Future Prospects For Notional Defined Contribution Schemes

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Currently throughout the world most public old-age pension schemes are based on the Pay-As-You-Go Defined Benefit (PAYGO DB) model. Defined Contribution (DC) schemes have been in place for many decades, but until quite recently they were only found in private and occupational pension schemes. In 1981 Chile became the first nation to shift from a PAYGO DB scheme to a funded DC scheme. During the 1990s a number of other nations around the world, including seven more nations in Latin America, shifted from PAYGO DB schemes to fully funded DC schemes or to a mixed model that included a funded DC component or option in combination with a PAYGO DB scheme (Williamson, 2001).

In recent years, among international pension policy experts, there has been a groundswell of support for this new approach to old-age pension provision. Virtually all nations that have mature PAYGO DB schemes in place are facing current or projected problems financing these programs due to program maturation, changes in the world economy (competitive pressures linked to globalization), and population aging. The shift from the traditional PAYGO DB approach to a funded DC scheme or to a multi-pillar scheme that includes a funded component has come to be viewed by many experts as the best solution to the projected financing problems most schemes face. The trend away from PAYGO DB schemes toward funded DC schemes continues today.

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However, during the mid 1990s yet another model emerged based on the concept of "notional accounts." Pension schemes based on the Notional Defined Contribution (NDC) model have been or are in the process of being introduced in Sweden, Italy, Poland, Latvia, Mongolia, China, and the Kyrgyz Republic (Fox and Palmer, 2001). Most of these countries directly link their new schemes to the NDC model, but in Italy it is more common to refer to the new model as an actuarially based pension scheme (Franco, 2000). A major thesis of this article is that the emergence of NDC schemes in recent years is going to have an impact, possibly a major impact, on the current trend away from PAYGO DB schemes in favor of the funded DC model.

The structure of NDC schemes

The NDC model has some characteristics associated with PAYGO DB models and some associated with funded DC schemes. The NDC model (sometimes referred to as a PAYGO DC scheme) can be viewed as a variant of the PAYGO DB model with a number of provisions designed to assure a much closer link between contributions and benefits than found in most PAYGO DB schemes (Cichon, 1999). The NDC model is based on PAYGO financing. The funds collected in the form of payroll taxes are paid out as pension benefits to those who are currently retired. It differs from a PAYGO DB scheme in that with the NDC scheme an individual "notional" (or virtual) account is established for each worker. This account is credited for that portion of payroll taxes (including both the employee and the employer portion) that has been used to pay pension to the currently retired.

Notional Defined Contribution Schemes are spreading

The size of the payroll tax used to pay pensions and credited to these notional accounts varies from one country to another. What they all have in common is that these accounts are notional, not capitalized. If they were capitalized, appreciation from year to year would be based on trends in capital markets, but these notional accounts use a differ-

ent approach to indexing. The procedure used varies from one country to another, but in all cases it is in some way based in large part on the performance of the economy. In some countries such as Sweden the indexing is based on trends in average wage levels. In other countries such as Latvia it is based on trends in what is referred to as the "wage sum"; that is, change in the total wage base subject to the payroll tax (Fox and Palmer, 1999). This second alternative takes into consideration trends in both wage levels and the number of workers contributing.

Another distinctive component of NDC schemes is the way in which the starting pension benefit is calculated when the notional assets are annuitized. While there are differences from one country to another, with the exception of China they all incorporate some mechanism to adjust for changes in life expectancy that take place over time. In Sweden, for example, the formula incorporates the life expectancy at various ages as established when the worker's cohort is age 65 (Sundén, 2000).

The formula incorporates life expectancy and rate of economic growth

In addition to life expectancy, it is common for the formula to also build in an assumed rate of economic growth. In the case of Sweden the rate of 1.6 percent is assumed. If after retirement the rate of growth exceeds this level, the benefit is increased; if it falls below this level it is decreased. Thus in Sweden, as in all countries with NDC accounts, the indexing of pension benefits after retirement is based on the performance of the overall economy. Retirees share in the gain or they share in the pain depending on how well the economy does. The goal is to adjust the burden of paying for these pension benefits as a function of economic performance as a way to keep a balance between payroll tax revenues and pension benefits paid.

