

**REFORMING SOCIAL SECURITY:
WHAT CAN INDONESIA LEARN FROM OTHER COUNTRIES?**

by

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Introduction

The government’s draft social security law sets forth ambitious goals with respect to providing old age security to all Indonesians. However, it fails to spell out the details on how it will achieve these goals. That is probably a good thing because, as we all know, the devil is in the details, so it is important for a great deal of analysis to take place before the details are specified. This paper is a step in that direction. It outlines the key questions that should be asked and the answers that other countries are giving.

I will focus on two sets of issues that deal, respectively, with the two basic reasons for having public old age security schemes—1) ensuring that prime age workers who can save do save enough to

support themselves in old age, and 2) keeping out of poverty those who did not earn enough lifetime income to save adequately for this purpose.

The first set of issues concerns the contributory part of the scheme which should ensure sure that people save for their old age.

- Should the contributory system be defined contribution (DC) or defined benefit (DB)? (*In a DB scheme the pension is determined by a formula, usually based on the worker's years of work and wage, while in a DC scheme the pension depends on the worker's contributions plus investment earnings*).
- Should it be funded, partially funded or pay-as-you-go (PAYG)? (*In a PAYG scheme contributions by workers today are used to pay pensions to retirees today, so no assets back the pension promise, while in a funded scheme the worker's contributions are saved, invested, accumulated and later used to pay his pension*).
- If funded, how should the funds be managed (e.g. public or private management)?
- What kinds of investments should be allowed?
- How should the old scheme transition to a new scheme?

The second set of issues concerns people who do not earn enough in their prime years to save adequately for old age.

- What provision, if any, should the government make to redistribute to this group?
- Who are the potential targets of this redistribution?
- Should the safety net be part of the contributory scheme?
- How should people outside the covered formal labor market be protected?

Until now, Indonesia had simple answers to these questions. It had two contributory schemes—Jamsostek for formal private sector workers and Taspen for civil servants. Jamsostek is a provident fund--defined contribution and centrally managed. Taspen includes both a provident fund and a non-funded DB plan financed by the government. Both provident funds suffer from low rates of return (for long periods below the rate of inflation), high administrative costs and an early retirement age (55), which would make it costly to finance a reasonable pension—and indeed, they simply provide a small lump sum (rather than a pension) upon retirement or earlier. Coverage by these two schemes is low. The two plans together cover only 10% of the working age population, 14% of the total labor force and half of the formal labor force. (The other half of the formal labor force evades contributions). More than two-thirds of the labor force is in the informal sector—self-employed or working for small firms and outside of the contributory schemes. The draft law expresses an interest in extending some coverage to this group, possibly pre-funding part of the civil service pension and potentially introducing a defined benefit plan for private sector workers. This paper brings international experience to bear on these issues.

Briefly, we discuss why many countries are:

- moving away from defined benefit plans toward defined contribution plans;

- moving away from PAYG plans toward pre-funding;
- moving away from public toward private management of the funds;
- moving away from pure investment in government bonds and bank deposits toward more diversified investment portfolios.

Indonesia can learn from this experience how to avoid the mistakes that other countries have made. The most basic lesson is that it should not rush into a pay-as-you-go defined benefit (PAYG DB) obligation without a careful actuarial analysis of the long-term fiscal costs. This analysis will make clear the costs posed to a PAYG DB system by population aging, longevity increases, early retirement, and high evasion rates that characterize the Indonesian context. A pre-funded DC system insulates the system from some of these costs. A second lesson is that the problems of Jamsostek and Taspen mentioned above are not unique to Indonesia but in fact are common to centrally managed pension funds around the world. Pre-funding is important but questionable until a structure is put in place that avoids these problems. Many countries have been switching to a more competitive fund management structure for this reason. Third, the investment strategy followed by successful pension fund managers invariably uses a more diversified portfolio than that followed by Jamsostek and Taspen and, indeed, more diversified than that available in the domestic market—international diversification is essential to minimize risk and maximize returns. Fourth, the informal sector cannot be protected by the contributory programs that cover the formal sector. Any old age support for this group must come from a non-contributory scheme financed by the general treasury.

Part I of this paper briefly sets forth some of the basic demographic facts. Part II describes the almost universal problems in traditional social security systems that are PAYG DB and Part III discusses problems with centrally managed funded schemes. Parts IV and V lay out the multi-pillar model that countries have adopted to correct these problems. The over-arching object of these reforms has been to build a system that is more sustainable and equitable than the old systems and promotes economic growth. Their most important feature is the shift toward DC plans, greater pre-funding and decentralized competitive management of the funds. Also crucial is a more explicit safety net. Part IV focuses on the forms used for the privately managed DC pillar and Part V on the redistributive public pillar, both for those inside and outside the contributory scheme. The Conclusion summarizes what Indonesia might learn from the successes and failures of other countries in answering the policy question: How can the social security system be reformed to make it more equitable, more favorable toward economic growth and a more reliable source of old age income?

I. Population Aging and its Relevance for Social Security Reform

Over the next 30 years, the proportion of the world's population that is over age 60 will nearly double, from 9% to 16%. This is due to a sharp drop in the birth rate and an increase in life expectancy. In industrialized countries almost 30% of the population will be over age 60 by 2030. (Figure 1). The population of Indonesia is still very young compared with most OECD countries, but the proportion of people over 60 will increase from 7% to 16% over this period. Young workers today will retire in 2030 and this is the right time for Indonesia to start building a secure old age system for them.

Cross-sectional analysis shows that public spending on formal pension plans increases exponentially as populations age. In developing countries today only 1-3% of GDP is spent on old age security, but in many industrialized countries this figure now exceeds 10% and it will grow still higher in the years ahead (Figures 2 and 3). This growth occurs because there are more old people in industrialized countries and their income support is increasingly provided through mandatory public programs instead of through the family, which is the support system in developing countries. Public spending on health also increases sharply with population aging, because of the higher incidence of chronic disease, with expensive high tech treatments, among the elderly. Currently Indonesia spends less than 2% of its GDP on public old age and health programs, but if this relationship between demography and public spending continues to hold, Indonesia will be spending 11% of its GDP on public pension and health programs in 2030.

With such large sums involved, how this money is generated and spent can affect the entire economy. It influences the quantity and productivity of labor and capital and therefore the size of the GNP pie. For example, the promise of generous pensions may discourage saving and capital formation. High payroll taxes may discourage employment. Subsidized early retirement may reduce the supply of experienced labor. In contrast, old age programs that accumulate retirement funds in advance and allocate these funds to productive investment can increase productivity and growth. Pension systems that keep costs low help to keep employment high. Schemes that penalize early retirement may encourage workers to stay in the labor force longer and produce more. Increasingly aware of these broad effects, countries have been reforming their systems to have beneficial effects on the economy while providing a more secure old age income.

II. Problems in PAYG DB Systems

Most old age security systems established by governments in the past were financed by payroll taxes on a PAYG basis. This means that the contributions made by today's workers are used to pay the pensions of those who have already retired. The pensions were DB, according to a formula based on

the worker's earnings and years of service. For example, in a typical DB plan the retiree might get 1-2% of his wage for every year he worked and contributed. These systems brought financial security to many old people. However, it is now widely recognized that they also brought many problems. The problems were small when the systems were small and immature and populations were young, but they grew large and unmanageable as the systems grew and populations aged. In this section we summarize the problems in traditional PAYG DB systems. These problems concern sustainability, growth and equity. Indonesia has had a DB plan for its civil servants, but thus far has avoided these problems in its private sector plan, which has been a DC plan.

Cost determination in a PAYG DB system

PAYG DB systems are very sensitive to demographic change and system maturation. When populations are young and eligible retirees are few, costs are low and it is tempting for policy-makers to promise generous defined benefits to workers. But as populations age and many workers retire, it becomes very expensive to keep those promises. The following simple math of a PAYG DB system demonstrates these effects:

$$C = B/S = B*D, \text{ where}$$

C = the contribution rate (as a percentage of wages) required to balance the books in a given year,

B = the average benefit that is paid to retirees (as a percentage of average wage),

S = the support ratio (the number of workers per retiree) and

D = the dependency ratio (the number of retirees per worker).

For example, suppose the benefit is initially 50% of the average wage. When the support ratio is 10 to 1, this means that ten workers support the pension for each retiree. Each worker must pay a contribution that is 5% of his wage, to reach a total of 50%. But as the PAYG system matures and populations age, which is currently happening almost everywhere, the support ratio falls (dependency ratio rises) and the revenues are insufficient to pay the promised benefits. For example, if the support ratio falls to 4 to 1, (due to increased longevity, falling birthrates and early retirement), only 4 workers now support one retiree. Then, either the benefit rate must fall to 20% or the required contribution rate rises to 12.5%. These problems caused by demographic change are exacerbated by (1) DB formulae that set an early retirement age and encourage workers to retire even earlier (because their pensions are not actuarially adjusted downward by early retirement), (2) high evasion rates (once workers

qualify for a pension they manage to evade further contributions, thereby hurting the finances of the scheme) and (3) unexpected changes, such as people living longer than expected, that make the system more costly than expected. ^[1] For these reasons, many DB plans that started out funded quickly ran out of money and those that started out with low payroll tax rates now have high rates, often exceeding 25% of payroll. These systems are in crisis because the benefits can't be cut without intense political opposition, but they can't be paid without imposing unacceptable tax increases.

In Indonesia today the ratio of working age population to people over age 60 is 8/1 so this should enable a 50% replacement rate with a 6% contribution rate in a mature PAYG DB plan. However, the population in the social security system is older than average, because people in the formal sector have a longer life expectancy, and the retirement age is 55 rather than 60. These two factors would reduce the support ratio to 6/1. Moreover, the evasion rate is more than 50% (ILO 2003), reducing it further to less than 3/1. To achieve a 50% defined benefit in a mature PAYG system with a 3/1 support ratio requires a 17% contribution rate. By 2030, when the population has aged further, the support ratio would be approximately 1.5/1 and the required contribution rate would be 34% (Table 1). The government is already committed to paying these costs in the civil service—pensions will consume one-third of total payroll by 2030 if changes are not made. Policy-makers should think carefully before going down a road that will multiply their future problems.

The implicit pension debt

Another way of thinking about costs and sustainability is to measure the implicit pension debt that is built into a DB system. At the beginning, the pension payouts are small because few eligible workers have retired; this makes costs appear small. But the real cost of the system is the iceberg underneath the visible cash flow. It is the *implicit pension debt*—the present value of the defined benefit promises that have been made to current workers to get them to contribute. This debt is not written down or tradable like a bond, but it is a debt in the sense that politically most of it must be paid. It is an implicit or hidden debt. In every industrialized country this implicit pension debt exceeds the explicit debt (bonds). Usually it is more than 100% of GDP and in some cases more than 200% (Figure 4 and Table

2). Most countries would be horrified by an explicit debt that exceeds 100%. But these same countries have been unaware that they are building a much larger implicit debt. Future generations will have to pay off this debt through higher taxes, or default on it. In either case, the system as we know it today is not sustainable.

Growth

PAYG systems also have negative effects on economic growth: [\[2\]](#)

- As populations age, rising payroll taxes for pensions (exceeding 25% in many countries) will increase unemployment if borne by the employer or decrease net wages if passed on to workers;
- Early retirement on actuarially unfair terms (often below the age of 55 or 60) reduces the supply of experienced labor;
- National saving may be decreased by benefits given to the first generation of retirees and expected benefits may crowd out the voluntary saving of future generations;
- A large implicit pension debt accumulates and the need to pay off this debt may reduce the government's ability to provide other important public goods such as education, health services and infrastructure.

Indonesia is very dependent on its international competitiveness, which will be jeopardized by rising labor costs. Yet, the proposed reform seems to call for a payroll tax increase from the current rate of 13% to 20% in the new system. Most of this 7% increase will supposedly be paid by the employer, but in a competitive labor market much of it will be passed on to workers in the form of lower wages and lower wage increases. This will hold prices down and enable workers to retain their jobs. However, for workers who are near the minimum wage floor this payroll tax increase cannot be shifted. This group is likely to lose jobs as a result and the economy will lose the output they would have produced.

