometimes as much as 1 per cent of assets per year in what are called wrap accounts. Dahlquist, Engström and Söderlind report annual charges of 1.5 percent on equity mutual funds and 0.7 percent on bond mutual funds in Sweden, charges that do not include front loads or exit fees.

While a charge of 1 per cent of balances per year sounds small, it results in a charge ratio of roughly 20 per cent. That is, a worker paying 1 per cent of balances each year would have roughly 20 per cent lower retirement benefits than if these costs could be avoided. Some find this number surprising. But a charge of 1 per cent per year falls on deposits roughly 20 times on average if deposits are made annually over a 40-year career. The relationship between annual charges on balances and total loss at retirement is close to proportional with a factor of roughly 20. These costs are large, suggesting that wide choice may not be worthwhile.

One approach to holding down costs in privately-organized accounts is to try to increase the price sensitivity of consumers by restrictions on allowable products, either directly (e. g., only bond or stock or balanced index funds) or indirectly (e. g., through the incentives from guarantees, as in Chile). Less variety in products is likely to put more attention on pricing. While index funds vary, even those using the same index, it is easier to appreciate the differences. Another approach is through direct price regulation, while still trying to give workers access to a wide market with easy entrance. This is the approach being taken here in Sweden. Firms must have approved prices before they can accept mandated funds. But price regulation raises the long-standing issue of how well a government can regulate prices in the interests of consumers

over the long haul. Worldwide, the record is not terribly good. And even if successful, the costs will be considerably higher than with government-organized individual choice on the TSP model. For example, even if the government is very successful and reduces charges to half those in the voluntary market, the charge ratio is still over 10 per cent. In sum, privately-organized individual funded accounts are expensive. Government-organized accounts, with limited alternatives and bidding for the opportunities, are significantly cheaper, but successful implementation requires able government.

Concluding remarks

There are many ways to have good systems for providing retirement income, although many countries do poorly. The Swedish design succeeds in providing reliability and reasonable labor market incentives. Maybe more should be done to have a better pattern of replacement rates for individuals and families and lower administrative costs.

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