Another distinctive feature of NDC schemes is that they provide notional credit for certain categories of people who are out of the paid labor force or not subject to payroll taxes for certain reasons. The contingencies covered vary from one country to another, but most include credit to a parent (typically the mother) who takes time off from work to care for a young child. The amount of time allowed varies from one country to another as does the level of compensation provided. Other such contingencies include those who are enrolled in higher education, those in the military, as well as those who are eligible for disability or unemployment benefits (Palmer, 2000). Typically, contributions are made to the scheme on behalf of such persons out of general government revenues.

There are other components of the pension schemes in nations with NDC accounts that are not actually part of the NDC tier itself, but are very relevant to the impact of the overall scheme. For example, several of these countries have also introduced a funded DC tier. The result is a mixed model that offers some diversification of risk. Part of the worker's pension is subject to the risk of trends in wage levels and trends in the number of contributing workers, and part is subject to the risk of trends in financial markets.

Another component that all countries with NDC schemes have introduced is a minimum pension. This pension is designed to assure that very low-wage workers who have contributed to a specified number of years will be assured at least a basic minimum pension benefit. This minimum pension is not part of the NDC, but it is there in response to the lack of any effort at redistribution in connection with the NDC component. In some countries, such as Sweden, the minimum pension is quite generous and as a result there is considerable redistribution if you take into consideration the entire scheme. In other countries, such as Mongolia, this component is much more modest and the result is less income redistribution (Cichon, 1999).

While the NDC schemes are designed to keep a balance between contributions and pension benefits paid out, it cannot be assumed that there will be a balance under all conceivable demographic and economic scenarios. For this reason, some schemes such as those in Sweden and Poland build in provisions for a reserve buffer fund. Sweden is able to draw on pre-existing funded accounts that were in place for several decades prior to the introduction of the NDCs. In Poland part of the payroll tax is set aside in a special reserve fund for just such contingencies (Chlon et al., 1999).

Strengths of the NDC approach

One strength of the NDC model is that it will, at least in the long run, help keep pension benefits in balance with available payroll tax revenues. Policy

makers in Sweden, for example, believe that it will be possible to keep the payroll tax at the current 18.5 percent level (with 16 percent going to the NDC accounts and 2.5 percent going to the funded DC accounts). The NDC model goes a long way toward dealing with likely demographic pressures and likely economic fluctuations in the decades ahead. However, the Swedish scheme does not build in an automatic adjustment for possible declines in the size of the labor force, although schemes in some countries such as Latvia do. Sweden recognizes that its current model does not adjust for all contingencies and thus has a special "break" that would be implemented to reduce pension benefits in the event that revenues and pension benefits get too far out of balance (Sundén, 2000). While a case can be made that the NDC model, particularly as implemented in Latvia, deals with the long-term balance between payroll tax revenues and pension benefits, it does not offer a solution for those countries that face a serious imbalance today or in the very short term, as is the case for many Eastern European nations and many former Soviet Republics (Valdes-Prieto, 2000).

A second strength of the NDC model is that the scheme is more transparent than the PAYGO DB alternative. The worker can at any time check to see how much is in his or her account and knows that the amount in that account is a function of past payroll tax contributions that have been indexed based on a formula that will seem reasonable to most workers. It will not take long for workers to realize that if they retire early, pension benefits will be low and that for each year retirement is delayed benefits will increase substantially (Normann and Mitchell, 2000). This increased transparency may well increase the average age of retirement and increase the political support for the program as people can expect to get out in direct proportion to what they put in. The worker who opts to remain in the labor fore for another year can expect to benefit in three respects: (1) the notional assets already in the account will grow for an additional year, (2) there will be yet another year of notional assets added to the account, and (3) the pension formula will call for a higher pension based on fewer years of projected life expectancy at the time of retirement. If a substantial portion of workers elect to remain in the labor force longer than they would under the current PAYGO DB scheme, this would ease the burden of paying for those who are retired. However, if over an extended period of time the notional rate of return were to fall below the level realized in funded schemes, the NDC model would probably be less effective in delaying retirement than would the funded DC alternative.

A strength of the NDC model touched on earlier is that it does a better job than the PAYGO DB model of adjusting for demographic fluctuations, including increases in life expectancy and decreases in the size of the labor force. It also adjusts for fluctuations in the economy. No promise can be made that the current formulas fully compensate for all demographic and economic contingencies, but they are an improvement over the structure of PAYGO DB schemes in this respect.