[\[3\]](#)

Equity

Finally, empirical evidence has cast doubt on the equity of many PAYG systems. Defined benefit plans often contain non-transparent redistributions that many would consider unfair if they were understood. For example, rich people gain at the expense of the poor since they live longer and collect benefits for more years. As another example, the pension often depends on wages during the last 1-3 years of the worker's career, which is usually the peak lifetime wage for high earners but well below the peak for low earners who often do manual work. And workers who retire early receive benefits that are subsidized by those who work longer. [\[4\]](#)

The biggest inequity in PAYG DB systems of virtually all countries stems from the payment of generous defined benefits to the first generation of workers who retired under these systems. These retirees contributed small amounts for only part of their working lives and received relatively generous benefits for their entire retirement. They took out of the system much more than they put in. The money paid to them prevented the build-up of funds in the accounts of younger workers, and left

countries with a large unfunded debt. This debt will have to be paid by today's young and middle-aged workers, who will get a low return on their social security contributions. If the initial generation of workers were very poor, while future generations were rich, this redistribution may have been desirable. But actually, many of the first workers to receive benefits were relatively high income, while many workers who will have to pay high payroll taxes today or tomorrow are relatively poor. This is potentially an even bigger issue in countries like Indonesia where the first generation of covered workers would consist of a small group—only 14% of the labor force—that is relatively well-off compared with the rest of the population. Indonesia is in a position to avoid this perverse subsidy by avoiding promises of defined benefits and by paying workers only what they have contributed plus investment earnings, unless an explicit transparent decision is made to favor a group by redistribution.

III. Problems with Centrally Managed Funds

In many PAYG DB plans a cash surplus temporarily accumulates in the early years of the scheme before it matures and many workers retire. These funds are publicly managed. In addition, some countries use provident funds, rather than PAYG DB, as the basis for their retirement plans. A provident fund is a centrally managed fund in which each worker has a DC account that accumulates his contributions plus investment earnings. This pattern is very common in post-colonial Africa, Southeast Asia, and, of course, Indonesia. Jamsostek and TASPEN run provident funds. The chief problems with centrally managed funds are their low rates of return, uniform investment portfolios for all members, poor allocation of capital and possible growth of implicit obligations for the public treasury. These problems occur in funds that are managed directly by government as well as those that are governed by a tripartite Board that supposedly represents worker and employer interests. The problems basically stem from political manipulation of funds that are mandatory and monopolistic.

Low rates of return

Empirical data show that publicly managed pension reserves around the world typically earn low returns, far below the bank deposit rate or the growth of per capita income (Figures 5 and 6). This is largely because public managers have been required to invest in government bonds, loans to failing state enterprises or other politically motivated investments that pay low rates of return (Iglesias and Palacios 2000). Often the rates of return on these investments are lower than the rate of inflation, so the investments actually lose money and the accumulation goes

down in real value when inflation occurs. For example, investment returns by Jamsostek between 1978 and 2000 were 38% below the rate of inflation and 63% below the bank deposit rate (ILO 2003). Taspen, likewise, has lost real value on workers' retirement savings.

In general, to produce a reasonable replacement rate of 40-50% with a contribution rate less than 10%, it is necessary for the retirement fund to earn 2-3% more per year than the rate of wage growth. That should be quite feasible and consistent with a modest amount of risk, given the marginal productivity of capital in most countries. However, practically no provident fund has earned a rate of return that exceeds the rate of wage growth over the long run. In Singapore, for example, the rate of return paid to members has been less than 2% real, far less than the rate of wage growth, and workers have been retiring with very small pensions relative to their wages after many years of high contributions. Since the Central Provident Fund turns its money over to the Singapore government to invest and the government does not report its portfolio or rate of return, we don't know whether this low rate paid to members reflects the true return earned on the funds. In general, when the government is the sole investor of money in the fund and workers are required to contribute, the fund has little incentive to invest efficiently or to pass its entire return on to members.

Uniform investment portfolios that don't take account of worker preferences

If a fund is invested efficiently, the return it gets depends on the risk accepted in its portfolio. An investor who wants a higher return must accept riskier investments. Provident funds typically have only one investment portfolio, in which every affiliate partakes. This means that the managers of the fund must decide how much risk to accept, and workers who want more or less have no choice in the matter. But in the real world, different workers have different preferences, and could be made better off if they had some choice.^[5] Practically no provident fund has given workers options among different portfolios. There are simply no competitive pressures forcing them to accommodate worker tastes.

Inefficient allocation of capital

Apart from their low and uniform financial returns, the projects financed by centrally managed funds are often unproductive so the economy does not benefit. That is, the funds are allocated according to political rather than economic criteria, which means they do not lead to higher productivity and output. For example they may be used to bail out state enterprises that will eventually fail or to build roads in a congressman's district so he will get re-elected. Additionally, the availability of pension funds to which they have exclusive access at low interest rates may lead governments to run larger deficits or to spend more wastefully than they would if they had to rely on a more accountable source of funds in the marketplace. In that case, the provident fund has not increased total national saving available for productive investment—which is especially needed in developing countries like Indonesia.

Development of implicit debt

If the centrally managed funds are backing a DB promise, the public treasury will be left with that obligation even though the funds have been dissipated through poor investments. Since the existence of a temporary cash surplus at the beginning may lead government to increase the defined benefits, it may be preferable for DB pensions to be purely PAYG from the start to avoid overly-generous promises.

If the funds are backing DC accounts in a provident fund, government technically avoids the pension debt stemming from a benefit promise; but it may be under strong political pressure to provide a reasonable return when workers retire. This extra return would have to come from the public treasury. In this sense, poorly run centrally managed funds may incur an implicit pension debt, even if these funds started out, in theory, DC and fully funded. A desire to avoid responsibility for the low rates of return and consequently low replacement rates that DC accounts have earned in Singapore may be one reason why the government has recently decided to allow its members to take some of their money out of the Central Provident Fund into approved accounts with private investment managers, making it more decentralized than it was before.

Provident funds in Indonesia

These problems should all sound familiar to Indonesians because the two provident funds in this country—Jamsostek for private sector workers and Taspen for civil servants—face similar problems. Numerous reports have documented their low returns—indeed, the funds lost money prior to 2000 and since then have earned returns that are much lower than those of private pension plans (Rachmatarwata 2004). Other problems include high administrative expenses, poor record-keeping and disclosure practices and low rates of compliance. As described above, these problems are not unique to Indonesia. They occur in most places where a centralized authority exerts monopolistic control over mandatory contributions. There is little incentive for efficiency management and investment, and much incentive and opportunity for self-interested behavior and political manipulation. Unless these problems are solved it is unwise for government to plan on building a fund to finance its future DB or even to mandate a contribution to funded DC plan. We proceed now to discuss how other countries have tried to move toward a better system.

IV. How Have Countries Reformed?

During the past decade, with the pace accelerating during the past five years, over thirty countries from Latin America, Europe and more recently the Asian-Pacific region, have adopted a multi-pillar system designed to avoid or reverse the problems just outlined (figures 8, 9 and 10, Table 3). The number of reforming countries accelerated during the 1990's and early 2000's, and is likely to increase further, as a domino effect has spread throughout Eastern and Central Europe and the former

Soviet Union. The Asian-Pacific region is the latest to reform, with Australia and Hong Kong already in place, India about to begin and Singapore allowing workers to take part of the savings out of the Central Provident Fund into a wider range of fund managers. Practically no countries are starting new PAYG DB plans, after seeing the problems they have created for the first starters. [\[6\]](#)

The most important feature of multi-pillar plans is the basic structure (Figure 10):

- One scheme or pillar handles peoples' retirement saving—it is DC rather than DB, fully funded, with funds managed in the competitive market, regulated by government;
- A separate arrangement or pillar is responsible for poverty-prevention, through a transparent redistribution of public funds.
- A third pillar exists for additional voluntary retirement saving.

The reforming countries also exhibit important differences, chief among them being:

- the question of who chooses the investment managers in the private pillar and
 - the nature and size of the public pillar.

While most of these reformed systems are still too new to evaluate, the 22-year experience of Chile is encouraging. Its new system has accumulated large assets to match its liabilities, average annual real returns on investments have exceeded 10%, evasion appears low, the formal labor sector is growing relative to the informal, long term saving has increased, financial markets developed and the poor are protected, as a result of the reform. Consequently, the new pension system has been credited with making a major contribution to the high rate of growth in Chile over the last 20 years. [\[7\]](#)

Key characteristics of the funded DC pillar

The most important characteristics of this pillar are: it is mandatory; it links benefits actuarially to contributions through a defined contribution (DC) plan; it is fully funded; and privately competitively managed. Contribution rates vary widely, but range between 7 and 12% of payroll in most countries.

Why mandatory? The basic rationale for mandatory public old age programs is myopia and moral hazard--a significant number of people may be shortsighted, may not save enough for their old age on a voluntary basis, and may become a burden on society at large when they grow old.

Why defined contribution (DC)? In contrast to DB plans described above, DC plans avoid the risk of underestimating costs and promising benefits that will turn out to be unaffordable, the likelihood that mortality and fertility have been overestimated and benefits will continued for many years more than expected, and inequities stemming from DB formulae that inadvertently give rich workers a higher rate of return than poor workers.

Also important is the impact on early retirement and evasion. In a funded DC plan, those who retire early get a smaller annual pension because they will be collecting it for more years, rather than gaining larger lifetime payouts as they do in DB plans that typically do not penalize early retirement. For those who work longer in DC plans, pensions are automatically larger. For this reason, DC plans

are likely to encourage people to retire at a later age--without a legislative decision that is often difficult for politicians to make.^[8] This increases the nation's labor force and productive capacity and it enables old age security to be provided at a lower cost than would obtain in DB plans with early retirement.

Similarly, evasion and escape to the informal sector are big problems in many countries, including Indonesia. In DC plans this may be discouraged because workers get back their contributions plus investment earnings—providing the investment earnings are expected to be high. When evasion or early retirement do occur, those who evade contributions or work bear the cost in the form of lower pensions, rather than passing the cost on to others and undermining the financial viability of the system, as often occurs in DB schemes.

Why fully funded? Pre-funding means that funds gradually accumulate over the workers' lifetime to cover his pension, so it prevents the build-up of a large implicit pension debt that will cause grief later on when someone has to pay, if it is unfunded. Second, it avoids steep payroll tax increases that are needed in a PAYG system as the dependency rate increases due to population aging. Countries like China and Japan are facing huge potential tax increases in their unfunded systems, because of a rapidly aging population. Indonesia is many years behind these countries, but the same thing will happen here over the next three decades. Third, pre-funding prevents large intergenerational transfers from young people to older workers.

Fourth, pre-funding may be used to help build national saving, especially saving that is committed for the long term. Saving, in turn, facilitates capital accumulation, which increases the size of the GDP pie that will later be available for people to consume. Domestic saving makes countries like Indonesia less dependent on in-flows of foreign capital. Moreover, empirical analysis suggests that saving that is committed for the long term, as is the case for retirement savings, is especially productive (Musalem and Catalan 1999). Thus, saving can be an important ingredient of a long run strategy for increasing productivity and output, enabling the standard of living to grow even when the ratio of retirees to workers increases. (This, of course, happens only when retirement saving is invested productively and does not increase public deficits.)^[9]

Why privately managed? This maximizes the likelihood that economic rather than political objectives will determine the investment strategy, thereby producing the best allocation of capital and the highest return on savings. It also reduces the concentration of power over resources, which is important in a democracy.

Publicly managed funds are likely to invest heavily in government bonds and to encourage the government to issue more bonds, which will cancel out the positive effect on national saving from pre-funding. Competitively managed funded pension plans, in contrast, are more likely to be invested in a mixture of public and corporate bonds, equities and real estate, thereby earning a higher rate of return (Figure 7). They reap the benefits of investment diversification, which enables them to reduce risk while increasing yield. They spur financial market development, by creating a demand for new financial instruments and institutions, especially important in middle-income countries. In Chile the new social security system has made financial markets more liquid as the number of traded shares on

the stock market and their turnover increased; has created demand for the equities of newly privatized state enterprises; has encouraged the emergence of information disclosure and credit-rating institutions; has expanded the variety of financial instruments (including indexed annuities, mortgages and corporate bonds); and has improved asset pricing. These developments have played a particularly important role in explaining Chile's rapid growth rate during the twenty-two years that have elapsed since it started its multi-pillar system. [\[10\]](#)

Pension funds can gain from resort to international investment, which offers the opportunity to diversify across countries as well as securities. This is always political sensitive, but always economically desirable. It reduces risk while increasing yield. Risk diversification is especially important given the long time periods involved. It is particularly valuable in countries like Indonesia that have limited financial instruments available domestically. In Indonesia, investors must choose between bank deposits and government bonds, which pay low returns, and the stock market, which is very volatile. International diversification opens up the possibility of investing in less volatile, more efficient stock markets abroad, and also hedging against unforeseen economic crises that may hit Indonesia in the future. Although private pension funds generally invest most of their portfolios domestically, they are likely to engage in some international diversification, if this is permitted by regulators.

The importance of a high rate of return. Figures 5-7 show that privately managed pension funds earn higher rates of return than public funds, because their investments are likely to be determined by economic rather than political criteria. This, in turn, means that workers get a higher pension from a DC plan that is competitively managed. To see how powerful is the effect stemming from a higher return, Table 4 shows the replacement rate of final earnings that would be obtained from a 7% contribution to a DC plan under different assumptions about the rate of return and retirement age. In each case, we assume that the real wage for the individual increases at 3% annually and the expected age of death is 75. [\[11\]](#) We show the results for a 2% real return, which is very low but more than Jamsostek been earning, and for a 5% real return, which is approximately what you could earn if

50% of the portfolio were invested in equities, including equities abroad. We also show the effect of retirement age and evasion.