Another purported strength of the NDC model is that such schemes are less vulnerable to political risk than are PAYGO DB schemes. The argument is that they are less vulnerable in part because of increased transparency and the lack of redistribution. Also contributing to the political viability of such schemes are the mechanisms for automatic cuts that have been built into the indexing procedures. This way any cuts needed due to an increase in life expectancy, a decrease in the number of contributors, or fluctuations in the economy can be made without the need for additional legislative action.

The NDC model can adjust for demographic and economic fluctuations

Critics, however, point out that even NDC schemes are vulnerable to political risks. Decisions about how to do the indexing and how to change the indexing are political. Decisions about who to credit for time out of the paid labor force and how much to credit them are political. Because the NDC scheme does not include any redistribution, some sort of guaranteed minimum pension must be included. The generosity of this pension, which could become the major source of pension income in many of the less affluent nations, is vulnerable to political risk. In short, while nations with NDC accounts may reduce political risk somewhat, substantial vulnerability to political risk and the politics of spending levels remains in all countries with NDC schemes. It is also possible that the transparency of NDC schemes will make it easier to compare the returns on the notional accounts with those on comparable private sector accounts. When the discrepancy favors the private sector accounts, this may undercut the political support for the NDC scheme (Disney, 1999b).

Many advocates of the NDC model argue that because it is indexed on the basis of trends in average wage levels (or aggregate wage growth) rather than trends in financial markets, NDC benefits are less volatile (Disney, 1999a). In most countries the stock market does fluctuate much more dramatically than does the aggregate wage bill. However, critics point out that in some of the transition economies there have been very dramatic gyrations in the aggregate wage bill, fluctuations that are comparable to major stock market shifts that mature capitalist economies periodically experience.

Limitations of the NDC approach

One of the major criticisms of the NDC approach relative to the funded DC alternative is that the assets in the NDC accounts are not capital assets. There is no reason to believe that such a scheme will contribute to the national savings rate. For this reason there is not likely to be any boost to the economy, and in many countries long-run economic growth is going to be very important when it comes time to pay for the retirement of the baby boom generation. A related argument, particularly for less developed countries, is that these NDC accounts would not be a source of the much needed capital to promote not only economic growth, but also the development of financial markets and institutions, such as the banking and insurance industries.

But no boost to saving, no redistribution

A downside of the lack of redistribution is that in the absence of a generous guaranteed minimum pension, a shift from a PAYGO DB scheme to a NDC scheme will generally result in greater income inequality among retirees. This characteristic is likely to make the NDC more popular among affluent workers, but less popular among less affluent workers and their advocates. Less redistribution means that it is likely that low-wage workers will end up worse off than under the existing PAYGO DB scheme. A NDC scheme will typically provide good income replacement (something in the range of 50 percent of pre-tax earnings) for workers who have contributed for 40 years or more (Fox and Palmer, 1999). However, for many women and irregular low-wage workers more generally the number of years of contributions will fall far short of 40 years and will need to depend upon the guaranteed minimum pension.

Women, particularly low-wage and single women, will generally be worse off under NDC schemes than under PAYGO DB schemes although they are likely to be better off than under funded DC schemes. One reason that women will tend to do poorly under an NDC scheme relative to women under a PAYGO DB scheme is that they tend to have low wages, they tend to have irregular work histories, and they tend to accumulate fewer years of full-time employment prior to retirement. As a consequence they can expect less by way of NDC based pension benefits than their male counterparts.

Also important are the various special provisions that have been built into most PAYGO DB schemes that help protect women. One is a benefit formula that is based on a specified number of best years, be it 15, 25, or 35 years. Any best years approach tends to benefit the many women who spend a number of years out of the labor force. NDC schemes have no such provisions. Many PAYGO DB schemes have special spouse benefits for women with little or no paid labor force experience; not so with NDC schemes.

Arguments can be made for and against the various protections for women that are built into many existing PAYGO DB schemes, but there is no doubt that they do help compensate for the impact of lower wages and irregular work histories that many women face due, at least in part, to child care responsibilities. While it may be true that less by way of such protection is called for today than fifty years ago, it is not clear that the reduction in such protection associated with most NDC schemes assures adequate protection for women today, particularly less affluent women.

While the NDC model will typically involve less economic risk to workers and retirees than the funded DC model, it does involve greater economic risk than does the PAYGO DB alternative. As with the funded DC model, the NDC model shifts some risks (in this case those linked to demographic change or fluctuations in the economy) from the government to individual contributors. Critics of the NDC approach argue that it is more appropriate for the government rather than the individual to bear these risks.