If wages rise faster than the rate of return (as in column 1), the stock of retirement savings is not keeping pace with wages, so the pension it can finance at the end will be small relative to final year's salary. In general, to achieve a reasonable pension (40-50% of final wage), the rate of return should be 2-3% higher than the rate of wage growth (column 2). In Indonesia, where real wages should grow at 3% if good policies are followed, this requires a real return on investments of 5% or more. Thus, pensions double if the rate of return increases from 2% to 5% (and they more than double if the retirement age increases from 55 to 65). If a worker contributes 7% of his wage every year, gets a 5% return and retires at age 65, his accumulation will be large enough to finance a pension that is almost two-thirds of his final wage—every month for the rest of his life. This is much better than he currently gets from Jamsostek—a one-time lump sum payment of a few month's salary. None of the public pension funds included in Figures 5 or 6 have achieved a 5% real return, but private pension sectors have done so in many countries included in Figure 7.

Key difference among private pillars

The most important difference among countries regarding the funded pillar is in the arrangements they make for choosing investment managers. Three different patterns have emerged: the Latin American model, where individual workers choose the investment manager in the retail market; the group model found in many OECD countries, where employer and/or union representatives choose the manager for an entire company or industry; and the institutional model, now being explored in Bolivia, Kosovo and Sweden, where small contributions are aggregated into large money blocs and fees are negotiated centrally. Newly reforming countries face a tension between using the retail market to maximize individual choice, versus group or institutional arrangements to keep administrative and marketing costs low.

The Latin American model (the retail market) was pioneered by Chile in 1981 and, bolstered by its initial success, was closely followed by Argentina, Peru, Colombia, Mexico, Uruguay, Bolivia and El Salvador, in the 1990's. It was also adopted by Eastern European countries such as Hungary and Poland, and by Kazakhstan in the former Soviet Union. (Even Singapore is using this model by allowing workers to opt out of its Central Provident fund into private retail investment managers chosen from an approved list).

In the Latin American model, many investment managers enter the industry and try to attract individual worker-savers. Each worker chooses the investment manager for his or her own individual retirement account, in the retail market. The biggest criticism of this approach concerns the administrative and marketing

expenses of the pension funds, which are 1-1.5% of assets per years, which reduces the final pension by 20-30%. This cost is much less than the 2% per year that Jamsostek charges, but it is higher than some pension analysts believe is necessary or desirable in a mandatory scheme. The other models described below are designed to cut these costs.

Pension funds in Latin America have faced heavy regulations over their investment strategy. These regulations have led all investment managers to offer the same portfolios, so workers have had little choice over risk-return trade-offs. Policy-makers justified this on grounds that workers had little financial market experience and would be unable to make wise choices. But after 20 years of experience with the new system, in 2002 Chile changed these rules to enable greater worker control. Pension funds are now encouraged to offer multiple portfolios, with different proportions of stocks versus bonds and international diversification, among which workers can choose. This should make the system more efficient, as it can better accommodate diverse preferences regarding risk-return trade-offs. Other countries with this system will probably follow suit. This is relevant to Indonesia, where most workers also have had little financial experience. It suggests that a system can start with limited choice but can gradually expand this choice.

The OECD model (the group market), by contrast, was built on the widespread existing employer-sponsored pension plans in industrial countries, which became the foundation for the funded pillar. Historically, many companies and occupations had offered pension plans on a voluntary basis, sometimes as a result of collective bargaining. These plans simply became mandatory instead of voluntary, either through legislation or governmental suasion. Although Switzerland was the first country to move in this direction, Australia, Denmark and the Netherlands have done so as well. Hong Kong, the first Asian location to adopt a mandatory privately managed DC plan, uses the OECD model.

In this model the employer or a combination of employer and union representatives choose the investment manager for the entire company or the occupational group as a whole. This enables them to benefit from economies of scale and financial expertise. They face lower administrative and marketing expenses than the Latin American model, because of the group contract. However, in DC plans it introduces the principal-agent problem--the investment manager that is best for the employer may not be best for his workers. Also, workers may prefer a different investment portfolio from that selected by the employer. Since workers bear the risk of the portfolio and their pensions depend on the returns in a DC plan, they are likely to demand more individual choice in OECD countries. As a result, the UK allows employers to opt out of the state plan by providing a better alternative and it also allows individual workers to opt out into their own personal accounts. In Australia and Hong Kong employers choose the investment manager, but the manager is expected to offer multiple portfolios to the workers.

The “institutional” model. The institutional model attempts to reduce costs and fees still further. Large institutional investors in many countries (company pension funds, foundations, endowments) face much lower fees than those in the retail market—because of scale economies, lower marketing

expenses, and greater bargaining power. The reformed systems in Bolivia, Sweden and Kosovo, as well as a new civil service plan in India, attempt to use or mimic the institutional market to achieve lower costs and fees in their mandatory systems by aggregating numerous small accounts into large money blocs and negotiating a group rate.

In Bolivia, an international competitive auction process was used to select two pension funds to run its mandatory private pillar. Although initially assigned, workers are now given the choice between them. This competitive bidding process has resulted in much lower costs relative to assets and affiliates in Bolivia than in other Latin American countries. In Sweden, the pension authorities established a maximum fee schedule that asset managers could use for the retirement accounts, which was supposed to approximate the fees they would have charged much larger investors. Workers are permitted to choose among many mutual funds that entered the market, but the money is moved in large blocs, records are kept centrally, and funds do not even know the names of their affiliates—an attempt to avoid sales commissions. The allowable fees are much lower than those charged in Latin America or Eastern European pension funds.

A new retirement scheme was established in 2002 in Kosovo to replace the old Yugoslav pension plan that workers had been in previously. The scheme consists of a flat basic benefit at the subsistence level for all Kosovars 65 or older, and a 10% contribution to a DC plan. The DC plan is governed by 6 trustees, 4 of whom must be international experts, selected by the UN authorities in Kosovo. As in Bolivia, the investment managers are chosen in a competitive bidding process. All investments are out of the country, in a passively managed global portfolio. Costs are much lower than those in Latin American countries during their start-up phase. Currently workers do not have a choice of investment strategy, but it is intended that multiple portfolios and choice will be introduced in the near future. India is now planning to start a new DC plan for incoming civil servants. They will be given a choice among a small number of investment managers who are selected in a competitive bidding process, again to keep fees low. Current civil servants are “grandfathered” into the existing system, to make it politically acceptable. Similarly, the Thrift Saving Plan, a retirement plan for U.S. federal employees, uses a competitive bidding process to choose its money managers. Workers are given 5 investment options, all of which use passive investing to keep costs low. Costs range between .1% and .3% of assets.

The downside of this “institutional market” approach is that investment options are usually restricted and adaptability to unforeseen events is dampened. The chief advantage is much lower costs, allowing a substantial increase in net rates of return and pensions, if the process is well-handled. This is particularly important during the early years of a new funded plan, in a low-income country, when average account size is small and high administrative costs could easily consume much of the investment return. [\[12\]](#)

This model might work in Indonesia, perhaps starting with the civil service. The investment function

could be carried out by a small group of joint venture investment companies chosen in an international competitive bidding process, based on their experience, performance and fees. Contributions would be collected centrally but quickly allocated to these companies. Each company would offer a different mix of bank deposits, bonds, equities and international securities. Worker-affiliates could then choose amongst those portfolios and investment managers. The managers would each have a benchmark based on their specified portfolios and their performance relative to that benchmark would be monitored regularly. Jamsostek and Taspen could compete with these companies for worker-affiliates. Employers who offer DC plans might be permitted to continue to do so as a substitute, providing their asset managers meet stringent criteria. This would likely provide better returns and lower costs than Jamsostek and Taspen do currently, could improve their performance and might encourage a higher compliance rate among workers and employers.

How to handle the payout stage

Most of these reforming countries are only now beginning to think about the payout stage. Obviously this is important as the object of retirement saving is eventually to pay it out as pensions. The chief commonality across countries in their new DC plans is that lump sum withdrawals are generally not permitted. Periodic income flows are the object, as in DB plans. The differences concern whether annuitization is required, providing longevity insurance, and whether the public or private sector plays the major role.

In Sweden all payouts are handled by the public sector in the form of annuities. That is, upon retirement the worker turns his savings over to the government, which converts it into an annuity. In most other countries, payouts will be handled by the private sector. Switzerland strongly encourages annuitization by mandating a favorable conversion rate. The UK requires annuitization by age 75. In Chile retirees are given a choice between taking their money out in the form of gradual withdrawals versus buying an annuity from an insurance company. Two-thirds choose to annuitize. My work on the annuities industry in Chile and other countries indicates that these markets are quite competitive and they pay annuitants a rate of return that is roughly equivalent to the government bond rate, while also providing insurance against above-average longevity or falling interest rates (James, Song and Vittas 2001; James and Sane 2003; James, Martinez and Iglesias 2004a and b).

Given the long-term nature of the annuity obligation, it is important that only financially strong insurance companies handle annuities. However, in low-income countries few reliable insurance companies exist and they might charge high administrative fees and risk premia, given the small size accounts and great uncertainty regarding mortality rates. One possible solution would be to use an international competitive bidding process for the payout stage, just as some countries do for the accumulation stage. The right to provide annuities to cohorts retiring in the next 3-5 years might be auctioned off to one or two insurance companies, making it more attractive for reputable insurance companies to participate at low cost. This method has been used with considerable success by the

Thrift Saving Plan for federal government employees in the US and it might be appropriate for Indonesia.

A basic concern in countries like Indonesia is that life expectancy of the covered population is very uncertain. Often, population statistics are inaccurate and out-dated in such countries. The small proportion of workers covered by the social security system comes from a higher income group and is likely to have much greater life expectancy than the population at large. Moreover, life expectancy will grow rapidly over the next two decades, as countries like Indonesia adopt the medical technologies of wealthier countries. The resulting uncertainty about the life span of retiring workers means that someone has to bear the risk that people will live longer than expected. Insurance companies will charge if they bear that risk and taxpayers will have to pay if government bears the risk. This suggests that, whether a DB or DC plan is chosen, Indonesia should place a high priority on collecting better information about life expectancy, especially life expectancy of covered workers. Until better information is gathered, fixed term annuities or phased withdrawals rather than life annuities might be utilized in DC plans.

Can centrally managed funded plans work? New experiments

Many countries with young populations have accumulated reserves in their publicly managed DB plans and, as described above, the returns have been low, capital has been misallocated to low productivity investments for political reasons, government debt rose, benefits were increased beyond sustainable amounts because reserves were available, and in the end the schemes became or seem destined to become PAYG. Recently Canada, Ireland and New Zealand have adopted arrangements that attempt to avoid these problems. In each case they decided to pre-fund part of their future DB obligations, but they also established stringent rules to insulate the funds from political interference. It is instructive to see the measures that they felt were necessary. In all three countries “socially targeted investments” were explicitly rejected and the sole object of the fund was specified as maximizing returns subject to a prudent level of risk. Ireland went further and ruled out all investments in public bonds, to avoid the temptation of increasing government’s deficit finance. International investment was permitted in all cases, and most heavily used in Ireland and New Zealand. This helps to diversify risks, prevents the build-up of inflationary pressures in local markets, and reduces the danger of excess government borrowing. Most of the equity portfolio is passively managed, which means it simply replicates a particular stock market index. Passive investment has been shown to be cost-effective, it minimizes the opportunity for politically-motivated discretionary choices, and it provides a specified benchmark against which fund performance can be checked. The Governing Board for each fund was chosen on the basis of its professional expertise, not primarily to represent workers or employers; “tripartite councils” were ruled out. Strict reporting and disclosure rules apply.

These investment safeguards are quite stringent; yet, it remains to be seen whether they will succeed in insulating centrally managed funds from political manipulation. Until we have evidence that they

work better than previous centralized funds, it is probably safer for most countries to rely on competition in the private market. [\[13\]](#)

V. The Public Pillar—and what to do about the informal sector

If a DC plan is the mainstay of the pension system, this leaves retirees exposed to the risk of low investment returns or low lifetime earnings. A safety net is needed to back up this pension to keep them above the poverty line. The public pillar has this function. It is publicly managed, usually PAYG, but smaller and more focused on redistribution than traditional PAYG DB plans. It has two main functions: it diversifies income sources for contributors and it redistributes to those with low lifetime earnings.

As with the private pillar, once we get below this broad objective, many differences across countries emerge concerning how they structure their public pillars. In some cases the redistributive function dominates and benefits flow only to low earners, while in other cases the diversification function dominates and all contributors get some public benefit. Source of funding is payroll-based contributions in some cases, general revenues in others. The nature of the benefit also varies—from minimum pension guarantee, to means-tested benefits, flat demogrant, and sometimes, to an earnings-related defined benefit or notional DC plan.

The most salient difference is whether the safety net covers only members of the contributory scheme, or whether it also covers old people more generally. In the former case, many women and informal sector workers, who have not fully participated in the labor market, are left out. This is important because women live longer than men, hence constitute the vast majority of very old people. And in developing countries only a small minority of people—10% of the working age population in Indonesia, generally the better off groups—are covered by formal sector pension plans, while the poorest, who need the safety net the most, are excluded. Countries like Indonesia must decide whether they wish to cover people in the informal sector and, if so, how?

Minimum pension guarantee

In many Latin American countries (for example Chile and El Salvador) and elsewhere (for example, Kazakhstan) the safety net consists simply of a minimum pension guarantee (MPG). This is a promise that the government will top up the pension from the individual's retirement savings account if it fails to provide an annuity that is at least 25% of the average wage. Usually 20-25 years of contributions are required to be eligible. This is a very low cost public pillar, since only a minority of workers who contribute for 20-25 years will have an own-pension that falls below the MPG floor. It is also well targeted, since these will tend to be the lowest earning workers; women are likely to be the major recipients (James, Edwards and Wong 2003). However, it does set up some perverse incentives and equity issues. Workers whose pension is near the MPG have an incentive to stop contributing as soon as they reach the 20-year eligibility point, because any further contributions simply displace the government subsidy; there is no incremental benefit to them. Also, eligible workers have an incentive to withdraw their savings as quickly as possible after retirement, because when they run out of money the MPG subsidy will take over. Simulations for Chile indicate that this guarantee will cost the

government (that is, taxpayers) substantially more than was initially anticipated, because of such strategic behavior (James, Martinez and Iglesias 2004a and b).

A more basic problem is that the MPG is available only to workers who are in the contributory scheme, since the eligibility criteria are tied to the pension accumulated there. If it is financed by the public treasury—as it is in Latin America—this means that a large group of relatively poor outsiders is financing an income floor for the better-off insiders. Countries that use the MPG for those inside the contributory system must find some other solution to the question: how is poverty to be avoided for the majority of old people who are outside? In Chile, the MPG for contributors is supplemented by a social assistance scheme for the poorest old people who are not covered by the formal scheme.

Means- and asset-tested benefits

Australia and Hong Kong offer a public benefit for which all old people are eligible to apply; in that sense it is universal, not simply for members of a contributory plan. It is income-tested and asset-tested. A means-tested benefit is similar to the MPG but takes all income and assets into account for eligibility. In Australia 70% of all old people qualify for some benefit; only the richest 30% are ruled out. In Hong Kong the qualification rate is lower at first, but after age 70 it becomes a flat benefit and the take-up rate becomes 70%. In both cases, the means-tested program for the elderly is integrated with means-tested programs for the general population, the main difference being the presumption that a young person can work productively while an old person can't, so there is less concern with work incentives in the old age program.

South Africa, too, has a broad-based means-tested benefit that the vast majority of rural blacks receive. The pension is so generous that it makes many of them better off after retirement than they were before. Practically no social assistance is available for other age groups, but many young families benefit because they have an old person living with them (Schwarz 2003). In fact, the pension may encourage family support because the older person becomes an asset rather than a liability. However, since some young families do not have an elderly relative living with them, the old age benefit to some extent comes at the expense of other potential programs that would benefit them, such as assisting poor families with children.

Means-tested programs are attractive because all residents are eligible, including informal sector workers. In that sense, they seem to be ideally suited to redistributing to the poor. However, upon closer examination serious problems appear. For example, recipients of pensions are less likely to qualify for the means-tested benefits, so such plans may create a disincentive for low earners to work in the formal sector. They may also discourage personal saving, if assets count in the calculation. They incur high administrative costs because the full income and assets of all applicants must be evaluated, thereby placing a large demand on the government's administrative capacity. They are susceptible to corruption, which is widespread in poor countries. Moreover, substantial mistargeting is unavoidable. A 50% mistargeting rate has been estimated for Indonesia's rice program (Papenek 2004). [\[14\]](#)

A study of India's social assistance scheme for the old who are destitute showed that few people understand the eligibility criteria, successful applications took 1-2 years to be processed, delivery of the benefit was often delayed or skipped and some beneficiaries were unaccountably "declared dead"

after a few years. Bribes amounting to 2-3 months' worth of benefits were necessary to get approved, additional bribes were necessary to get the benefit delivered and 6 months worth of benefits had to be kept in the recipient's bank account, where the money was delivered. Thus, recipients got only one-quarter of their first year's benefits—and less in cases where some payments had been skipped (HelpAge India 2003). If half the total expenditures go to the wrong people and a quarter of the remaining amount is spent in bribery, then only 37.5% has reached the intended recipients. If transactions costs are a 25% overhead on total benefits, then it is costing 125% of total benefit expenditures in order to get 37.5% to the targeted group. This does not appear to be an effective targeting mechanism.

Means-testing is particularly difficult to implement in a context where most old people live with their extended families, as in Indonesia. In studies of rural India and Nepal, over 80% of all elderly lived with their children and fewer than 5% lived alone (Pal 2004, Rajan and Kumar 2003, Palacios and Rajan 2004). Does one take account of the individual's personal resources or the total family resources in determining eligibility? If the former, it is possible that an old person who is living comfortably with her affluent children will get a means-tested pension, which seems anomalous. But if the latter, some families may be reluctant to take in an elderly parent, because she will then lose her subsidy; and some old people may lose their subsidy even though they get little help from the families with which they live.

Because of these disincentive effects, the high transactions costs they impose, the large demands they make on administrative capacity, their susceptibility to corruption and the difficulty in applying the means-test to extended family situations, means-testing is probably not a desirable form of safety net for the elderly in Indonesia.

Flat benefits (demogrants for the elderly)

OECD countries such as the Netherlands, Denmark and New Zealand pay a flat benefit, uniform for every old person who resides in the country.^[15] Mauritius, Namibia and Botswana offer more modest universal flat benefits. In Kosovo every person over the age of 65 gets a basic benefit that is pegged to the cost of a subsistence food basket. In most of these countries the universal flat benefits are financed out of general revenues.

Nepal presents an interesting example of a flat old age pension in a poor country. In Nepal a modest flat pension of 150 rupees monthly is paid to all Nepalese 75 years or older, a group that currently constitutes only 2% of the total population. The benefit is equal to 10% of per capita income or 2.5 days' wages of an agricultural laborer, and could purchase 10 kilograms of rice. Three-quarters of the eligible population receive it. It is redistributive since it is financed from general revenues, for which the rich pay more than the poor. Because the benefit is very small, some wealthy individuals do not even bother to apply for it, which makes it even more targeted as a result of self-selection. The fact that it is simple and non-discretionary means that transactions and bribery costs are small. The small size, high eligibility age, lack of indexation and tiny percentage of very old people in the population keep aggregate costs low—only .35% of total government spending and less than .1% of GDP (Palacios and Rajan 2004). If benefit levels were doubled, price-indexed and the eligibility age

reduced to 70, costs would quadruple but they would still remain less than 1% of GDP per year over the next 40 years. These costs are obviously sensitive to the proportion of old people in the population, which is very low in Nepal.

In Indonesia, people over age 70 constitute 2.5% of the population. Then, if a flat benefit equal to 20% of per capita income (120,000 rupiahs monthly) were paid to all people over age 70, and if the take-up rate were 75% as in Nepal, the total cost of the program would be less than half of one percent of GDP annually.

Flat versus means-tested benefits in developing and industrialized countries

In general, flat benefits are more expensive than an MPG or means-tested benefits because more people receive them. This is their major disadvantage. But they also have some big advantages. They are much easier and cheaper to administer—everyone qualifies, on the basis simply of birth date and residence. They are therefore less susceptible to mistargeting and bribery, while means-tested benefits potentially expand the culture of bribery. Flat benefits don't discourage saving and contributions, as means-tested plans do for people close to the threshold. Even though everyone gets them, they are redistributive to low earners if financed by a tax that is positively related to income or consumption. In some cases they are made more redistributive by self-selection among rich individuals or by clawing back part of the flat benefit through the income tax system. Furthermore, practically all expenditures reach beneficiaries for the flat, while less than a third of all expenditures can be projected to reach the intended beneficiaries for means-tested benefits in many developing countries. These factors make the flat benefit relatively more desirable in these countries as a form of old age support.

In contrast, industrialized countries have less corruption and greater capacity to administer means-tests accurately and cost-effectively. Moreover, the number of potential recipients of a flat benefit has surged, due to population aging. And data analyses show that households with elderly members have relatively high incomes. As a result, many industrialized countries that had generous flat benefits 20 years ago are now downsizing them and shifting toward greater reliance on means-tested benefits in order to economize on costs as the number of retirees increases. For example, in the UK the basic benefit has been indexed to prices while wages rise with prices plus productivity, so the flat pension is now only 15% of the average wage and falling every year in relative terms. At the same time, means-tested benefits are playing a larger role, filling in the income gaps for the poorest.

Countries that are considering this choice for their public pillars need to make a careful calculation of costs and benefits, with a realistic assessment of their capacity to administer a means-test accurately, cost effectively and free of corruption versus their ability to finance a small flat benefit out of the

government's budget. They also need to investigate whether households with elderly members are relatively low or high-income households. If the latter, the case for public subsidy is weakened. The "old old" are more likely to be low income than the "young old" so the case for flat benefits to the old is stronger. However, countries also need to weigh these needs against other budgetary needs and constraints. If Indonesia finds that households with very old members are relatively poor, and wishes to extend income support to these families, a flat benefit for the very old might be the best way to do it. But allocating this money to improve health services may be a better use for these funds, both for the old and the young.

Earnings-related public benefits

In contrast to the MPG, means-tested or flat benefits just discussed, Hungary, Poland and most other countries of Eastern and Central Europe use a public benefit that rises with earnings. Given the fact that high earners tend to live longer than low earners, it is important for earnings-related benefit formulae to take this into account by offering lower replacement rates per month to high earners, who will likely receive these payments for more months. The DB formulae in the US, Switzerland and Costa Rica do this, but those in Eastern and Central Europe do not. ^[16] Their main objective is to diversify income sources and thereby minimize risk, not to redistribute. Monthly replacement rates that fall for high earners have sometimes been mistaken for redistribution, but actually they can simply be a recognition of the longer life expectancy of high earners and the perverse redistribution that will take place if this is not recognized. This is an important point in Indonesia as it considers the possibility of adopting a DB scheme. Given the vast income differences in Indonesia, these are almost certain to be accompanied by large mortality differences related to socio-economic status. A well-designed DB scheme will take these into account, by using a benefit formula that reduces the replacement rates for high earners.

The main reason countries in Eastern and Central Europe kept an earnings-related PAYG benefit is that they already had one under the old Communist regime and had accumulated a large pension debt, which they were unable to pay off completely. Yet change was obviously essential. As a result of early retirement, evasion and overly-generous benefit promises, payroll taxes were already over 30% and would have had to go still higher—which would have been devastating to real wages and economic growth. To keep fiscal costs manageable and to make way for the more sustainable DC funded pillar, these countries greatly downsized their public benefits—a painful but necessary process. Their experience underscores the ways a PAYG DB plan can escalate in costs beyond initial expectations—it is much easier to stop this process before it begins.

Should the public pillar be universal or part of the contributory scheme?

In sum, some safety net is provided in virtually all the reforming countries, but the nature and level of the protection provided and the source of financing varies widely. A major dividing line exists between countries that link the public benefit to employment and contributions, versus those that consider it a universal, residence-based safety net. In industrialized countries most men work in the formal sector, while many women have substantial periods out of the labor force, so this dividing line mainly affects women. In the past, most women received spousal or widow's benefits. This worked well at a time when practically all women married, but less well in today's world, where many women do not marry and those who do marry are very likely to divorce. Attention is now being given on how to best cover this group. In developing countries this dividing line affects many men as well as women, who work in the informal sector.

An MPG is, by definition, only for those inside the system and may encourage low earners to join the system by contributing. An earnings-related public benefit is, also, by definition, part of the employment-based contributory plan. Both of these leave a big gap in coverage for those outside the system, unless they are protected by a social assistance scheme, as in Chile. In contrast, flat or means-tested public benefits usually are universal, not tied to employment, and thereby provide income security to all old people. But, since much of the taxes that finance it are paid by people who work, this type of benefit redistributes from workers to non-workers and may discourage formal sector employment. All countries face this trade-off and must decide which they want most—an income floor for all or incentives to work and contribute, which end up benefiting a smaller group. This is a crucial choice in developing countries like Indonesia, where the majority of the population works in the informal sector and would not be covered by an employment-related scheme, but a scheme that covers everyone will require tax revenues that are scarce and create distortions of their own.