Is the NDC model likely to become widespread?

While it is not yet clear how many nations in the European Union will adopt the NDC model, it is

possible that eventually many will. One reason is that it offers a way to help deal with the problem of financing the retirement of the baby boom generation, an issue that most of these nations will soon be facing. It does so using what amounts to a combination of benefit cuts and tax increases. While it would be possible to achieve essentially the same result by making similar benefit cuts and tax increases in the existing PAYGO DB schemes, some analysts argue that it is actually easier to make such cuts in the context of a shift to a totally new scheme. However, any such policy shift will result in lower benefits to many people and if it becomes clear who will bear the brunt of the cuts, organized resistance may make any such transition difficult if not impossible.

Another reason that many of these countries may adopt the NDC model is that it would make it a lot easier to provide adequate pension coverage for workers who move from country to country as their jobs change or are relocated (Feldstein, 2001). This mobility of labor has started and is likely to increase substantially in the decades ahead. Pension coverage is going to become a major issue for mobile workers and the NDC approach is particularly well suited to such an environment.

Many of the transition economies of Central and Eastern Europe and of the various former Soviet Republics are faced with mature PAYGO DB schemes that, at least on paper, promise far more generous pension benefits than their economies can support. In some of these countries the number of workers contributing to the pension scheme has been contracting rather than growing in recent years and in some of these countries fertility rates have been decreasing; both of these trends may contribute to making the dependency burden worse in the years ahead. In all of these countries it has been necessary to make deep cuts in promised benefits. Many of these schemes are (or were) for all practical purposes in default. Failure to adequately adjust for inflation has become in many countries the de facto mechanism to cut benefits. In any nation that has undergone such an experience in recent years, the individual accounts associated with the NDC model may be attractive. It offers a way to introduce an individual accounts DC scheme without having to actually fund those individual accounts. It offers a way to spread the cost of any such transition across more age cohorts than is the case with a funded DC scheme.

The NDC model may also work well in the poor nations of the world more generally. The model is relatively high with respect to transparency which may be attractive in nations where corruption is endemic and where corruption has had adverse consequences for the receipt and level of pension benefits. It is also a model that unlike the funded DC approach does not require a well developed infrastructure of financial markets and related institutions. However, there are also reasons that the PAYGO DB model may be preferable in many poor nations. They tend to have very poor record keeping and the record keeping requirements of a NDC scheme are substantially more demanding than those associated with the typical PAYGO DB scheme. The need to keep up-to-date records on individual accounts for all workers, including many who may not have made contributions for years, may demand more administrative and information technology resources than many of these nations currently have available.

The NDC model may work well in transition and developing countries

Conclusions

The NDC model is likely to become increasingly common among the transition economies of Eastern Europe and in other formerly centrally planned economies around the world. It could well become much more widespread than it is today among nations in the European Union. It may eventually become common among poor nations, particularly those that currently have mature PAYGO DB schemes in place. While it is possible that the ascendance of the NDC model will in the years ahead greatly reduce the current enthusiasm for fully funded DC schemes, it is possible that eventually the most widespread model, particularly among nations with well developed financial markets, will be a mixed model based on three tiers: (1) a first tier minimum pension financed by general government revenues, (2) a mandatory NDC tier, and (3) a mandatory funded DC tier. While it would be possible to design a mixed model that responds to the financing problem pension systems will be facing in the decades ahead and that also adequately deals with the special needs of women and low-wage workers, more likely would be a scheme that deals with the government financing problem, but does not adequately meet the needs of vulnerable (and politically weak) segments of the work force.

As popular as the NDC model or a mixed model with a NDC component becomes, this model is not going to be attractive for all categories of nations. In particular it is unlikely to be attractive for nations such as Chile, Mexico, Hong Kong, or the UK that have already shifted to largely privatized schemes. These countries are already dominated by funded DC individual account schemes and there is no reason to assume they will find the NDC model an attractive alternative. The United States is unlikely to adopt the NDC model because its financing problems can be fixed with much less radical "parametric" reforms, such as increasing the normal retirement age or the number of years of work the benefit is based on. Another reason is that in the United States groups representing the interests of those who would be hurt by the shift to the NDC model are well organized and would make the political price of supporting such a major change too high for most members of Congress.

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