Some points that Indonesia might keep in mind in making this choice:

1. A public benefit should eventually be included in the mandatory scheme, both to diversify income sources and to redistribute to low earners, but this need not happen immediately, given that covered workers tend to be better-off workers.
2. If such a benefit reaches only contributors, it should be financed by contributions, not by the general treasury, to avoid perverse redistributions from those outside the system to those inside. This means that a DB plan should be approached with the greatest caution, since the ultimate responsibility in a DB plan is likely to be borne by the general treasury.
3. If an MPG is used within the contributory scheme, it should be carefully costed out in advance,

to ensure that most eligible workers will have own-pensions that exceed the MPG level and that the MPG subsidy will be fully covered by special contributions levied for this purpose.

4. If income support is provided for the elderly in the informal sector, this must be done out of general tax revenues, not contributions since, by definition, it is impossible to collect contributions from this group. Moreover, it would be counter-productive to divert money from the contributory plan, since this would merely encourage greater evasion, which is already high.

5. The question of whether income support should be provided to the elderly who are outside the contributory scheme depends on how well the family system is working (since this is the main source of old age support in developing countries), whether households with elderly members tend to be relatively poor or relatively rich, and what are the other demands on public resources. Each of these should be studied empirically in Indonesia before a decision is made about whether to provide assistance for the elderly in the informal sector.

6. If income support is provided to the elderly in the informal sector, this should probably take the form of a small universal (residence-based) flat benefit to the very old, rather than a means-tested benefit, to avoid the disincentive effects, high transactions costs, mistargeting and bribery inherent in the latter.

7. A flat benefit could be affordable if kept small, price rather than wage-indexed and specified for the very old. But using scarce public resources to provide better health services may be more valuable to the old as well as the young.

VI. Conclusions

Over 30 countries in Latin America, Europe and the Asian-Pacific region have reformed their social security systems to make them more sustainable, equitable and growth-enhancing. Faced with looming problems such as high and rising required contribution rates, large deficits, early retirement and evasion, these countries have moved away from their old PAYG DB systems and toward “multi-pillar systems” that include two separate parts or pillars. One pillar handles workers’ mandatory retirement savings while the other is a social safety net that diversifies income sources and redistributes to people with lifetime low earnings. The mandatory saving pillar is a pre-funded defined contribution scheme, with the funds managed by private competitive markets. The public pillar provides a minimum pension, a means-tested benefit or a flat benefit. (An earnings-related DB is less desirable and, if used, would need to be carefully designed to prevent overly generous benefits and

redistributions to high earners). A third pillar for additional voluntary saving is usually included, but voluntary arrangements always have much lower participation, which is why some mandatory part is ultimately needed. The various impacts of a PAYB DB, centrally managed funded DC and multi-pillar system with a competitively managed funded DC plan are summarized in Tables 5.

The funded DC pillar with competitive investments is designed to avoid benefit promises that can't be kept and the build-up of a large implicit pension debt, remove the work disincentives and potential unemployment effects stemming from high payroll taxes, minimize political manipulation of the funds and help develop financial markets. At the same time, redistributions through the public pillar become more transparent and deliberate. While the new systems in most of these countries are still too new to evaluate, the pension reform in Chile, in existence for over 20 years, has been credited with making a major contribution to Chile's high growth rate.

What does all of this imply for Indonesia? Each country must decide for itself what kind of system it wants, but this tour of the world suggests some questions that Indonesian policy-makers should ask as they redesign their system. So I end this paper with a list of questions and next steps that Indonesia might consider.

1. Should a new DB plan be introduced? One idea in the draft act is the possibility of a DB plan—which runs counter to the international movement toward DC plans. This would be risky for government, would raise labor costs for employers and reduce take-home pay, international competitiveness and jobs for workers. DB plans inevitably turn out to be more expensive than initially expected, as workers live longer and retire earlier than anticipated, while managing to evade contributing for a good deal of the time. This means that higher-than-expected payroll taxes turn out to be necessary and the public treasury eventually ends up shouldering part of the bill. A DB plan may be enticing to policy-makers because it allows them to promise a new benefit while initially generating a cash surplus from the new contributions, before workers begin to retire. Of course, this “free lunch” is deceptive, as the government is at the same time accumulating a large IOU that has to be redeemed later on. In general, DC plans are more sustainable financially, without government subsidy. Indonesia is fortunate that it has thus far avoided the introduction of a DB plan (except in the civil service). If a DB is introduced, it should be very modest in size, with progressive replacement rates to avoid perverse redistributions due to mortality differentials, should raise the retirement age with a large penalty for early retirement, should price rather than wage-index benefits and should offer survivor's benefits for widows, financed by a reduction in husband's pension.

2. What is the best way to manage the investment of funds that will be accumulated by the DC plan (or by a new DB plan)? How will the well-documented problems of fund management in Jamsostek and Taspen be avoided in the future? An increasing number of countries in Latin America, Europe and the Asia-Pacific region have concluded that private competitive fund management will produce higher returns, more efficient allocation of capital and better governance results than centrally managed funds. Workers or their unions and

employers chose these decentralized fund managers and investment strategies. Indonesia could transition to a more competitive position by allowing employers to opt out of Jamsostek into a pension provider chosen from an approved list, or by holding a transparent international competitive bidding process to pick a small group of joint venture investment managers among whom workers could choose. In either case, a more diversified investment portfolio, including international diversification, is essential, if the object is to maximize the rate of return achievable with modest risk.

3. What kind of safety net should be provided? Should the public benefit be part of the contributory scheme or universal (age and residence-based)? If the latter, which method should be used? A benefit that is available on to contributors should probably be financed out of contributions, to avoid perverse redistributions from poor to rich, while benefits that extend to informal sector workers would necessarily be financed by the public treasury. As discussed above, a small flat public benefit for all old people, financed out of general revenues, would be the preferred approach for the latter purpose. But whether this is the best use for public funds depends on how well the family support system is operating, whether households with elderly members are relatively poor or rich households, and what are other priority claims on limited public resources. Improving health services might be a more valuable use of these funds, both for the old and young.

Underlying all these choices is the need to simulate the long-term cost and distributional consequences of any policies that are considered, before the policies are adopted. The simulation should cover a period of at least 60 years, which is the expected future lifetime of a young person entering the labor force until he dies. It is very important to think carefully about the assumptions made in this analysis, including expected mortality rates, evasion rates, retirement age and rates of return on any funds that accumulate. Indonesia should take pains to avoid the common error of making optimistic assumptions to justify generous defined benefits on the basis of modest contributions, which later turn out to be non-sustainable. These simulations will inform policy-makers about the financial affordability of alternative reforms. They will also produce cost estimates that can be inputs into economic analyses of the impact of alternative policies on employment, national saving, productivity and growth. The draft pension law is a welcome statement of principles, a recognition that the present situation is unsatisfactory, but clearly, Indonesia is only at the beginning of a long process that will determine how these principles are implemented. The devil is in the details and the details will determine whether the results are good or bad for Indonesians.

Table 1: Benefit rate and required contribution rate in mature PAYG DB system as population ages, depending on retirement age and evasion (projected for 2030 in Indonesia)

A. Benefit rate (average pension/average wage) from 7% contribution

Retirement age	50% evasion	no evasion
55 (35 years' work)	10%	21%
65 (45 years' work)	21%	42%

B. Contribution rate needed to finance benefit rate=50% average wage

55 (35 years' work)	34%	17%
65 (45 years' work)	17%	8%

Assumptions: population support ratio = 3/1 if retirement age is 55, 6/1 if retirement age is 65, based on population projections for Indonesia from U.S. Bureau of Census International Data Base. With evasion, all workers are assumed to work long enough to qualify for benefit, then begin to evade.

Table 2. Implicit Public Pension Debt of Low- and Middle-Income Countries

Country	Public Debt Pension 1999/2000	Spending	IPD by discount rate		
			2%	4%	5%
as share of GDP					
Brazil	33	9	500	330	275
Macedonia, FYR	41	9	441	291	244
Slovenia	25	11	429	298	255
Romania	18	6	386	256	214
Poland	43	12	379	261	220
Ukraine	59	9	365	257	220
Portugal	55	5	358	233	193
Malta	56	5	356	234	194
Slovak Republic	31	8	304	210	179
Hungary	59	9	300	203	171
Uruguay	45	14	295	214	187
Kyrgyz Republic	135	7	282	185	154
Croatia	33	11	274	201	175
Estonia	7	9	268	189	163
Moldova	78	8	229	159	136
Lithuania	28	7	221	155	134
Nicaragua	109	2	220	131	104
Turkey	65	5	217	146	123
Costa Rica	34	2	203	121	97

Philippines	71	1	185	107	81
Iran, Islamic Rep. of	10	2	146	89	72
Bolivia	56	4	111	73	62
Argentina	53	5	106	85	78
Ecuador	209	1	103	63	51
Mexico	19	1	101	65	54
Colombia	24	2	88	56	46
Dominican Republic	23	1	80	49	40
Cape Verde	52	1	78	47	38
Chile	9	7	77	60	53
Senegal	78	2	73	51	44
Mauritius	35	3	63	47	42
El Salvador	22	2	60	43	37
Peru	43	2	57	40	34
Korea, Republic of	33	1	57	33	26
Morocco	79	1	50	32	26

Source: Carmichael and Palacios 2003.

Table 3: Countries with Multi-Pillar Reforms

Country	Year began operations	Public pillar		
		mpg	flat & means-tested	Earnings-related
LATIN AMERICA				
Argentina	1994		X	
Bolivia**	1997	X	X	
Colombia	1994			X
Costa Rica	2000			X
Chile	1981	X		
Ecuador	In process			X
El Salvador	1998	X		
Mexico	1997	X		
Nicaragua	In process	X		
Panama (public sector workers)	1997			
Peru	1993			
Dominican Republic	2003	X		
Uruguay	1995			X
WESTERN EUROPE				
Denmark*	1993		X	
Netherlands*	1986		X	

Sweden**	2000	X		X
Switzerland*	1985			X
UK***	1988		X	
EASTERN AND CENTRAL EUROPE				
Bulgaria	2002	X		X
Croatia	2002	X		X
Estonia	2002		X	X
Hungary	1998	X		X
Kosovo**	2001		X	
Latvia	2001	X		X
Lithuania	In process			X
Macedonia	2003			X
Poland	1999	X		X
Russia	In process			X
Slovakia	In process			X
ASIA PACIFIC REGION				
Australia*	1992		MT	
Hong Kong*	2000		MT	
India (public sector workers)**	In process			
Kazakhstan	1998	X		

*employer-sponsored plans; **institutional model; *** personal + employer-sponsored

Table 4: Replacement rate (pension/final wage) from 7% funded defined contribution plan, depending on rates of return, retirement age and evasion

	Real rate of return	
	2%	5%
Retirement age		
55 (contribute 35 years)	13% replacement rate	28% replacement rate
65 (contribute 45 years)	29% replacement rate	64% replacement rate
65 (50% evasion)	15% replacement rate	32% replacement rate

Assumptions: rate of wage growth (economy-wide + age-earnings) = 3%

Expected age of death = 75

Results for 50% evasion are based on years of evasion randomly interspersed with contributing years; replacement rates would change if evasion years were concentrated at the beginning or end. Workers who do not evade receive full pension even if some workers do evade.

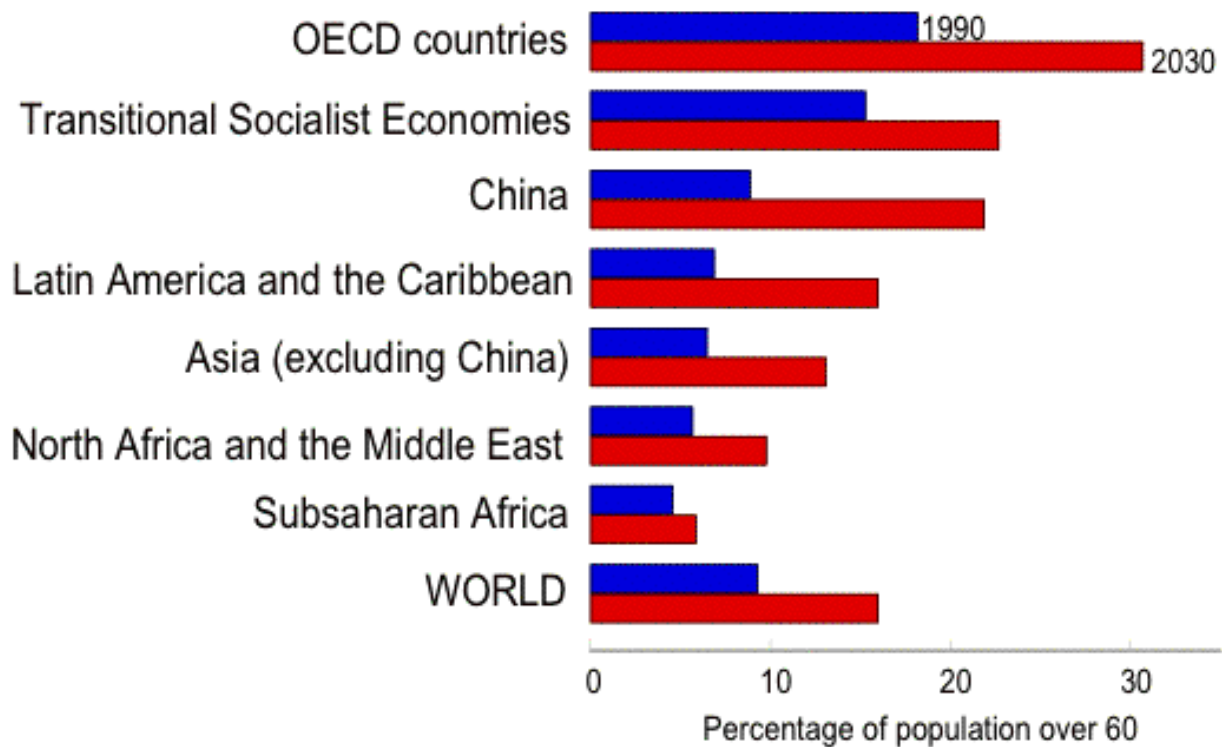
Table 5: Comparison of system impacts

	PAYG DB	DC--funds publicly managed	DC—funds competitively managed
Are costs sensitive to population aging?	Yes, since current workers finance current pensions	No, since pension is financed by retiree's own savings	no, since pension is financed by retiree's own saving
Is contribution rate sustainable?	No—must rise as system matures and population ages	Low interest rate will require high contribution rate to get reasonable pension	Probably-but target replacement rate and contribution rate must be consistent
Incentive to evade?	Yes, when incremental benefits < contribution	Yes, because of low interest rate	Less, because interest rate is higher
Incentive for early retirement	Yes, formula usually doesn't penalize early retirement	some, because of low return	Less, because of higher return and early retirement brings lower pension
Unfunded pension debt?	yes	no	no
Risk to government	Risk of shortfall due to evasion, early retirement, incr. longevity; pension debt	May have to compensate for low interest	Less risk to government
Risk to individual	Political risk	Low return almost certain	Financial market volatility
Rate of return	Not applicable	low	higher
Diversified portfolio	Not applicable	Low—government bonds, bank deposits, SOE loans	Higher—bonds, equities, int'l diversification, if permitted
Impact on national saving	Negative, because of pay-off to first generation	Ambiguous	Positive, if not offset by government deficits
Impact on labor cost and employment	Small initially, because most payroll tax passed back to workers in form of lower wages; larger job impact for minimum age workers and for PAYG DB as population ages		
Impact on take-home pay	Net wage reduced by payroll tax unless minimum wage prevents this; larger reduction for PAYG DB as population ages and tax increases		
Impact on labor supply	Negative for older workers—ER	Negative for older workers--ER	Neutral—less ER
Impact on labor informality	Evasion increases informal sector	Evasion increases informal sector	Retains more workers in formal sector
Productivity	Negative—less saving	Negative—poor allocation of capital	Positive—more saving, better capital allocation
Financial market development?	No	No	Yes

Economic growth	Negative--less saving, labor, productivity	Negative—less saving, labor, productivity	Positive—more saving, labor, productivity, financial markets
Intra-generational redistribution	Often redistributes to rich	Not redistributive	Not redistributive
Inter-generational redistribution	To first covered generations	none	None

FIGURE 1

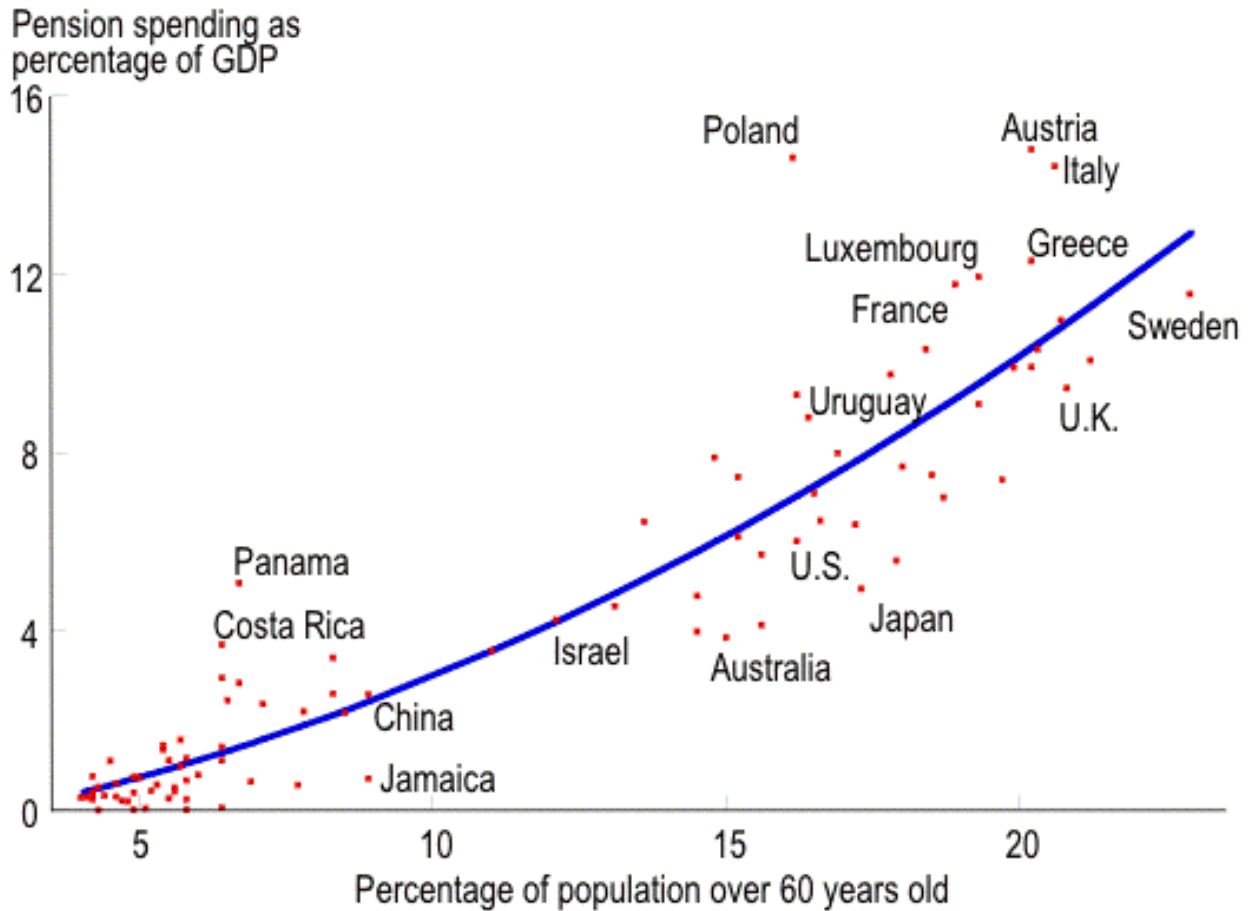
Percentage of the Population Over 60 Years Old, by Region, 1990 and 2030



Source: World Bank 1994.

FIGURE 2

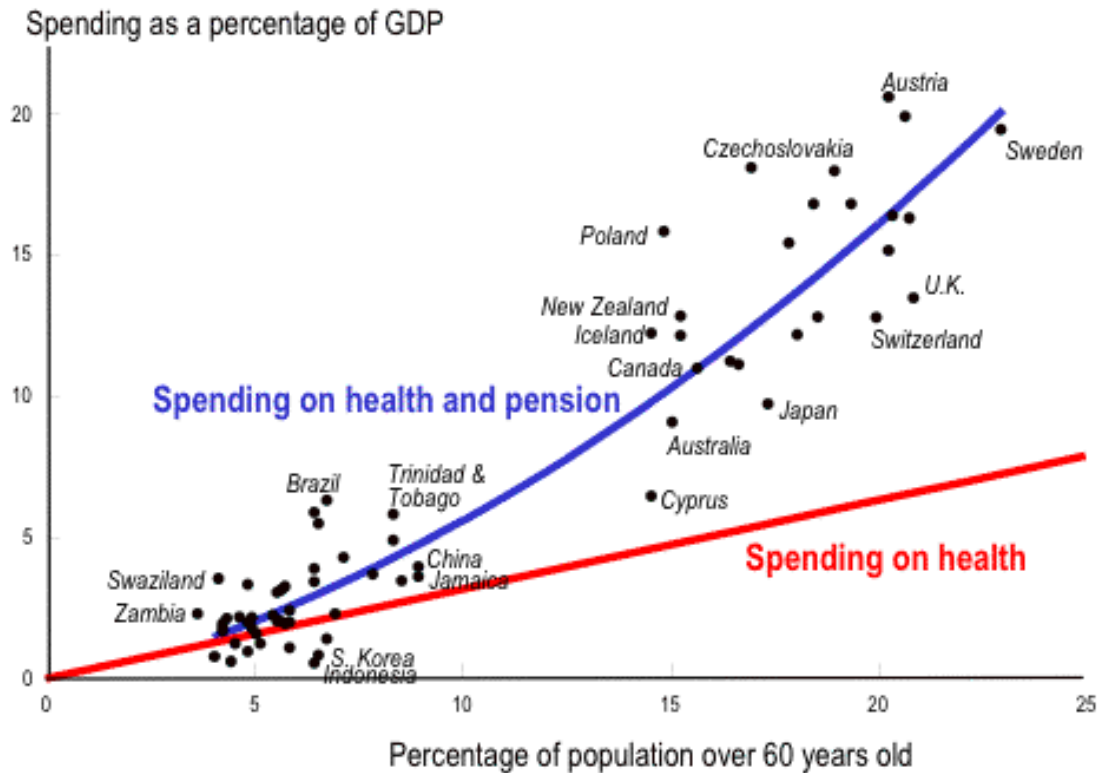
Relationship Between Percentage of the Population over 60 Years Old and Public Pension Spending



Source: World Bank 1994.

FIGURE 3

Public Health and Pension Spending versus Population Aging



Source: World Bank 1994

Implicit Public Pension Debt, 1990

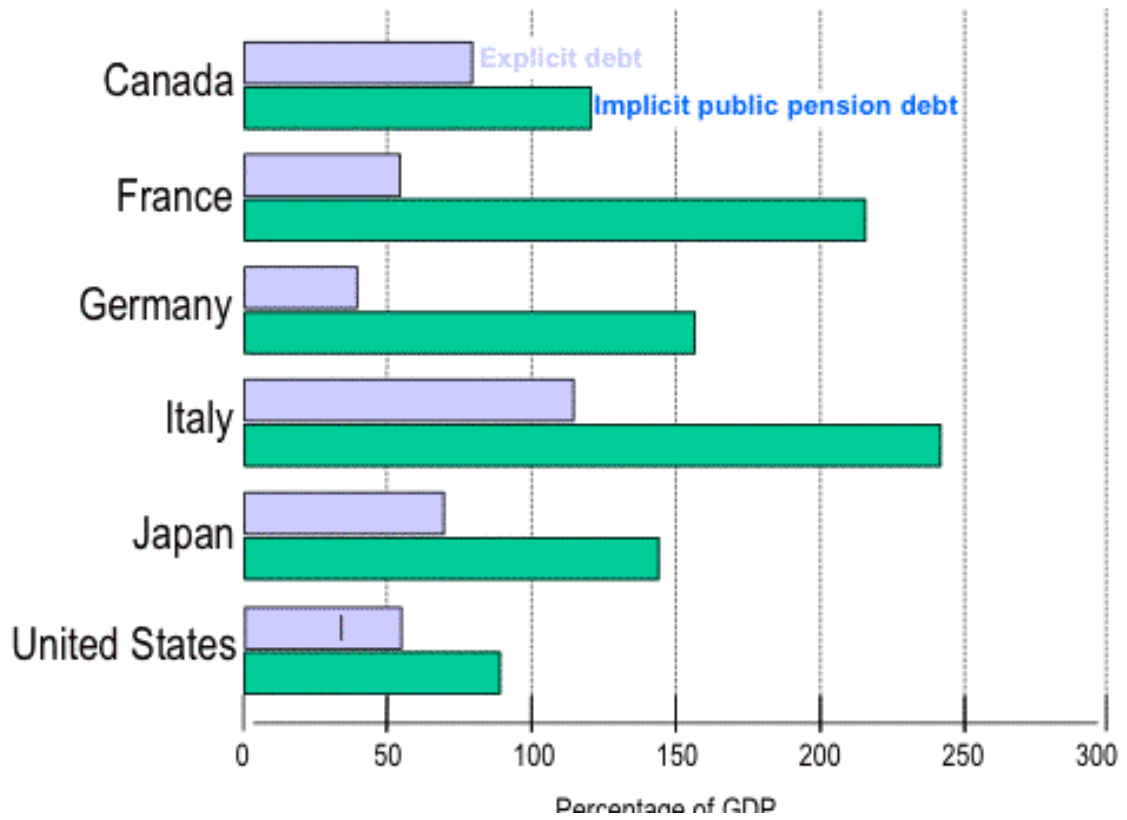
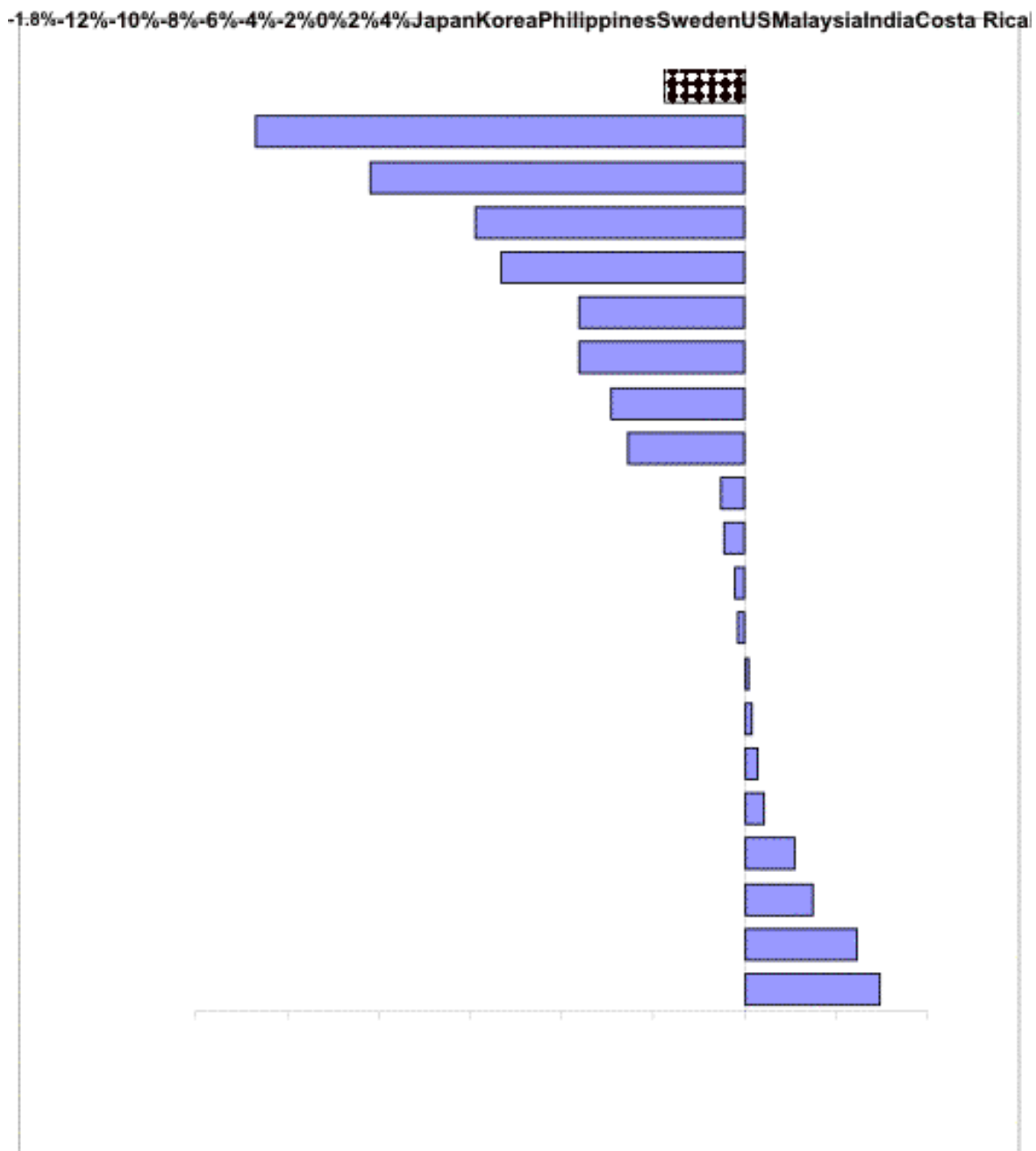


FIGURE 4

Source: Van der Noord and Hurd 1994.

FIGURE 5

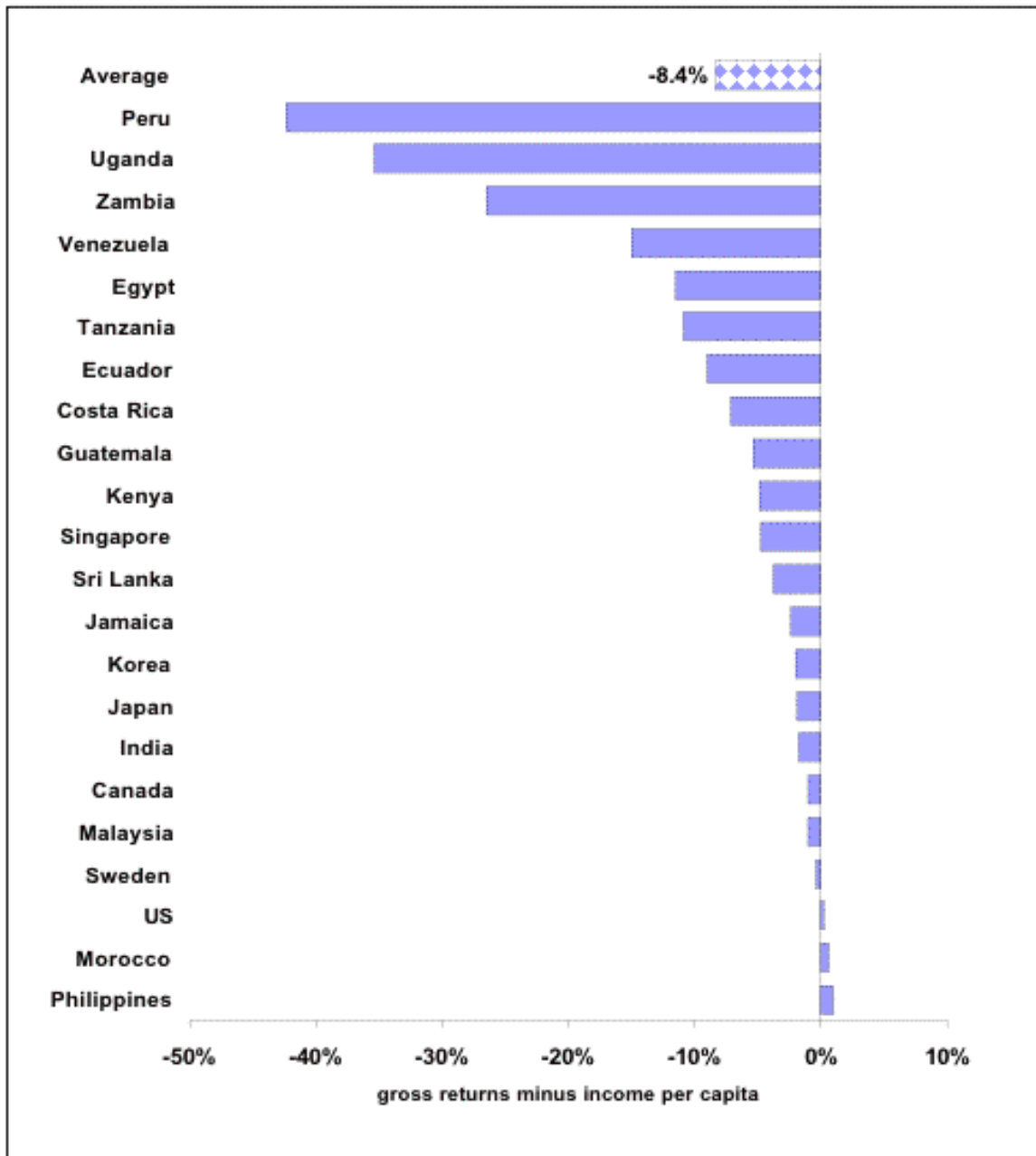
RETURNS TO PUBLICLY MANAGED PENSION FUND



Source: Iglesias and Palacios. 2000

FIGURE 6

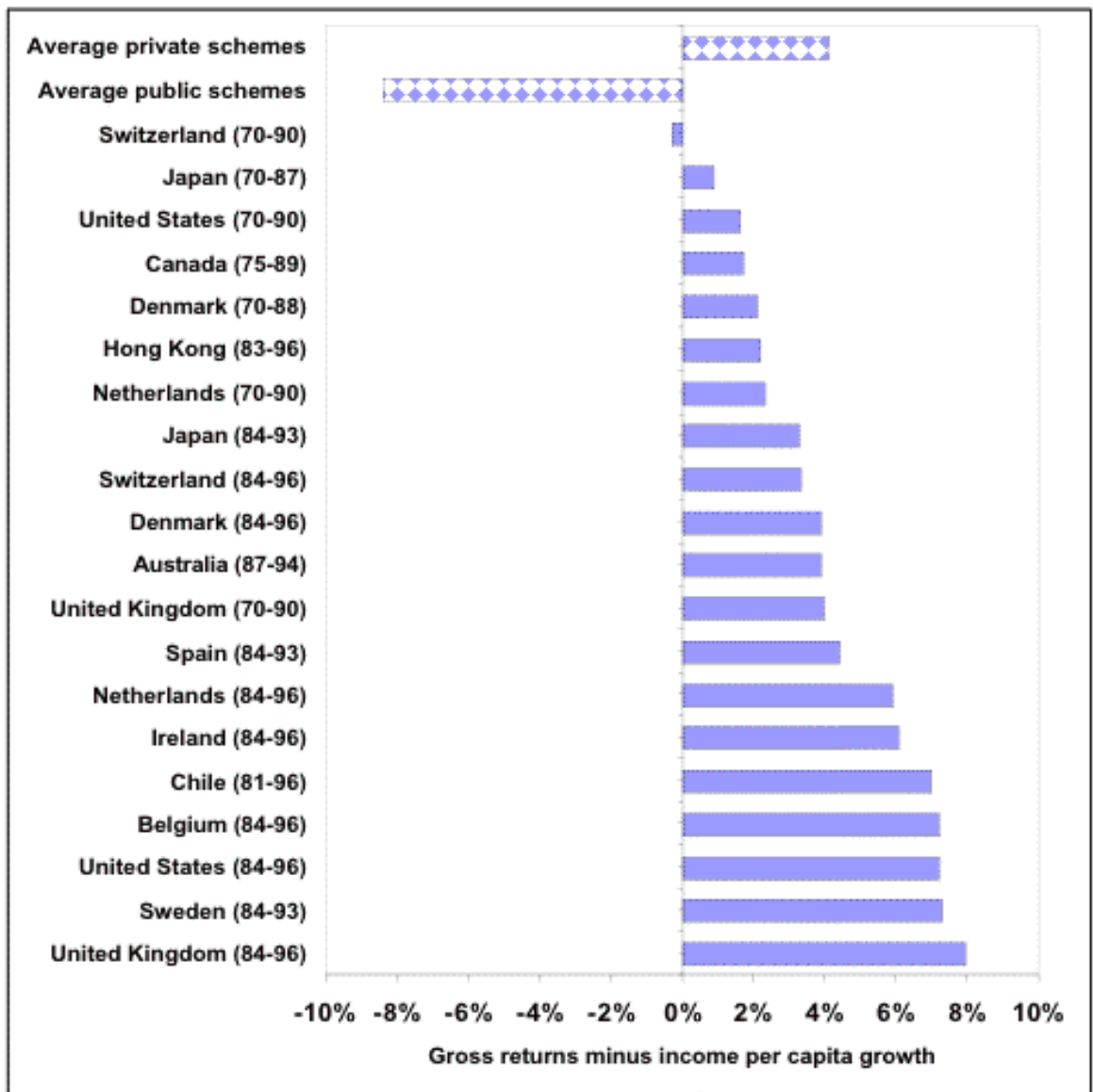
RETURNS TO PUBLICLY MANAGED PENSION FUNDS MINUS GROWTH RATE IN PER CAPITA INCOME



Source: Iglesias and Palacios. 2000.

FIGURE 7

RETURNS TO PRIVATELY MANAGED PENSION FUNDS



Source: Iglesias and Palacios 2000.

Diffusion of structural reform around the world, 1980-2000

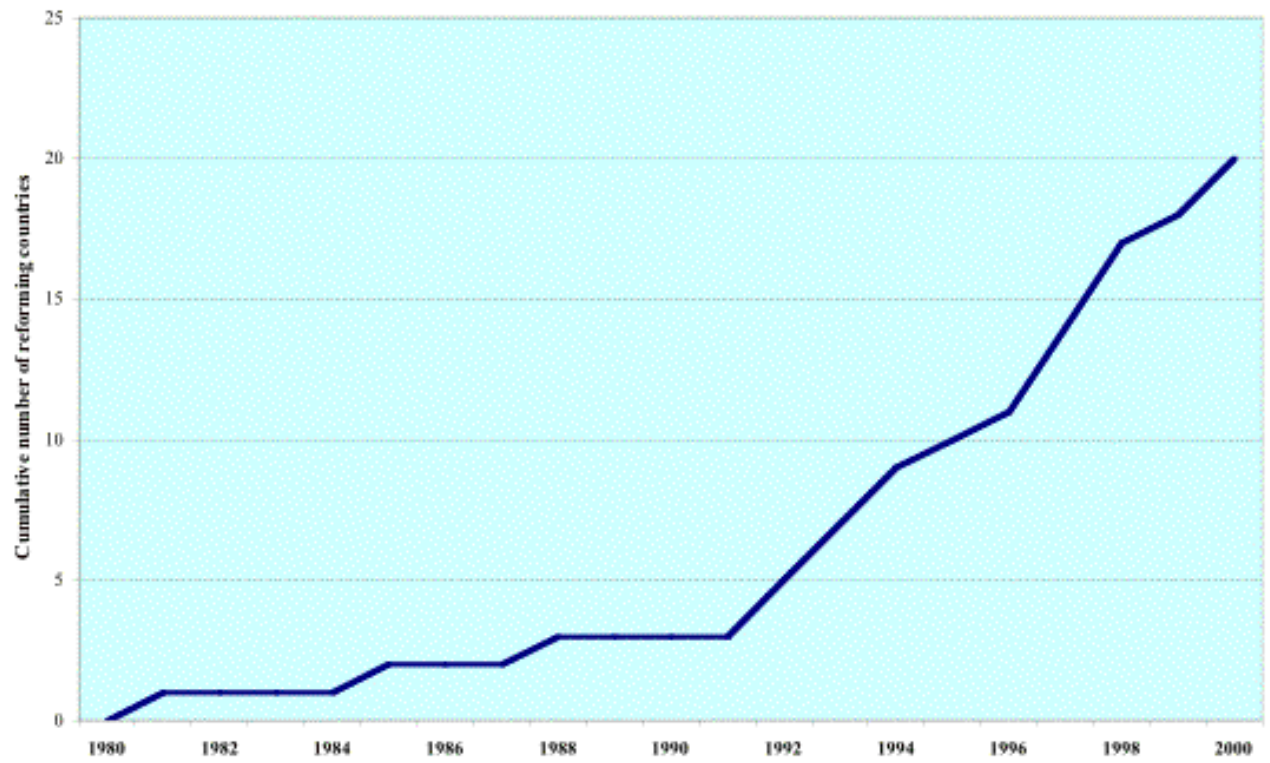


FIGURE 8

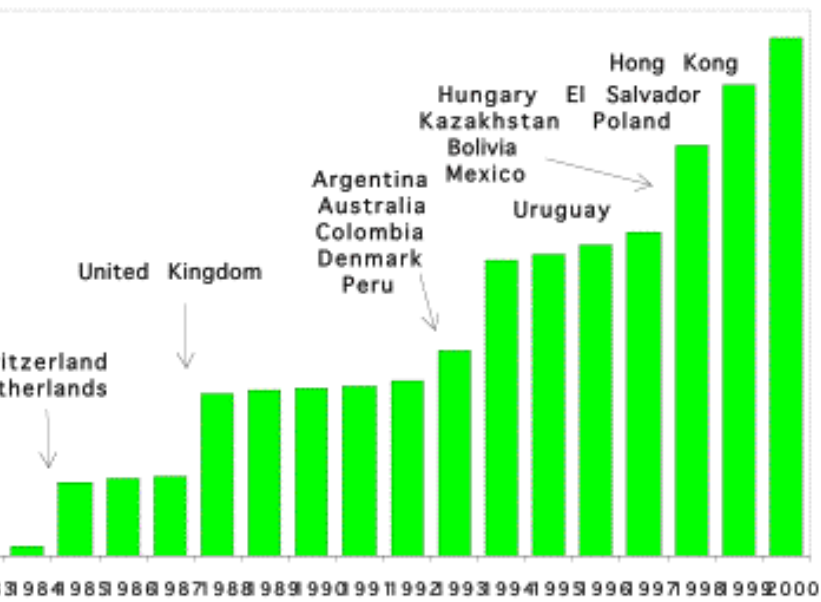
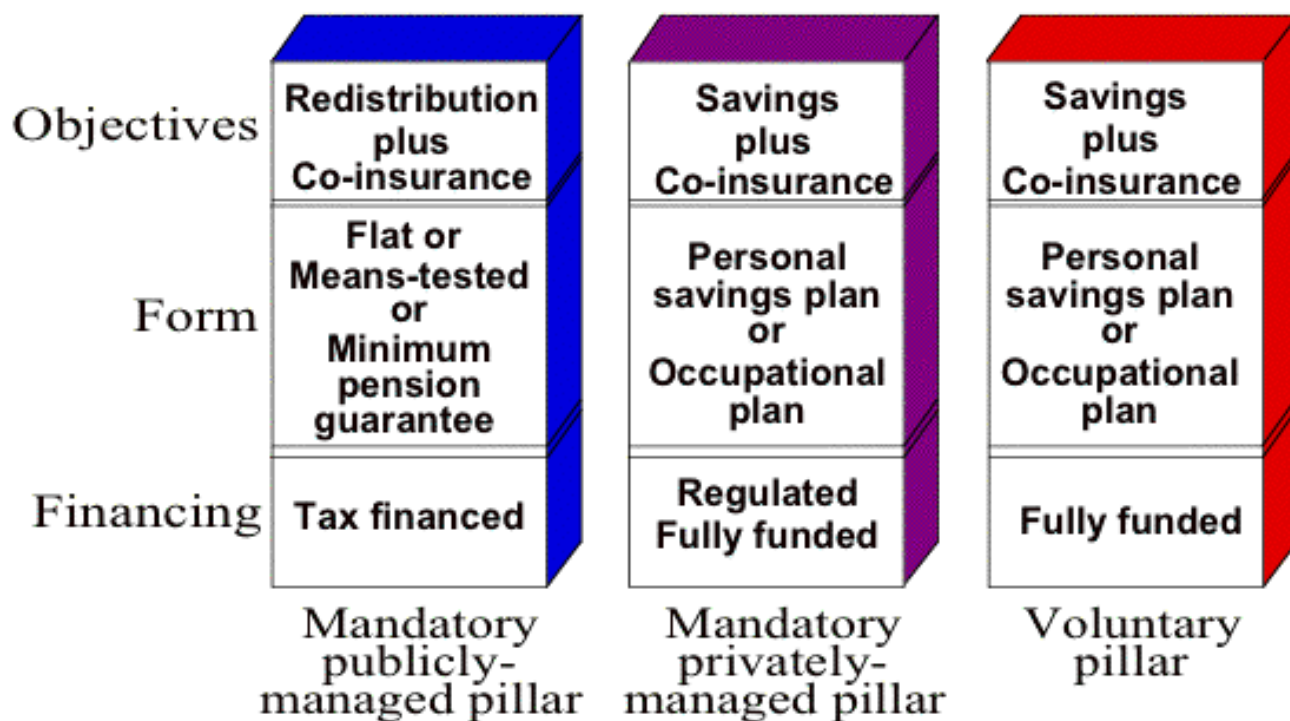


FIGURE 9
NUMBER OF CONTRIBUTORS TO A MANDATORY PRIVATE PLAN,
1982-2000

FIGURE 10

The Pillars of Old Age Income Security



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ENDNOTES

[1] For example, every time the technical experts and trustees of the U.S. social security system have assessed its fiscal soundness, they have found that people are living longer and having fewer babies than expected and therefore are putting greater financial pressures on the system.

[2] For examples of the extensive literature on the impact of social security on labor supply and savings, respectively, see Gruber and Wise 1997; Kotlikoff, Gokhale and Sabelhaus 1996; also see summary of this literature in World Bank 1994.

[3] For an analysis of the significant employment effect of minimum wage increases (or increase in other labor costs for low earners) see Suryadhadi 2001. For females and young workers, the

employment elasticities are estimated to be -0.3 , implying that for every 10% increase in costs, employment of these workers fell by more than 3%.

[4] For a summary of the large literature on intra- and inter-generational redistributions under PAYG see World Bank 1994. For applicability to the U.S. see Kotlikoff 2001 and Feldstein 2000.

[5] As a trustee of the new pension fund in Kosovo, I have faced that problem. Given all the political uncertainties in Kosovo, we are investing all the money in worker DC accounts centrally, but outside of Kosovo. We have had to decide whether to invest in low risk investments (such as short term government notes from industrialized countries) with a very low return, or whether to aim for a higher return, which requires some risk-taking (for example, putting part of our portfolio into stocks). We have decided to put 25% into stocks, 75% into the risk-free money market. But we have also realized that we will have to move toward greater worker choice, because some workers will not want to bear any risk that goes with equity investments, while others will be prepared to accept a lot more risk than 25% stocks.

[6] DB plans run by private employers have been phased out at an even faster rate, as companies have found them riskier and more expensive than expected. Government regulations requiring companies to vest pensions, fully fund them, increase the funding when asset values fall and report on the company books any unfunded liabilities, have hastened this phase-out. Virtually all new company pension plans in industrialized countries are now DC and the majority of private sector DB plans have been converted or are in the process of being converted to DC. This is probably desirable, as workers previously had a false sense of security from these plans which, in fact, were not completely secure, and taxpayers often have had to pick up a large part of the ultimate bill as company plans failed. More failures are expected in the future, in the US and UK. This paper concentrate on mandatory plans but Indonesia would do well to examine this experience in other countries with voluntary plans, as well.

[7] For a summary of this literature see James 1998a and 1998b; Schmidt-Hebbel 1999a; Acuna and Iglesias 2001. For particular impacts of the reform, also see James, Edwards and Wong 2003; James, Martinez and Iglesias 2004a and b; James and Edwards 2004.

[8] See Gruber and Wise 1998 for evidence from many countries that actuarial adjustments which reduce the implicit tax on labor raise the labor force participation of older men). Also see James and Edwards 2004 for evidence from Chile that the reform led workers to postpone retirement.

[9] In Chile, where this issue has been actively researched, the current consensus is that total national saving increased significantly as a result of the pension reform (Schmidt-Hebbel 1998, 1999a, 1999b).

[10] See Schmidt-Hebbel 1999a; also see Musalem and Catalan 1999 on OECD countries.

[11] It is difficult to predict the future rate of real wage growth in Indonesia, since this is very sensitive to policies adopted by the Indonesian government as well as exogenous events. Over the past 2 decades real wage growth has varied from large negative to large positive rates. We show results for a 3% annual growth rate, which includes age-earnings growth for the individual.

[12] For discussion of several plans that economize on administrative costs see James, Ferrier, Smalhout and Vittas 2000; James, Smalhout and Vittas 2001; Shoven 2000.

[13] For further details on the Canadian, Irish and New Zealand funds see Palacios 2002 and for a set of model rules and reporting procedures, see Carmichael and Palacios 2004.

[14] Some means-tested programs target to poor communities instead of poor individuals, in an attempt to avoid these difficulties and costs. However, recent research has shown that considerable inequality exists within communities, including poor communities, and the richer families within poor communities often control the allocation of public resources and appropriate the benefits, thereby defeating the object of the targeting (Elbers et al 2004, Mansuri and Rao 2003, Dreze, Lanjouw and Sharma 1998).

[15] The flat benefit is sometimes tied to contributory employment—an attempt to build work incentives into the safety net. For example, Argentina requires 30 years of contributions to receive the full flat but also has a reduced flat (70% of the full) for 10 years of contributions. Mexico pays a flat benefit per day worked into the account of each contributing worker. Flat benefits that depend on covered employment leave unprotected many women and informal sector workers, who constitute the majority of old people.

[16] The Swiss public benefit is financed by a payroll tax with no ceiling on taxable earnings, while in most countries taxable earnings are subject to a rather low limit. This makes the Swiss system more redistributive but also, possibly, more distortionary toward work incentives of high earners.